

**DRAFT
REVISED SUBSEQUENT
ENVIRONMENTAL IMPACT REPORT**



**Carbon California Company LLC
Agnew Lease Oil and Gas Project
SCH No. 2015021035**

April, 2020



**County of Ventura Resource Management Agency
Planning Division**

Carbon California Company LLC Agnew Lease Oil and Gas Project

Draft Revised Subsequent Environmental Impact Report

SCH No. 2015021035

Prepared By

County of Ventura
Resource Management Agency – Planning Division
800 S. Victoria Avenue
Ventura, California 93009

Staff Contact: Mindy Fogg
Telephone: (805) 654-5192

Prepared with the assistance of

Rodriguez Consulting, Inc.
Santa Barbara, California

April, 2020

GUIDE TO THE READER

This Revised Subsequent EIR (RSEIR) has been prepared in response to a Writ of Mandate issued by the Supreme Court of the State of California, Ventura County, that overturned a decision by the Ventura County Board of Supervisors to certify a Supplemental EIR (SEIR) prepared for a proposed oil and gas production project (Ventura County Planning Division Case No. PL 13-0158) located at the Agnew Lease project site. The Court ordered that the SEIR be revised to include additional analyses of the proposed project's potential air quality and traffic safety impacts. The Table provided below describes the additional environmental impact evaluations required by the Court and indicates where the additional environmental impact analyses are located in the RSEIR.

The SEIR reviewed by the Court was prepared for a proposed project that requested an approval from County of Ventura to allow: the continued operation of the existing oil and gas production facilities located at the project site for an additional 25-years; construction and operation of three new oil wells; re-drilling one existing oil well; the full-time use of an existing on-site gas flare; and to allow project-related trucks to use Koenigstein Road to access the project site. That proposed project was subsequently revised by the project applicant. The revised project is a request to allow: the continued operation of the existing oil and gas production facilities located at the project site for an additional 25-years; construction and operation of two new oil wells; re-drilling one existing oil well, the full-time use of an existing on-site gas flare; and to allow project-related truck to use Koenigstein Road. This RSEIR evaluates the environmental impacts of the revised proposed project.

Court Ordered Analysis Included in the Revised Supplemental EIR

Court Ordered Analyses to be Included in the RSEIR	Location of the Court Ordered Analyses in the RSEIR
Compare all project-related air emissions to the air quality thresholds of significance adopted for the Ojai Valley.	The adopted air quality thresholds for the Ojai Valley are described in Section 4.1.2 (Thresholds of Significance).
Evaluate project-related air emissions from all project-related emission sources, including the proposed full-time use of an on-site flare.	Project-related construction air emissions are summarized on Table 4.1-4. Baseline (existing) and proposed project-related air emissions are summarized on Table 4.1-5. Project-related emissions are compared to the Ojai Valley air quality thresholds of significance on Table 4.1-6.

Court Ordered Analysis Included in the Revised Supplemental EIR

Evaluate potential project-related health risk impacts.	Potential health risk impacts resulting from construction-related emissions and long-term project operation emissions are evaluated in Section 4.1.3 (Impact Analysis) under the Toxic Air Emissions and Health Risk Impacts subheading.
Evaluate the project's cumulative air quality impacts.	The project's cumulative air quality impacts are evaluated in Section 4.1.4 (Cumulative Impacts).
Evaluate the project's potential traffic safety impacts resulting from the additional of project-related traffic to the intersection of State Route 150 and Koenigstein Road.	The project's potential traffic safety impacts are evaluated in Section 4.2.3 (Impact Analysis) under the Route 150/Koenigstein Road Project Potential Safety Impacts subheading.

COUNTY OF VENTURA

**CARBON CALIFORNIA COMPANY LLC
AGNEW LEASE OIL AND GAS PROJECT**

**DRAFT
REVISED SUBSEQUENT ENVIRONMENTAL IMPACT REPORT**

CONTENTS

<u>Section</u>	<u>Page</u>
Executive Summary	ES-1
1.0 Introduction.....	1-1
1.1 Project Background.....	1-1
1.2 Purpose and Legal Authority for this RSEIR	1-9
1.3 Scope and Content of This RSEIR.....	1-11
1.4 Lead, Responsible and Trustee Agencies	1-12
1.5 Environmental Review Process	1-13
1.6 Documents Incorporated by Reference.....	1-14
2.0 Project Description.....	2-1
2.1 Project Overview	2-1
2.2 Project Applicant and Owner.....	2-1
2.3 Project Characteristics	2-1
2.4 Project Objectives	2-5
2.5 Required Approvals	2-5
3.0 Environmental Setting	3-1
3.1 Project Site	3-1
3.2 Zoning and Land Use Designations.....	3-6
3.3 Land Use Planning	3-6
3.4 Surrounding Land Uses.....	3-8
3.5 Cumulative Projects	3-8
4.0 Environmental Impact Evaluation	4-1
4.1 Air Quality	4.1-1
4.2 Traffic Circulation and Safety	4.2-1
4.3 Biological Resources	4.3-1
4.4 Climate Change.....	4.4-1
4.5 Water Resources	4.5-1
4.6 Noise	4.6-1
4.7 Environmental Issue Areas Addressed in the 1983 Final EIR.....	4.7-1

5.0	Other Required CEQA Sections	6-1
5.1	Growth Inducing Impacts	5-1
5.2	Significant Environmental Effects that Cannot be Avoided.....	5-1
5.3	Energy Conservation.....	5-2
6.0	Alternatives	6-1
6.1	No Project Alternative	6-1
6.2	Operate Existing Facilities Only Alternative.....	6-2
6.3	Reduced Project Intensity Alternative	6-3
6.4	Alternatives Rejected from Further Analysis	6-5
6.5	Environmentally Superior Alternative.....	6-7
7.0	References and Preparers.....	7-1
7.1	References.....	7-1
7.2	Preparers	7-2

FIGURES

Figure 2.3-1	Proposed Oil Well Sites	2-2
Figure 2.3-2	Proposed Project Site Plan	2-3
Figure 3.1-1	Regional Location	3-2
Figure 3.1-2	Project Location	3-3
Figure 3.1-3	Project Site Aerial Photo.....	3-4
Figure 3.2-1	Land Use and Zoning Designations	3-7
Figure 3.3-1	Project Area.....	3-10
Figure 4.1-1	Health Risk Assessment Receptor Map	4.1-19
Figure 4.1-2	Health Risk Assessment Source Map	4.1-21
Figure 4.2-1	Existing Street Network/Project Site Location	4.2-3
Figure 4.2-2	Existing Traffic Volumes.....	4.2-5
Figure 4.2-3	Existing Lane Geometry and Traffic Controls.....	4.2-6
Figure 4.2-4	Project Trip Distribution and Assignment	4.2-12
Figure 4.2-5	Existing + Project Traffic Volumes	4.2-13
Figure 4.2-6	Cumulative Traffic Volumes.....	4.2-26
Figure 4.2-7	Cumulative + Project Traffic Volumes.....	4.2-27

TABLES

Table 1.1-1	Previously Approved Discretionary Permits	1-2
Table 1.1-2	1983 FEIR Project-Specific Mitigation Measures for CUP No. 3543 - Modification 4	1-4
Table 1.1-3	1983 FEIR Cumulative Mitigation Measures for CUP No. 3543 - Modification 4.....	1-5
Table 1.1-4	2016 FSEIR Mitigation Measure Summary	1-8
Table 3.2-1	Estimated Existing Large Truck Trips: 2015-2017	3-6
Table 4.1-1	Emissions Sources vs CEQA Significance.....	4.1-8

Table 4.1-2	Ojai Planning Area Criteria Pollutant Significance Thresholds	4.1-11
Table 4.1-3	Health Risk Significance Thresholds	4.1-11
Table 4.1-4	Maximum Day Construction Phase (Short-Term) Emissions	4.1-12
Table 4.1-5	Baseline, Project-Related and Total Criteria Pollutant Emissions (lb./day)	4.1-13
Table 4.1-6	Court-Ordered Air Quality Impact Assessment Methodology Project-Related Criteria Pollutant Emissions vs Thresholds (lbs/day))	4.1-14
Table 4.1-7	Risk per VCAPCD Guidelines Analysis	4.1-17
Table 4.1-8	Risk per Existing + Proposed Project Analysis	4.1-23
Table 4.2-1	Existing Roadway Segments Levels of Service	4.2-4
Table 4.2-2	Existing Intersection Levels of Service	4.2-7
Table 4.2-3	Minimum Acceptable Level of Service For Roadway Segments and Intersections	4.2-8
Table 4.2-4	Thresholds of Significance for Changes in Level of Service At Intersections	4.2-9
Table 4.2-5	Existing and Estimated Project-Generated Truck Trips	4.2-10
Table 4.2-6	Project-Related Vehicle Trip Generation	4.2-11
Table 4.2-7	Existing + Project Roadway Levels of Service	4.2-14
Table 4.2-8	Existing + Project Intersection Levels of Service	4.2-14
Table 4.2-9	Signal Warrant Results – State Route 150/Koenigstein Road	4.2-17
Table 4.2-10	Cumulative Roadway Levels of Service	4.2-24
Table 4.2-11	Cumulative + Project Roadway Levels of Service	4.2-24
Table 4.2-12	Cumulative Intersection Levels of Service – A.M. Peak Hour	4.2-25
Table 4.2-13	Cumulative Intersection Levels of Service – P.M. Peak Hour	4.2-28
Table 4.4-1	Greenhouse Gas Significance Threshold	4.4-4
Table 4.4-2	Construction-Related Greenhouse Gas Emissions	4.4-5
Table 4.6-1	Project Area Ambient Noise Levels (dBA)	4.6-2
Table 4.6-2	Construction Noise Thresholds of Significance	4.6-3
Table 4.6-3	One Hour Average Noise Levels (Leq)	4.6-4
Table 4.6-4	Drilling Noise Impacts	4.6-4
Table 4.6-5	Mitigated Drilling Noise Impacts	4.6-5
Table 4.7-1	Project-Specific Environmental Issues Evaluated in the 1983 Final EIR	4.7-1
Table 4.7-2	Cumulative Environmental Issues Evaluated in the 1983 Final EIR	4.7-4
Table 6.5-1	Alternatives Impact Comparison Summary	6-8

APPENDICES

- Appendix A: December 4, 2017 Writ of Mandate
- Appendix B: Air Quality Impact Assessment; Sespe Consulting
- Appendix C: Traffic Study, Associated Transportation Engineers
- Appendix D: Agnew Lease VCAPCD Permit to Operate
- Appendix E: VCAPCD PEETS Emission Factors for Crude Oil Wells

- Appendix F: AB 52 Notification of Consultation Opportunity
- Appendix G: 2016 SR 150 and Koenigstein Road Analysis and Ventura County Analysis Review Memorandum
- Appendix H: Transcript of the July 28, 2016 Ventura County Planning Commission Hearing for the Nesbitt Oil Well Project (PL15-0060)
- Appendix I: County of Ventura, November 21, 2019: Ventura County Public Works Agency Transportation Department Memorandum.
- Appendix J: California Department of Transportation Letter Dated September 28, 2015.

EXECUTIVE SUMMARY

Proposed Project. This document is a Revised Subsequent Environmental Impact Report (RSEIR) that evaluates the potential environmental impacts of a request to modify Conditional Use Permit No. 3543 (Case No. PL13-0158) to allow the continued operation of the existing Carbon California Company oil and gas production facilities located in the eastern portion of the Upper Ojai Valley for an additional 25 years. The proposed project evaluated by this RSEIR also includes the following components:

1. The drilling of three new oil and gas wells on the existing graded pad that was authorized by CUP 3543.
2. The re-drilling of one of the existing oil and gas wells authorized by CUP 3543.
3. Allow the use of Koenigstein Road so that project-related trucks can use the roadway to access the project site.
4. Allow the continued use of a flare at the site for excess produced gas.

The proposed project does not include the conduct of well stimulation treatments, as defined in Public Resources Code section 3157.

Project Background. The potential environmental impacts of the existing oil and gas facility located at the proposed project site were evaluated in a Final Environmental Impact Report (FEIR) that was adopted and certified by the Ventura County Planning Commission on November 17, 1983. The certified 1983 FEIR is incorporated into this RSEIR by reference. The 1983 FEIR states:

The movement of large vehicles at the intersection of State Route 150 and Koenigstein Road could create unsafe conditions.

At the time the FEIR was certified and CUP 3543 granted, the Ventura County Planning Commission also made findings that characterized the use of Koenigstein Road by large trucks associated with oil and gas drilling and production activities as unsafe and a potentially significant traffic impact. To reduce the potentially significant impact to a less than significant level, the Planning Commission imposed a condition of approval (Condition No. 52) that generally prohibits large project-related trucks from using Koenigstein Road, which connects to Highway 150 approximately 2,800 feet south of the project site. In 1995, the private access road that was designated as the access route to be used by project-related large trucks was destroyed by flooding. Since the access road bridge was destroyed, project-related trucks have used Koenigstein Road to access the project site from Highway 150 because there is no other road that provides access to the project site.

Since the currently proposed project includes a request to allow large trucks to use Koenigstein Road to access the project site from Highway 150, the requested project revision would exacerbate a potentially significant environmental impact that was identified in the 1983 FEIR. The Planning Division determined that pursuant to Public Resources Code Section 21166 and CEQA Guidelines Section 15162, that a Subsequent EIR (SEIR) was required to examine the potential environmental effects of the proposed project revisions.

The Planning Commission certified the Final SEIR prepared for the proposed project in 2016. The Planning Commission's certification of the 2016 FSEIR was appealed to the Board of Supervisors, and on June 21, 2016 the Board also certified the FSEIR. The certified FSEIR is incorporated into this RSEIR by reference. On July 21, 2016, a petition was filed with the Superior Court of the State of California, Ventura County to overturn the Board of Supervisor's certification of the 2016 FSEIR. On December 4, 2017, the Court ordered that further analysis of the proposed project's environmental impacts be conducted. The additional environmental review is to include an evaluation of the proposed project's potential air quality impacts, and potential traffic safety impacts associated with the project's proposed use of Koenigstein Road. This RSEIR has been prepared in accordance with the Court's ruling.

Table ES-1 summarizes the environmental impacts for each of the environmental issue areas evaluated in this RSEIR; indicates if mitigation measures for significant impacts are required; and identifies the level of impact significance after the implementation of proposed mitigation. No significant and unavoidable impacts have been identified that would result from the implementation of the proposed project.

**Table ES-1
Impact Summary**

Environmental Issue Area	Impact	Mitigation Measures	Impact Significance
Air Quality	No significant project-specific or cumulative impacts identified	None required Ozone precursor (NOx) reduction measures recommended	Less than Significant (Class III)
Traffic Circulation and Safety	No significant project-specific or cumulative traffic volume impacts identified Potential long-term project-specific and cumulative traffic safety impacts resulting from the continued use of the State Route 150/Koenigstein Road intersection by project-related tanker trucks	Traffic Volume Impacts None required Traffic Safety Impacts Limit tanker truck turning movements through the SR 150/Koenigstein intersection to daytime hours and require the installation of truck crossing warning signs along SR 150 A recommended condition of approval addresses the use of oversized vehicles on County roads.	Less Than Significant with Mitigation (Class II)
Biological Resources	Potential short-term impacts to nesting birds; and potential short- and long-term impacts to California condor. No significant cumulative impacts identified	Nesting bird avoidance and California condor mitigation measures required	Less Than Significant with Mitigation (Class II)
Climate Change	No significant project-specific or cumulative impacts identified	None required	Less than Significant (Class III)
Water Resources	No significant project-specific or cumulative impacts identified	None required	Less than Significant (Class III)
Noise	Potential short-term construction noise impacts. No significant long-term or cumulative impacts identified	Short-term drilling noise reduction measures required	Less than significant with Mitigation (Class II)

1.0 INTRODUCTION

This document is a Revised Subsequent Environmental Impact Report (RSEIR) that evaluates the potential environmental effects of a request by Carbon California Company LLC to modify Conditional Use Permit 3543 (CUP 3543). This RSEIR replaces the Final SEIR prepared for the Mirada Petroleum Oil and Gas Project (PL13-0158) that was certified by the Ventura County Board of Supervisors on June 21, 2016.

The project site is located in the eastern portion of the Upper Ojai Valley in the unincorporated area of Ventura County, approximately 5.5 miles east of the City of Ojai. The proposed project is a request to modify the existing requirements of CUP 3543 to allow the following:

1. The continued operation of the existing oil and gas production facilities authorized by CUP 3543 for an additional 25 years.
2. The drilling of two new oil and gas wells on the existing graded pad that was authorized by CUP 3543.
3. The re-drilling of one of the existing oil and gas wells authorized by CUP 3543.
4. Allow the use of Koenigstein Road so that project-related tanker trucks can use the roadway to access the project site.
5. Authorize the full-time use of an existing natural gas flare at the project site for excess produced gas.

The proposed project is described in detail in Section 2.0, Project Description. The proposed project evaluated by this RSEIR is similar to the project that was evaluated by the previously prepared SEIR that was certified in 2016. However, since the SEIR was certified one component of the proposed project has been revised. As currently proposed, the request to drill three new oil and gas wells at the project site has been revised and the project now proposes to only drill and operate two new oil and gas wells at the project site instead of the previously proposed three new wells. Other project-related components remain unchanged, including requests to: allow the continued operation of existing oil production equipment at the project site, re-drill one existing oil well, allow project-related tanker trucks to use Koenigstein Road, and to allow the full-time use of an existing gas flare at the project site.

1.1 PROJECT BACKGROUND

Permit History. Table 1.1-1 lists the project-related discretionary permits that have been approved by Ventura County. The existing oil and gas operations located on the project site were first developed in 1976 under the authority of CUP 3543. Through a series of permit modifications between 1976 and 1983, the facility operator was ultimately authorized to install and operate six

oil wells and other associated facilities. To date, only three of the previously approved oil wells have been installed and placed in production. CUP 3543 allows the project operator to export 12 truckloads of produced fluid (oil and wastewater) per week from the project site. In addition, the CUP prohibits the use of Koenigstein Road for truck access to the project site. However, the truck access route specified by CUP 3543 was destroyed by flooding in 1995 and that route has not been reconstructed.

On April 7, 2016, the Planning Commission approved a request to modify CUP 3543 (Case No. PL13-0158) to allow continued operation of existing oil and gas operations authorized by CUP 3543; drill 3 new wells (for a total of 6 wells on the project site); re-drill one existing well; and authorize the use of Koenigstein Road by project-related trucks. The decision by the Planning Commission to approve the project was appealed to the Board of Supervisors. The Board denied the appeal and approved the requested modification of CUP 3543 in June 2016.

**Table 1.1-1
Previously Approved Discretionary Permits**

Permit No.	Approved Use	Decision Maker and Approval Date
CUP No. 3543	Drill five wells	Board of Supervisors April 26, 1976
Modification No. 1	Drill five additional wells	Board of Supervisors November 27, 1977
Modification No. 2	Install three new well sites with 6 wells each	Board of Supervisors July 1, 1977 Withdrawn November 28, 1978
Modification No. 3	Allow extension of condition deadlines	Planning Director August 24, 1978
Modification No. 4	Drill 1 exploratory well and 5 additional wells (total of 6 wells)	Planning Commission November 17, 1983
PL13-0158	Continued operation of existing oil and gas operations authorized by CUP 3543; drill 3 new wells (for a total of 6 wells on the project site); re-drill one existing well; and authorize the use of Koenigstein Road by project-related trucks.	Planning Commission April 7, 2017
PL13-0158	Continued operation of existing oil and gas operations authorized by CUP 3543; drill 3 new wells (for a total of 6 wells on the project site); re-drill one existing well; and authorize the use of Koenigstein Road by project-related trucks.	Board of Supervisors June 21, 2016

Project-Related Environmental Review. The environmental review that has been previously conducted for the oil and gas production operations authorized by CUP 3543, and the purpose of this RSEIR, is briefly described below.

1983 Final EIR. As shown on Table 1.1-1, CUP 3543 Modification No. 4 authorized the drilling and operation of one exploratory well and the drilling and operation of five additional oil wells on the project site. The Planning Commission certified a Final Environmental Impact Report (FEIR) for Modification No. 4 on November 17, 1983. The 1983 FEIR is incorporated into this RSEIR by reference. The 1983 FEIR concluded that CUP 3543 Modification No. 4 would result in significant and mitigable environmental impacts. Table 1.1-2 summarizes the project-specific mitigation measures identified in the 1983 FEIR. Table 1.1-3 summarizes the cumulative mitigation measures identified by the 1983 FEIR.

2016 Subsequent Final EIR. On April 7, 2016, the Planning Commission certified a Subsequent Final Environmental Impact Report (FSEIR) for proposed oil and gas production operations at the proposed project site (Project No. PL13-0158). The project evaluated by the 2016 FSEIR consisted of a request to: continue operation of existing oil and gas facilities located on the project site; drill three new oil and gas wells; re-drill one existing well; and allow the use of Koenigstein Road by project-related tanker trucks. The 2016 FSEIR was prepared because of the request to use Koenigstein Road as the project site access from State Route 150 for large project-related trucks. The Planning Division determined that the request to use Koenigstein Road had the potential to exacerbate a potentially significant environmental impact identified in the 1983 FEIR. Therefore, pursuant to Public Resources Code Section 21166 and CEQA Guidelines section 15162, a SEIR was required to examine the potential environmental effects of the proposed project site access. The 2016 FSEIR is incorporated into this RSEIR by reference.

Table 1.1-4 summarizes the environmental issue areas evaluated by the 2016 FSEIR, the required and recommended mitigation measures identified by the FSEIR, and the level of significance of project-related impacts after the implementation of proposed mitigation measures. The 2016 FSEIR did not identify any significant and unavoidable impacts that would result from the proposed changes to the existing oil and gas facility. One potentially significant impact related to short-term construction noise was identified by the 2016 FSEIR, and a mitigation measure to reduce that impact to a less than significant level was identified.

The Planning Commission's certification of the 2016 FSEIR was appealed to the Board of Supervisors. On June 21, 2016 the Board also certified the FSEIR.

Table 1.1-2
1983 FEIR Project-Specific Mitigation Measures for CUP No. 3543 - Modification 4

Impact Number	Issue Area	Mitigation Measure	Recommended or Required	Implemented (Yes / No)
1	Geology	All drilled wells shall be treated and tested with annular sealing to the base of the fresh water reservoir in order to protect fresh water supplies.	Required by DOGGR	Yes
2	Hydrology	Proposed sump should be lined with impervious material to prevent groundwater degradation.	Recommended	No. The Planning Commission did not include this measure in the conditions of approval for Modification 4 of CUP No. 3543.
3	Traffic	The applicant should implement traffic control measures furnished by the Sheriff's Department at the intersection of State Route 150 and Koenigstein Road, such as flagmen.	Recommended	No. The Planning Commission did not include this measure in the conditions of approval for Modification 4 of CUP No. 3543 because conditions of approval preclude the use of Koenigstein Road by large trucks.
4	Biological Resources	Install and maintain a wire fence with meshing around each oil well sump.	Required	Yes.
5	Noise	If noise complaints are received during the drilling phase of the project, noise shall be attenuated to meet the noise threshold standards as noted in the Ventura County General Plan.	Required	Yes. The Noise mitigation measures were incorporated into CUP 3543-4 as conditions of approval nos. 35 to 38, 42 & 43.
6	Archeological Resources	A registered Archeologist shall conduct a surface determination of the area involved in well drilling. If archeological sites are discovered during the construction phase of the project, all work shall cease until a qualified Archeologist can evaluate the site and make a recommendation towards preservation of the site.	Recommended	No. The Planning Commission did not include this measure in the conditions of approval for Modification 4 of CUP No. 3543.
7	Visual Resources	If the well is productive, the site shall be landscaped. If the well is unproductive, the site shall be restored to its original topographical condition.	Recommended	Yes. The measure to address visual resources was incorporated into CUP 3543-4 as condition of approval no. 32.

Table 1.1-3
1983 FEIR Cumulative Mitigation Measures for CUP No. 3543 - Modification 4

Impact Number	Issue Area	Mitigation Measure	Recommended or Required	Implemented (Yes / No)
1	Visual Impacts	Following the completion of drilling or production of the well, all equipment and deleterious material including contaminated soil should be removed from the site. A grading modification should occur to recontour the site. The soil should be cultivated. Seeding of the area with appropriate indigenous or compatible grasses and shrubs should occur. Enforcement of the Ojai Valley Area Plan oil exploration goals and policies should be addressed.	Recommended	Yes. The measures to address cumulative visual impacts were incorporated into CUP 3543-4 as conditions of approval nos. 21, 23 & 28.
2	Air Quality	<p>The applicant must establish and maintain general emission control measures pursuant to the Air Quality Management Plan Rules. The measures include:</p> <p>a. Limiting drilling rig operations to one operating unit at a time in the permit area.</p> <p>b. Reduction of fugitive emissions from petroleum handling and transportation by the following methods:</p> <ul style="list-style-type: none"> • Prohibiting the venting of well head gas to the atmosphere. If quantities of gas exist in excess of that needed to power production equipment, the gas shall be flared in a manner acceptable to the Ventura County Air Pollution Control District and County Fire. • Producing well equipment shall be maintained. • All valves, flanges and connections should be routinely maintained. 	Recommended	Yes. The measures to address cumulative air quality impacts were incorporated into CUP 3543-4 as conditions of approval nos. 24 & 50.
3	Biological Resources	Creation of a task force that would identify and recommend to the Planning Commission a means of minimizing the impact of present and future oil operations in the Sisar/Bear Creek areas.	Recommended	No. The Planning Commission did not include this measure in the conditions of approval for Modification 4 of CUP No. 3543.

Table 1.1-3
1983 FEIR Cumulative Mitigation Measures for CUP No. 3543 - Modification 4

Impact Number	Issue Area	Mitigation Measure	Recommended or Required	Implemented (Yes / No)
4	Ground-water Supply	<p>Mud tanks and berms shall be constructed to confine all drilling fluids and cuttings within the drill site area.</p> <p>Subsurface waters shall be protected by casings and cement.</p> <p>Casing strings shall be cemented in place and water shutoff tests should be conducted and witnessed by DOGG staff.</p> <p>All liquid drilling discharge wastes shall be accumulated into steel tanks within the permit area and hauled away to an appropriate disposal site.</p> <p>The steel tanks shall be removed within 30 days after the completion or abandonment of the wells. Solid drilling materials could be temporarily deposited in an earthen depression with the final disposition of solid waste materials to be accomplished in compliance with State Regional Water Quality Control Board (RWQCB) regulations.</p> <p>Hazardous materials must be disposed of per RWQCB and County Environmental Health regulations.</p> <p>Abandoned water wells on the drilling site shall be destroyed in accordance with the County Well Ordinance.</p> <p>Any oil spills from pipes or other facilities shall be cleaned and corrected in accordance with the Environmental Protection Agency's Spill Contingency Plan.</p> <p>Fluid loss shall be monitored onsite during drilling with the use of an approved tracer.</p>	Required	Yes. The measures to address cumulative groundwater supply impacts were incorporated into CUP 3543-4 as conditions of approval nos. 22, 23, 54 & 56.

Table 1.1-3
1983 FEIR Cumulative Mitigation Measures for CUP No. 3543 - Modification 4

Impact Number	Issue Area	Mitigation Measure	Recommended or Required	Implemented (Yes / No)
5	Traffic	Heavy-duty truck traffic, from cumulative oil operations could be virtually eliminated if operators would utilize oil pipelines to transport crude oil offsite in place of tank trucks.	Recommended	No. This mitigation measure was not included in the conditions of approval for CUP 3543-4.
6	Noise	<p>Noise intrusion into residential property from drilling or production operations: Noise from the drilling operations on the proposed sites should not exceed 55 dbA between the hours of 7:00 am to 10:00 pm and 45 dbA between the hours of 10:00 pm to 7:00 am.</p> <p>Noise generated by motor vehicles on public right of way: the applicant should not operate a motor vehicle or combination of vehicles on the public right of way within the general vicinity of the proposed sites, at any time or under any condition of grade, load, acceleration or deceleration, in such a manner as to exceed the following noise limits: vehicles 6,000 pounds or more or vehicles with a tow: 86 dbA (speed limit less than 35mph) and 90 dbA (speed limit more than 35 mph).</p> <p>Noise limits should be based on a distance of 50 feet from the center of the lane of travel within the specified speed limit.</p> <p>Test procedures and instrumentation should be in accordance with CHP regulations.</p> <p>Truck movements to and from the site shall be limited between the hours of 7:00am and 7:00 pm. Only well maintained vehicles should be permitted to operate during site preparation, drilling, production and abandonment.</p>	Recommended	Yes. The measures to address cumulative noise were incorporated into the conditions of approval for CUP 3543-4 as conditions nos. 31, 35, 38 & 42.

Table 1.1-3
1983 FEIR Cumulative Mitigation Measures for CUP No. 3543 - Modification 4

Impact Number	Issue Area	Mitigation Measure	Recommended or Required	Implemented (Yes / No)
		Access roads should be constructed at locations furthest from the residential locations. A noise barrier should be installed around all noise producing equipment and areas of the rig.		

Table 1.1-4
2016 FSEIR Mitigation Measure Summary

Issue Area	Mitigation Measures	Level of Impact
Air Quality	None required	Less than Significant (Class III)
Traffic Circulation and Safety	None required	Less Than Significant (Class III)
Biological Resources	None required. Measures to minimize any adverse effects on the California Condor are recommended	Less Than Significant (Class III)
Climate Change	None required	Less than Significant (Class III)
Water Resources	None required	Less than Significant (Class III)
Noise	Erection of a noise barrier during drilling operations	Less than significant (Class II)

Revised Subsequent Environmental Impact Report. On July 21, 2016, a petition was filed with the Superior Court of the State of California, Ventura County to overturn the Board of Supervisor's certification of the FSEIR. On December 4, 2017, the Court issued a Writ of Mandate (Appendix A) that requires further action and reconsideration pertaining to the certification of the FSEIR by the Board of Supervisors. In summary, the Writ of Mandate requires that a RSEIR be prepared that provides additional environmental review of the proposed project's potential air quality impacts, and potential traffic safety impacts associated with the project's proposed use of Koenigstein Road. This RSEIR includes the additional air quality and traffic safety analysis that was required by the Court's ruling.

In its review of the 2016 FSEIR, the Court ordered that this RSEIR's evaluation of project-related air quality impacts compare all project-related emissions of oxides of nitrogen (NO_x) and reactive organic compounds (ROC) to the five pounds per day threshold of significance adopted for the Ojai Valley by Ventura County (County of Ventura Initial Study Assessment Guidelines,

April 26, 2011) and by the Ventura County Air Pollution Control District (Ventura County Air Quality Assessment Guidelines, November 2003). The requirement to compare all project-related NO_x and ROC emissions to the adopted significance thresholds exceeds the analysis methodology requirements specified by the APCD's Air Quality Assessment Guidelines. The APCD Guidelines require that the adopted significance thresholds only be applied to unpermitted sources of emissions (i.e., mobile emissions), while emissions from equipment requiring APCD permits, specifically stationary equipment, are not counted towards the adopted thresholds. This RSEIR's analysis of the proposed project's air quality impacts has estimated all project-related NO_x and ROC emission and compared those emissions to the Ojai Valley Area Plan adopted five pound per day threshold as required by the Court for this project.

Also in compliance with Court's order regarding the 2016 SEIR, an air quality impact assessment (AQIA) and a health risk assessment (HRA) were prepared for the project (Sespe Consulting, January, 2, 2019) and those studies are included as RSEIR Appendix B. After the AQIA and HRA were prepared, the Applicant revised the project to eliminate one of the proposed new oil wells (i.e., the project is now a request to drill two new oil and gas wells at the project site instead of three). An updated AQIA (Sespe Consulting, May 29, 2019) that evaluates the air emission of drilling and operating two new oil wells at the project site was prepared for the revised project and that evaluation is also provided in Appendix B. As shown by the May 29, 2019 updated AQIA, the currently proposed project would result in reduced short- and long-term emissions when compared to the emissions of the previously proposed project. Therefore, the previously prepared HRA is still applicable to the currently proposed project, although, the HRA now over-estimates the effects of project-related air emissions.

1.2 PURPOSE AND LEGAL AUTHORITY FOR THIS RSEIR

The requested changes to the existing oil and gas operations currently authorized by CUP 3543 require a modification of the CUP. Such a modification is a discretionary project that is subject to environmental review pursuant to CEQA, and requires approval by Ventura County decision-makers (i.e. Ventura County Board of Supervisors). In accordance with Section 15151 of the CEQA Guidelines, the purpose of this RSEIR is to:

...inform public agency decision-makers and the public of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.

This document is a RSEIR to the FEIR that evaluated the environmental impacts of CUP 3543 Modification 4 that was certified by the County of Ventura in 1983. This RSEIR has been prepared pursuant to Section 15162 of the CEQA Guidelines, which pertain to the preparation of Subsequent EIRs. The conditions described in Section 15162 related to the preparation of Subsequent EIRs are provided below along with a discussion as to why a Subsequent EIR is required for the proposed project.

1. Substantial changes are proposed in the project which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects [§ 15162(a)(1)].

The oil and gas facility under review was analyzed in the previous 1983 FEIR for its potential impacts on the environment. Mitigation measures were identified in the 1983 FEIR that address the project's potentially significant impacts. In addition to the proposed continued operation of the existing oil and gas facilities, the proposed project also includes the drilling of two new wells and the re-drilling of one existing well on an existing drill pad.

The 1983 FEIR identified mitigation measures to reduce impacts of the original project to a less than significant level (see Tables 1.1-2 and 1.1-3 above). All of the required mitigation measures identified by the 1983 FEIR were implemented prior to the submittal of the current permit modification application.

The proposed drilling of two new oil wells would occur on an existing graded pad and the proposed project would require minimal grading (i.e., less than 50 cubic yards). The requested permit includes a reduction in the maximum amount of tanker truck traffic (8 truckloads per week instead of 12 truckloads per week) that is currently authorized by CUP 3543. All of the project-related tanker and other vehicle traffic would continue to travel on State Route 150 between the project area and the Santa Paula area.

Proposed changes to the existing oil production operations at the project site that would have the potential to result in environmental impacts that are greater than the impacts evaluated by the 1983 EIR. These are the use of Koenigstein Road to access the project site from State Route 150; and the full-time use of a produced natural gas flare at the project site. The existing CUP requires vehicle traffic associated with the oil and gas operations, except for emergency traffic, to access the project site using a private road that connects to State Route 150 southwest of the project site. The private road, however, was destroyed by flooding in 1995 and crossed over an Arizona crossing under the jurisdiction of the California Department of Fish and Wildlife. Since that time, Koenigstein Road has been used to transport produced fluids by tanker truck from the project site as it is the only available access. The existing CUP only allows the use of a produced natural gas flare in the event of an emergency. Operations at the project site, however, have relied on the full-time use of a gas flare because there are no common carrier or private gas collection pipelines located in the vicinity of the project site. The existing full-time use of a flare at the project site has been permitted by the Ventura County APCD.

Based on the analysis included in the 1983 FEIR, the proposal to use Koenigstein Road by large project-related trucks has the potential to result in a substantial increase the severity of a previously identified potentially significant traffic safety impact. Also based on the analysis included in the 1983 FEIR, the proposed use of a full-time flare at the

project site has the potential to result in a significant air quality impact. Therefore, the preparation of a SEIR is required.

- 2. Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects [§ 15162(a)(2)].**

A physical change in the circumstances under which the proposed project would be undertaken includes the previous destruction of the primary permitted access road to the project site. The private access road was destroyed by flooding in 1995. Since that time, the operator of the facility has used Koenigstein Road for access as there is no other available route. The proposal to continue to use Koenigstein Road by a large project-related truck has the potential to result in a substantial increase the severity of a potentially significant traffic safety impact that was identified by the project's FEIR that was certified in 1983. Therefore, the preparation of a SEIR is required.

- 3. New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the Planning Commission certified the previous EIR, shows any of the following:**

- a. The project will have one or more significant effects not discussed in the previous EIR [§ 15162(a)(3)(A)].**

Since the 1983 FEIR was prepared, the permitted truck access road to the project site was destroyed by flooding in 1995. Since that time, the operator of the facility has used Koenigstein Road for large truck access as there is no other available route. The proposed use of Koenigstein Road for large truck access to the project site has the potential to result in a substantial increase the severity of a potentially significant traffic safety impact that was identified by the project's 1983 FEIR. Therefore, the preparation of a SEIR is required.

In summary, the preparation of a SEIR is required due to the destruction of the currently permitted large truck access road and the project-related proposal to allow large trucks to access the project site using Koenigstein Road, and the request to amend the CUP to allow the full-time use of an existing gas flare.

1.3 SCOPE AND CONTENT OF THIS RSEIR

In accordance with the CEQA Guidelines Section 15082, a Notice of Preparation (NOP) for the previously prepared SEIR was published on February 19, 2015. A public scoping meeting was held on March 10, 2015. The NOP, public comments received, and responses to the public comments on the NOP are included as Appendix G to the 2016 SEIR. The SEIR is incorporated into this RSEIR by reference.

CEQA Guidelines section 15125(a) states: "*An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice preparation is published, at the time environmental analysis is commenced....*" Therefore, the baseline conditions used for the analysis of environmental impacts in this RSEIR are the environmental conditions that existed at the time the NOP for the SEIR was published (2015).

The following environmental issue areas are evaluated in this RSEIR:

- Air Quality
- Traffic Circulation and Safety
- Biological Resources
- Greenhouse Gas Emissions
- Water Resources
- Noise

This RSEIR evaluates the same environmental issue areas that were evaluated by the 2016 SEIR. The same environmental issue areas have been evaluated in this RSEIR because: 1) the project evaluated by this RSEIR is similar to the project evaluated by the 2016 SEIR; and 2) the environmental issue areas evaluated by 2016 SEIR were those issue areas (i.e., Air Quality, Traffic Circulation and Safety, Biological Resources, Water Resources, and Noise) for which the proposed project (PL13-0158) had the potential to result in new or substantially increased impacts when compared to the impacts identified by the 1983 FEIR.

The level of detail incorporated throughout this SEIR is consistent with the requirements of CEQA and applicable court decisions. The CEQA Guidelines provide the standard of adequacy on which this document is based. Section 15151 of the CEQA Guidelines state:

"An EIR should be prepared with a sufficient degree of analysis to provide the decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of the proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection, but for adequacy, completeness, and a good faith effort at full disclosure."

1.4 LEAD, RESPONSIBLE AND TRUSTEE AGENCIES

The CEQA Guidelines define "lead," "responsible" and "trustee" agencies. The County of Ventura is the lead agency for the project because it has the principal responsibility for the approval or denial of the project. The decision to grant or not to grant the requested modified CUP is a discretionary action by the County of Ventura.

Pursuant to Section 15381 of the CEQA Guidelines, the term “responsible agency” refers to public agencies other than the lead agency that have discretionary approval authority over the project. Although the proposed oil and gas facilities require ministerial permits issued by the Ventura County Air Pollution Control District (VCAPCD) and the California Division of Oil and Gas and Geothermal Resources (DOGGR), neither of these agencies are a “responsible agency” because they do not have discretionary approval authority over the proposed project. However, this RSEIR will be provided to these agencies for review and comment.

A “trustee” agency refers to a state agency having jurisdiction by law over natural resources affected by a project that are held in trust for the people of the State of California. The SEIR will be circulated to various State and Federal agencies for review and comment, including the: California Department of Fish and Wildlife, California Regional Water Quality Control Board, California Division of Oil and Gas and Geothermal Resources, California Department of Transportation, and the Ventura County Air Pollution Control District.

1.5 ENVIRONMENTAL REVIEW PROCESS

The environmental review process required pursuant to CEQA involves a number of steps as listed in sequence below. The review process is procedurally the same for an EIR as for a SEIR or RSEIR.

Draft Environmental Impact Report. The Draft EIR must contain certain mandatory sections as specified in the CEQA Guidelines.

Public Notice and Review. The lead agency must prepare a Notice of Availability and circulate the EIR for public review and comment for a period of up to 45 days.

Notice of Completion. A lead agency files a Notice of Completion with the State Clearinghouse after it completes the preparation of a Draft EIR.

Final EIR. A proposed final EIR must include the Draft EIR, public comments, a list of persons who commented, and responses to the comment that were submitted.

Final EIR Certification. Prior to approving a project, the lead agency must certify that the Final EIR was prepared in compliance with CEQA and that the Final EIR was considered by the decision-makers.

Lead Agency Decision. A lead agency may: (a) disapprove a project because of its significant environmental effects, (2) require changes in a project to reduce or avoid significant environmental effects, or (c) approve a project despite its significant effects if a statement of overriding considerations is adopted.

Notice of Determination. The lead agency must file a Notice of Determination after deciding to approve a project for which an EIR is prepared.

1.6 DOCUMENTS INCORPORATED BY REFERENCE

Section 15150 of the CEQA Guidelines provides for incorporation by reference of all or portions of another document which is a matter of public record or generally available to the public. The purpose of this section is to disclose existing CEQA documents, technical studies and other information that is directly applicable to the proposed project.

- Final EIR for the Phoenix West Oil and Gas Company Project, 1983. This document is available at:
<http://bosagenda.countyofventura.org/sirepub/agdocs.aspx?doctype=agenda&itemid=77870>
- Final SEIR for the Mirada Petroleum Oil and Gas Project, 2016. This document is available at:
<http://bosagenda.countyofventura.org/sirepub/agdocs.aspx?doctype=agenda&itemid=77870>
- County of Ventura, Initial Study Assessment Guidelines, April 26, 2011
- Ventura County Air Quality Assessment Guidelines, November 2000
- California Division of Oil and Gas and Geothermal Resources, Wellfinder website
- California Department of Transportation, Traffic Counts website
- Final Subsequent EIR for the Focused General Plan Update, June 2005
- MND Addendum for the Mirada Petroleum Project (LU11-0041), May 2013
- Ventura County General Plan, including the Ojai Valley Area Plan
- Ventura County Non-Coastal Zoning Ordinance
- State Guidelines for the Implementation of CEQA
- South Coast Air Quality Management District, Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans Greenhouse Gas Thresholds

2.0 PROJECT DESCRIPTION

2.1 PROJECT OVERVIEW

Carbon California Company., LLC operates three existing oil and gas production wells and associated facilities on the Agnew lease project site under the authority of CUP 3543. Carbon California Company proposes to continue the oil and gas production operation for an additional 25 years, drill two new oil wells, re-drill one existing well, use Koenigstein Road for access to the project site, and the full-time use of an existing on-site gas flare. With implementation of the proposed project, there would be a total of five oil wells included in the facility.

2.1 PROJECT APPLICANT AND OWNER

Project Applicant. Carbon California Company, 270 Quail Court, Suite B, Santa Paula, CA 93060.

Property Owner. Mirada Petroleum, 989 Terracina Street, Santa Paula, CA 93060.

2.3 PROJECT CHARACTERISTICS

The project applicant requests that a modification of CUP 3543 be granted to authorize the continued operation and maintenance of the existing oil and gas exploration and production operations at the project site for an additional 25-year period. The requested permit modification would also authorize the following project changes:

Proposed New Oil Wells. Two new oil wells would be drilled on the existing two-acre Agnew lease well pad (Figures 2.3-1 and 2.3-2). One new well is proposed to be drilled within five years of the effective date of the requested CUP modification approval. The other well would be drilled within 10 years of the effective date of the requested CUP modification approval. Drilling operations for each well would occur on a 24-hour, 7-day per week basis. It would take approximately 10 days to drill each of the proposed wells.

Re-Drill an Existing Oil Well. One existing oil well located on the existing Agnew lease well pad would be re-drilled within 10 years of the effective date of the requested CUP modification approval. Drilling operations for this well would occur on a 24-hour, 7-day per week basis. It would take approximately 10 days to re-drill the existing well.

Project-Related Truck Traffic. The proposed access route change would authorize large project-related trucks to use Koenigstein Road for access to and from State Route 150 during drilling and production operations at the project site. Access to the project site from Koenigstein Road would continue to be provided by an existing private driveway.



Source: Modified from Ventura County RMA, 2016



One Inch = Approx. 2,000 ft.

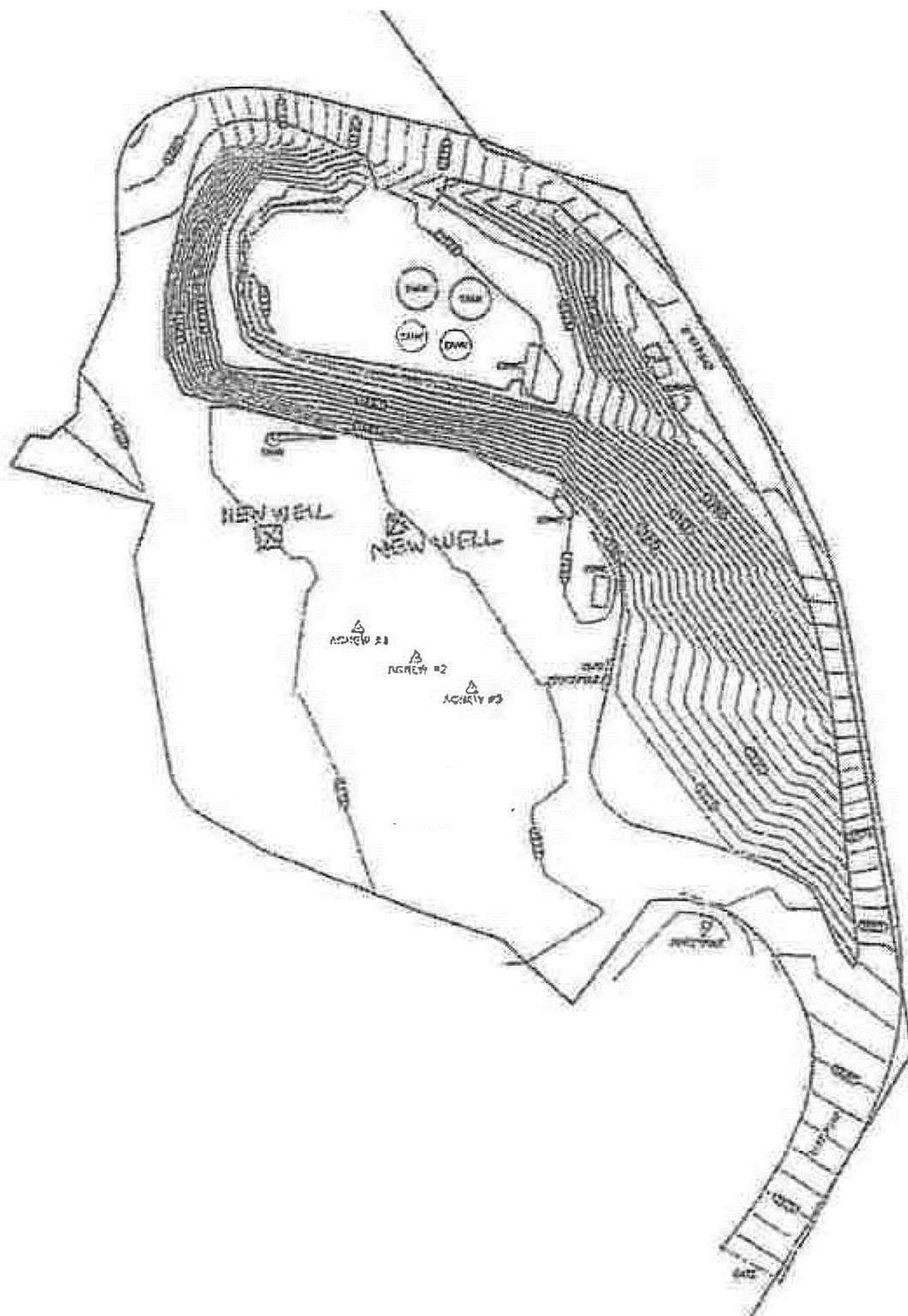
● Proposed Oil Well Location

County of Ventura

Carbon California Company LLC Agnew Lease Oil and Gas Project

Figure 2.3-1

Proposed Oil Well Sites



No Scale

Source: Modified from Ventura County RMA, 2016

County of Ventura

Carbon California Company LLC Agnew Lease Oil and Gas Project

Figure 2.3-2

Proposed Project Site Plan

Continued Use of an Existing Flare. The proposed CUP modification would modify an existing condition of approval that allows the use of a flare for emergency purposes. The proposed condition of approval modification would allow the full-time use of the existing flare.

Proposed Project Operations. Proposed operations at the project site would include trucking of produced oil and wastewater (brine) from the site to off-site oil refining and wastewater disposal facilities. The existing CUP authorizes up to 12 tanker truck loads (24 one-way trips) of produced fluid to be exported from the project site per week. It is proposed that the authorized number of large project-related truck trips be reduced to a maximum of eight (8) tanker truck loads (16 one-way trips) per week. The two proposed new oil wells would be served by the same truck that currently serves the three existing oil wells at the project site. Due to the low volume of fluid produced by the three existing oil wells at the Agnew Lease (the project site), one truck (one trip in and one trip out) per day to remove produced fluids from the site is typically adequate. The same truck that serves the Agnew project site also serves the other oil wells located along Koenigstein Road (i.e., the Nesbitt Lease, ADP Federal, and MP Lane) because those facilities are operated by the proposed project applicant and those wells also produce low fluid volumes. All tanker truck operations would occur during daylight hours Monday through Friday, between 7:30 am and 6:30 pm. For purposes of the requested CUP modification, the term “tanker truck” refers to any vehicle that is hauling produced fluids (including oil, drilling fluids and brine) to or from the site.

The drilling period for each new or re-drilled oil well would occur over a period of approximately 10 days. Drilling operations for each well new or re-drilled well would require approximately 20 workers and 16 trucks that would deliver and remove drilling equipment. Over a two-day period 16 truck trips (8 trucks per day) would bring drilling equipment to the site. Over a separate two-day period 16 trucks (8 trucks per day) would remove drilling equipment from the site. Drilling supplies and drilling equipment would be delivered to and removed from the project site Monday through Friday during daylight hours between the hours of 7:30 a.m. and 6:30 p.m. At times when a drill rig is moved onto or off of the project site, the project operator would implement a traffic control plan. The traffic control plan would be designed to avoid potential traffic-related conflicts at and near the State Route 150/Koenigstein Road intersection. At minimum the traffic control measures would include the use of warning signs and flagmen on State Route 150 and Koenigstein Road in the vicinity of the intersection.

Although the existing CUP does not limit the number of vehicle trips associated with maintenance and operation of production facilities, the project applicant proposes to limit maintenance and operation traffic to 14 maintenance visits per week (i.e. 28 one-way trips). Maintenance-related vehicle trips would typically be by a standard pickup truck.

The proposed CUP modification would revise an existing condition of approval to allow the full-time use of a gas flare located at the project site. The flare was installed and has been used continuously since the existing project site oil wells began operation in 1977. The on-site flare is approximately 19 feet tall and has a maximum width of approximately five feet. A metal shroud encloses the flare burner, which conceals the burner flame. The condition of approval revision is

required because it currently requires that the existing flare only be used in the event of an emergency. Flaring of gas produced at the project site is required because there are no common carrier gas collection pipelines located in the vicinity of the project site. The nearest gas pipeline is located approximately one mile to the west of the project site. To connect to that existing pipeline, the Applicant would have to obtain pipeline easements from the private property owners and install an approximately 250-foot suspension bridge over Sisar Creek.

Other Project-Related Features. The proposed project does not include the removal of any vegetation, and only minimal grading (i.e., less than 50 cubic yards) would be required to construct two new well pads. No new lighting at the project site is proposed. Existing equipment on the project site that would continue to be used by the proposed project includes the following:

- Three oil wells: Agnew 1 (API No. 11120696); Agnew 2 (API No. 1120802); and Agnew 3(API No. 111211930)
- One 500-barrel crude oil storage tank
- One 500-barrel wash tank
- Two 250 barrel produced water tanks
- One oil loading facility
- A flare to incinerate produced gas.
- Lighting and electrical equipment
- Local pipelines

Hydraulic fracturing, acid well stimulation and other “well stimulation treatments”, as defined in Public Resources Code Section 3157, are not included in the proposed project. The use of any such well stimulation treatment as part of the project would require a subsequent discretionary modification of the CUP, additional environmental review under CEQA, and a public hearing.

2.4 PROJECT OBJECTIVES

It is the objective of the proposed project to increase oil and gas production from the existing facility.

2.5 REQUIRED APPROVALS

Achieving the project objectives requires the granting of a modified CUP by the County of Ventura. Should a CUP be granted, ministerial permits must be obtained from the Ventura County Air Pollution Control District and the California Division of Oil and Gas and Geothermal Resources.

3.0 ENVIRONMENTAL SETTING

3.1 PROJECT SITE

Project Site Characteristics. The proposed project site is located in the eastern portion of the Upper Ojai Valley in the unincorporated area of Ventura County, approximately 5.5 miles east of the City of Ojai (Figure 3.1-1). The project area is predominately open space with some low-density residential development and agricultural uses (e.g., orchards). Numerous oil and gas operations have been developed in the project area and throughout the Ojai Oil Field. Oil exploration and production in this area has been ongoing since 1869 and several hundred wells have been drilled. The well credited as the first commercial oil producer in the State of California, Ojai No. 6, is located about one mile from the project site.

The project site is located on a 19.83-acre property (APN 040-0-220-165) and is approximately 2,800 feet north of State Route 150, and approximately 450 feet north of Koenigstein Road (Figure 3.1-2). Oil and gas production operations on the project site, which is referred to as the Agnew Lease, were initiated in 1976 and authorized by Conditional Use Permit 3543 (CUP 3543). Under CUP 3543 the project site operator is authorized to produce oil and gas, and transport the oil and gas by tanker truck to market.

The oil and gas facilities located at the project site are operated by Carbon California Company, LLC. A graded pad that is approximately two acres in size has been developed on the project site, and the following oil and gas production equipment has been installed on the pad:

- Three oil wells: Agnew 1 (API No. 11120696); Agnew 2 (API No. 1120802); and Agnew 3 (API No. 111211930)
- One 500-barrel crude oil storage tank
- One 500-barrel wash tank
- Two 250 barrel produced water tanks
- One oil loading facility
- A flare to incinerate produced gas.
- Lighting and electrical equipment
- Local pipelines

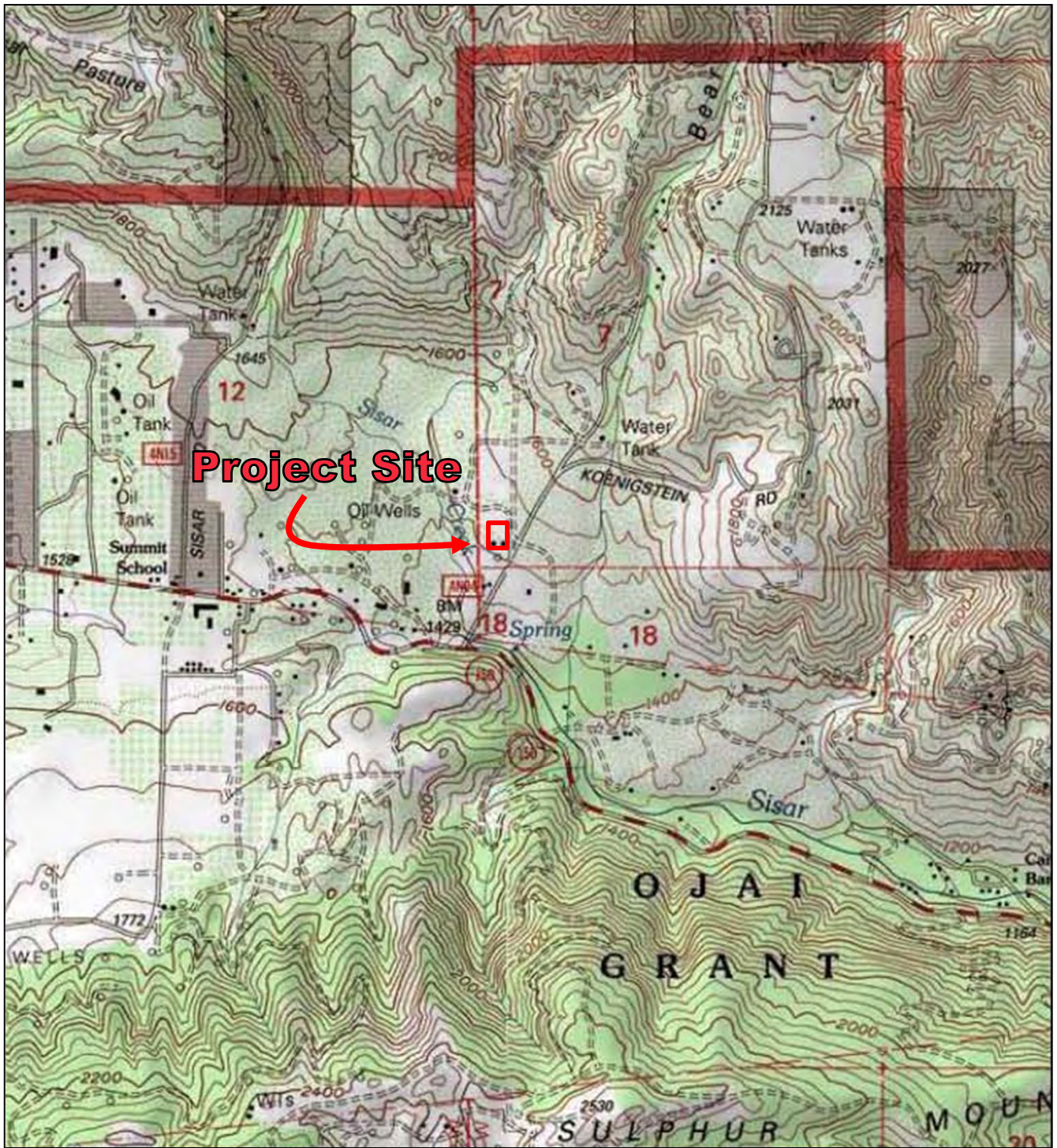
The portion of the existing well pad that would be used for the installation of the two proposed oil wells is devoid of vegetation. Sparse native vegetation is located around the perimeter of the well pad (Figure 3.1-3). Areas in the vicinity of the well pad recently burned during the 2017 Thomas Fire.



County of Ventura

Carbon California Company LLC Agnew Lease Oil and Gas Project

Figure 3.1-1
Regional Location



One Inch = Approx. 1,500 ft.

County of Ventura
Carbon California Company LLC Agnew Lease Oil and Gas Project

Figure 3.1-2
Project Location



Source: Ventura County RMA, 2016



One Inch = Approx. 2,000 ft.

County of Ventura

Carbon California Company LLC Agnew Lease Oil and Gas Project

Figure 3.1-3

Project Site Aerial Photo

Project Site Access. Regional access to the project site is from State Route 150. Vehicles accessing the project site from State Route 150 turn northward onto Koenigstein Road, cross a bridge over Sisar Creek, then travel approximately 2,100 feet northward to the intersection of paved private road. After turning left onto the private road and traveling northward approximately 400 feet, vehicles then turn left onto a dirt access driveway and proceed approximately 300 feet to the project site.

CUP 3543 currently requires that large trucks access the project site by using a private road that intersects with State Route 150 at a location approximately one-half mile west of Koenigstein Road. That road, however, relied on a dry weather crossing (i.e., an “Arizona crossing”) over Sisar Creek. The crossing was destroyed by flooding in 1995 and has not been replaced. Since 1995, Koenigstein Road and the access route described above provide the only access to the project site. Since there is currently no authorized access road for tanker trucks to remove produced fluids from the project site, the existing wells are not operational at this time.

Project Area Oil Truck Traffic. The 2016 FSEIR prepared for the proposed project estimated that based on fluid production data for the 21 oil wells accessed from Koenigstein Road the wells generated approximately one large truck trip per day. Specifically, the 2016 FSEIR reported that between 1995 and 2014, the wells produced a total of 247,141 barrels of fluid (oil and water). Depending on the capacity of the tanker trucks used (capacity typically ranges between 100 and 180 barrels) the amount of produced fluid would have required between 1,373 and 2,471 tanker truck loads to transport the fluid from the project area. The transportation of this fluid would have resulted in approximately 2,746 and 4,942 one-way truck trips over a 20-year period between 1995 and 2014. The average daily truck trips generated by the existing oil production operations between 1995 and 2014 ranged between 0.4 and 0.7 one way trips per day, or approximately one truck traveling to and from the project area on Koenigstein Road per day.

Project Site Traffic. Using recent fluid production data for the three oil wells located on the project site, (2015 through 2017), during that period the existing wells produced a total of 11,893 barrels of fluid (conservation.ca.gov/well search, accessed October 1, 2018). Depending on the capacity of the tanker trucks used, the amount of produced fluid would have required between 66 and 119 tanker truck loads to transport the fluid from the project site. The transportation of this fluid would have resulted in approximately 132 and 238 one-way truck trips over the three year period. The average daily number of truck trips generated by the existing oil production operation between 2015 and 2017 ranged between 0.12 and 0.22 one way trips per day, or less than one truck traveling to and from the project site on Koenigstein Road per day. Fluid production data and related truck trip generation for the three project site oil wells is summarized on Table 3.2-1.

Due to the low volume of fluid produced by the three existing oil wells at the Agnew Lease (the project site), one truck (one trip in and one trip out) per day to remove produced fluids from the site is typically adequate. The same truck that serves the Agnew project site also serves the other oil well projects located along Koenigstein Road (i.e., the Nesbitt Lease, ADP Federal, and

MP Lane) because those facilities are operated by the proposed project applicant and those wells also produce low fluid volumes.

Table 3.2-1
Estimated Existing Large Truck Trips: 2015-2017

Time Period	Total Fluid Exported (bbls)	Number of Truck Loads	Number of One-Way Truck Trips	Number of Days in Time Period	Average Daily One-Way Truck Trips
<i>Estimate Truck Trips Based on a Hauling Capacity of 180 Barrels</i>					
2015-2017	11,893	66	132	1,095	0.12
<i>Estimate Truck Trips Based on a Hauling Capacity of 150 Barrels</i>					
2015-2017	11,893	79	158	1,095	0.14
<i>Estimate Truck Trips Based on a Hauling Capacity of 100 Barrels</i>					
2015-2017	11,893	119	238	1,095	0.22

Source: <https://secure.conservation.ca.gov/WellSearch>. Accessed October 1, 2018.

Based on recent traffic counts (ATE, 2019; Appendix C) approximately 200 average daily trips occur on Koenigstein Road. The oil wells and associated gas flare located at the project site are currently not in operation. Project site operations were suspended by Ventura County until the project's permitting process has been completed. Therefore, the existing oil production facility is not currently generating any vehicle traffic.

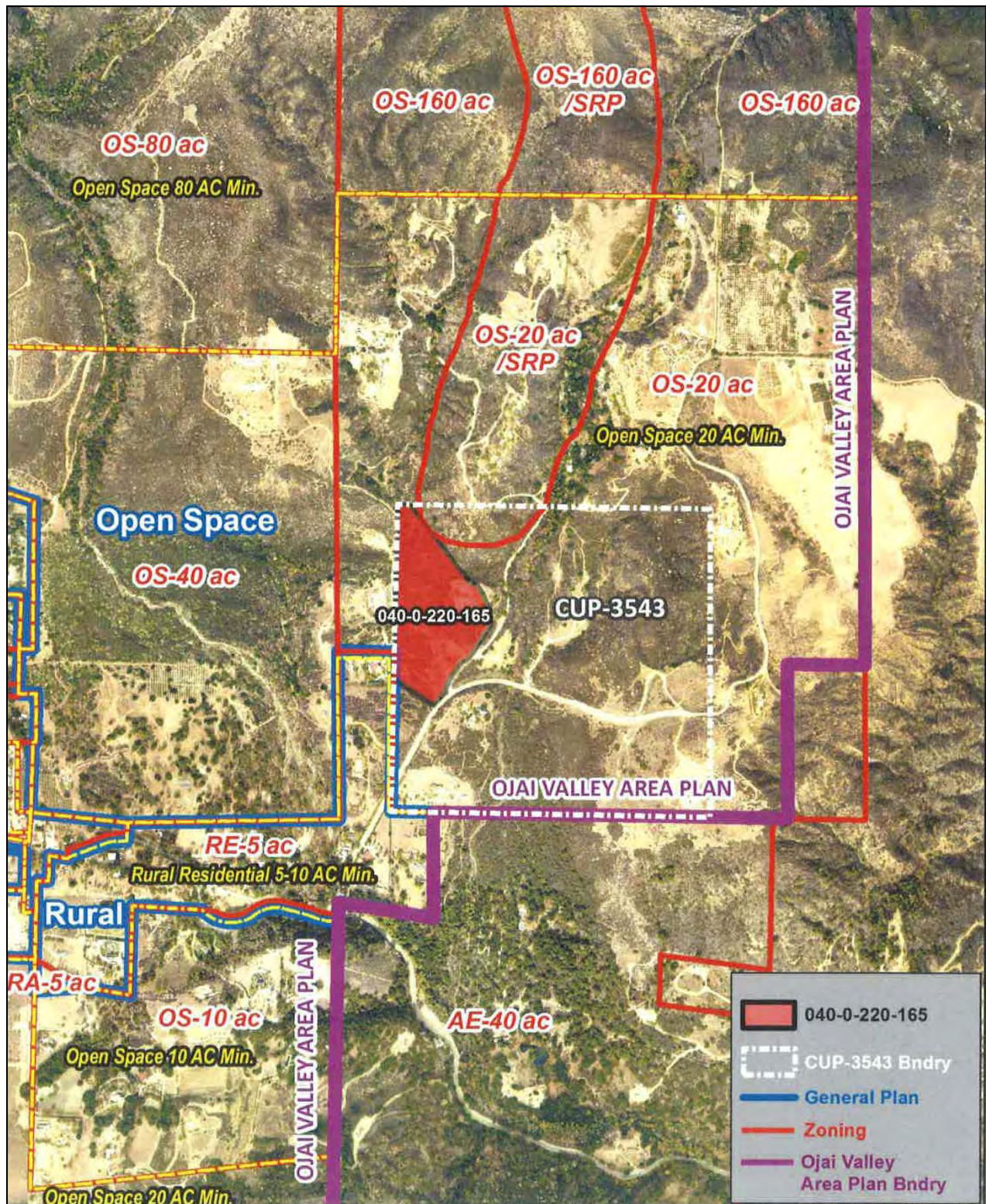
3.2 ZONING AND LAND USE DESIGNATIONS

The project site's Land Use designation is "Open Space." The site is zoned "OS-20" (Open Space, 20-acre minimum lot size). The land use and zoning designations of the project site and properties near the project site are depicted on Figure 3.2-1.

3.3 LAND USE PLANNING

The existing oil well operation located on the project site was authorized by the County's approval of CUP 3543. The CUP encompasses approximately 160 acres, including the proposed project site (APN 040-0-220-165) and the following additional Assessor's parcels: 040-0-220-175, 040-0-220-185, 040-0-220-195, 040-0-220-205, 040-0-220-245, 040-0-220-255, 040-0-220-265. The approximate boundaries of CUP 3543 are depicted on Figure 3.2-1.

The project site is located within the boundaries of the Ojai Valley Area Plan, which was adopted by the Board of Supervisors on July 18, 1995. The Ojai Valley Area Plan encompasses approximately 74,000 acres, and in general it identifies the distribution, location, types and intensity of land uses within the planning area. The Plan also provides policies related to development within the planning area.



One Inch = Approx. 1,600 ft.



Source: Ventura County RMA, 2016

County of Ventura

Carbon California Company LLC Agnew Lease Oil and Gas Project

Figure 3.2-1

Land Use and Zoning Designations

3.4 SURROUNDING LAND USES

Land uses near the project site consist predominately of open space with scattered residences and agricultural buildings that are located on large lots. The residence closest to the project site is located approximately 800 feet to the southwest. Additional active and plugged oil wells are also located near the proposed project site. The nearest oil wells are located approximately 700 and 900 feet to the west and southwest of the project site. Land uses adjacent to Koenigstein Road between State Route 150 and the project site also include of a mix of interspersed residences, agricultural buildings, and oil well operations. The land use characteristics of the area near the project site are depicted on Figure 3.3-1.

Sisar Creek is located approximately 1,800 feet west and 2,800 feet south of the project site. Sisar Creek originates in the Topatopa Mountains north of the project site, and the creek flows into Santa Paula Creek approximately two miles east of the project site. Sisar Creek is an ephemeral stream, meaning it has long periods with little or no flow, and short periods of flow in response to storm events. A smaller ephemeral stream in Bear Canyon is located approximately 300 feet east of the project site.

3.5 CUMULATIVE PROJECTS

The cumulative impacts analysis included in this RSEIR is based on a list of other projects that may generate impacts to which the proposed project may also incrementally contribute. The following is a list of County pending and approved projects within the vicinity of the proposed project site. Cumulative projects were identified using the Planning Division's Pending and Approved Project lists as of May, 2019, and contact with Planning Division staff.

Potential cumulative development projects located in the vicinity of the proposed project site are identified below:

1. **PL18-0103.** This is a request for a Parcel Map Waiver/Lot Line Adjustment for two legal lots located approximately 500 feet west of the proposed Agnew lease project site. This was approved by the Planning Director on May 28, 2019.
2. **PL17-0129.** This is a request for a Planned Development Permit Minor Modification to establish a home school/vocational training program to be located within an existing 5,000 square foot general store. This project is located adjacent to State Route 150, approximately 0.6 mile west of the Agnew lease project site. This project is pending a decision by the Planning Division.
3. **PL17-0112.** This is a request for a Conditional Use Permit to install a 50-foot tall stealth wireless communication facility. This project is located adjacent to State Route 150, approximately three miles west of the Agnew lease project site. This was approved by the Planning Director on August 7, 2019.

4. **PL15-0187.** This project (Bentley) is a permit modification to allow the continued use and maintenance of nine existing oil wells, and to allow full time flaring of all oil well produced natural gas due to the loss of access to a gas sales pipeline. This project was approved by the Board of Supervisors on January 15, 2019.
5. **PL15-0060.** This project (Nesbitt and Harth) allows the testing, drilling, production, reworking and maintenance (excluding hydraulic fracturing) of nine proposed oil and gas wells and two existing wells (a total of 11 wells) on the Harth drilling pad; the testing, production, reworking and maintenance of two oil production wells located on the Nesbitt Lease; and the operation of existing equipment on the Harth Lease associated with the storage, processing, and transporting of oil, gas, and water. . The new wells would be located on an existing well pad. This project is located approximately one mile east of the Agnew lease project site. Access to the Nesbitt project site is from State Route 150 and Koenigstein Road. This project was approved by the Board of Supervisors on November 15, 2016.



County of Ventura

Carbon California Company LLC Agnew Lease Oil and Gas Project

Figure 3.3-1
Project Area

4.0 ENVIRONMENTAL IMPACT ANALYSIS

This RSEIR evaluates the potential environmental effects of proposed changes to the existing Carbon California Company oil and gas facility that is currently authorized by CUP 3543. The RSEIR evaluates proposed changes to the previously approved project and changed circumstances under which the proposed project would be undertaken. The proposed project includes a request to drill two new oil wells to an existing well pad, to re-drill an existing oil well, to allow the use of Koenigstein Road by project-related trucks, and to allow the full-time use of an existing flare. Changed environmental conditions consist of the inability to use an access road by project-related trucks as required by CUP 3543 because the access road was destroyed by flooding in 1995.

Impacts that would result from the approval and implementation of the proposed project are classified in this RSEIR as follows:

- Class I:** A significant and unavoidable impact.
- Class II:** A potentially significant impact that can be reduced to a less than significant level by implementing feasible mitigation measures.
- Class III:** An adverse impact but less than significant impact. No mitigation is required.
- Class IV:** An environmentally beneficial impact.

4.1 AIR QUALITY

The analysis of the proposed project's air quality impacts is based on the results of two reports prepared by Sespe Consulting Inc. An evaluation of the project's air quality impacts is provided in a report titled *Air Quality Impact Assessment, Carbon California Company, Agnew Oilfield Lease*, January 2, 2019. After the January 2, 2019 report was prepared the project was revised by the project applicant to eliminate one of the proposed new oil wells, thereby reducing the number of proposed wells from three to two. An *Updated Air Quality Impact Assessment*, May 29, 2019, was prepared to evaluate the air quality impacts of the revised project. The January 2 and May 29, 2019 reports are attached to this RSEIR as Appendix B.

4.1.1 Background

Regional Air Quality Conditions. Air quality in Ventura County is directly related to emissions and regional topographic and meteorological factors. The California Air Resources Board (CARB) has divided the state into regional air basins according to topographic air drainage features. The Agnew lease project site is located in the South-Central Coast Air Basin, which encompasses the counties of Ventura, Santa Barbara and San Luis Obispo.

The U.S. Environmental Protection Agency (USEPA) and CARB classify air basins as attainment, unclassified, or nonattainment depending on whether the monitored ambient air quality data shows compliance, insufficient data available, or non-compliance with the ambient air quality standards, respectively. Ventura County has been designated by the CARB and USEPA as unclassified or in attainment of all criteria air pollutant standards with the exception of:

- Federal 2008 8-hour ozone standard: non-attainment, classified as “serious.”
- California 1-hour ozone standard: non-attainment.
- California particulate matter less than 10 microns (PM₁₀) standard: nonattainment.

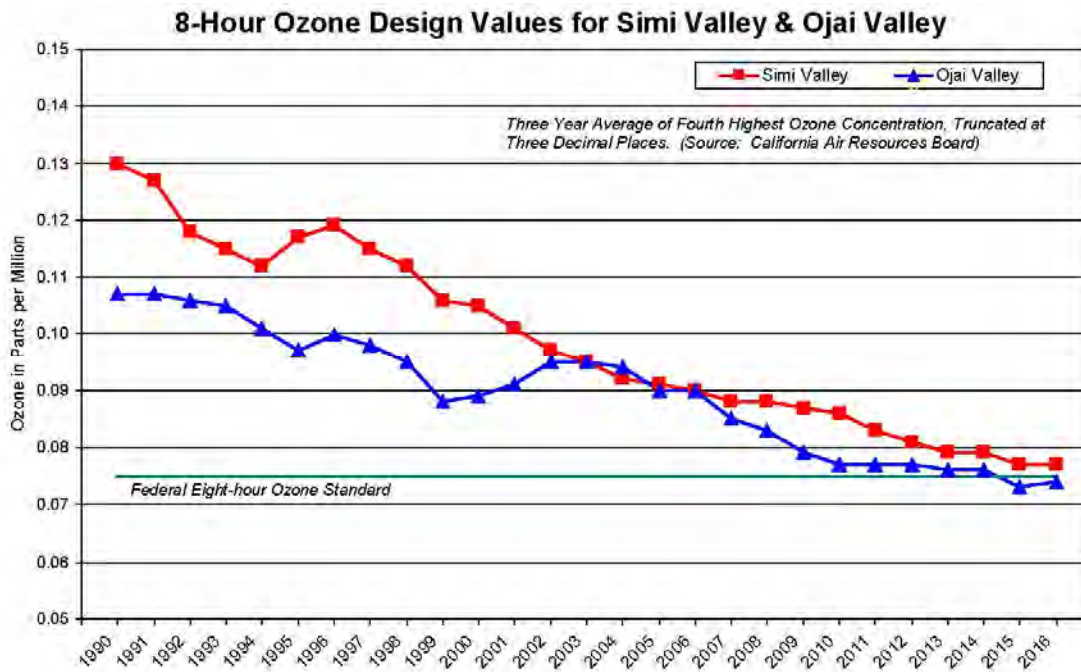
According to the air pollutant emissions inventory presented in the Ventura County Air Pollution Control District (VCAPCD)'s 2016 Air Quality Management Plan, mobile sources (on-road vehicles, trains, aircraft, marine vessels, farm equipment) account for about 45 percent of the reactive organic compound (ROC) emissions and 88 percent of the oxides of nitrogen (NO_x) emissions in the County.

Ventura County Air Quality Management Plan. The Ventura County Air Pollution Control Board adopted the 2016 Ventura County Air Quality Management Plan (AQMP) on February 14, 2017. The 2016 AQMP presents Ventura County's strategy to attain the 2008 federal 8-hour ozone standard by 2020, as required by the federal Clean Air Act Amendments of 1990 and applicable U.S. EPA clean air regulations. Building on previous Ventura County AQMPs, the 2016 AQMP presents a combined local and state clean air strategy based on concurrent reactive organic gases (ROG) and nitrogen oxides (NO_x) emission reductions to bring Ventura County into attainment of the 2008 federal 8-hour ozone standard. The 2016 AQMP is hereby incorporated by reference and is available at the following website:

<http://www.vcapcd.org/pubs/Planning/AQMP/2016/Final/Final-2016-Ventura-County-AQMP.pdf>

Ventura County continues to make progress towards meeting federal clean air standards for ozone by a steady decades-long decrease in countywide ozone levels. In 1990, Ventura County had 18 days over the now revoked federal 1-hour (0.12 ppm) ozone standard. However, by 2003 there were only two days over that standard, and none in 2004 and 2005. Consequently, on May 27, 2009, the EPA formally found that Ventura County had attained the federal 1-hour ozone standard by its applicable attainment date of November 15, 2005. Likewise, all areas of the county have experienced similar reductions in 8-hour ozone levels.

Chapter 1 of the 2016 AQMP includes a subsection entitled “Progress in Improving Ventura County Air Quality.” The subsection states that since 1990, all areas of the county have experienced reductions in ozone levels, and *“despite a population increase of 28 percent, there were 117 days countywide over the current federal 8-hour ozone standard of 0.75 ppm in 1990, but only four in 2015 and 2016.”* As shown in the graph presented below, in 2015 and 2016 ozone levels in the Ojai Valley area were below the Federal 8-hour ozone standard.



Source: 2016 AQMP

Project-Related Baseline Conditions. The operation of the oil and gas production facilities that have been developed at the project site is considered to be the baseline condition for air emission sources. There are currently three (3) oil wells at the project site. Emissions associated with oil production operations from the wells were estimated using historical oil, water, and gas production data from the Division of Oil, Gas, and Geothermal Resources (DOGGR) well finder

online data tool for Agnew Wells No. 1, 2, and 3. Existing on-site equipment that would continue to be used over the next 25 years includes:

- Three (3) oil wells (Agnew Wells No. 1, 2, and 3)
- One (1) 500 barrel crude oil storage tank
- One (1) 500-barrel wash tank
- Two (2) 250 barrel produced water tanks
- One (1) oil loading facility
- One (1) 0.8 MMBTU/hour Agnew Lease Flare.

Operation of the three existing oil wells on the project site results in the production of fluids (oil and water) that are transported from the project site by tanker truck. As depicted on Table 3.2-1 (Estimated Existing Large Truck Trips: 2015-2017), under baseline (2015) conditions the transportation of produced fluids from the project site required approximately 0.12 to 0.22 one-way truck trips per day depending on the size of the tanker truck used. The two proposed new oil wells would be served by the same truck that currently serves the three existing oil wells at the project site. Due to the low volume of fluid produced by the three existing oil wells at the project site, one truck (one trip in and one trip out) per day to remove produced fluids from the site is typically adequate. The same truck that serves the proposed project site would also serve other oil wells located along Koenigstein Road that are operated by the project applicant. For analysis purposes it was assumed that the transport of fluids produced by the proposed project would result in a maximum of 8 tanker truck loads (16 one-way trips) per week, which is the maximum number of truck trips that are requested by the project. In addition, baseline employee vehicle trips to operate the existing on-site wells were assumed at two visits per day (4 trips/day, 28 trips per week). Estimates of project-related air emissions are provided in Section 4.1.3.

Analysis Methodology

Assessment Guidelines. The Air Quality Impact Assessment (Appendix B) prepared for the proposed project follows methodologies and guidance presented in the Ventura County Air Pollution Control District's (VCAPCD) October 2003 *Ventura County Air Quality Assessment Guidelines*. These Guidelines provide a framework and uniform methods for preparing air quality evaluations for environmental documents and recommend specific criteria and threshold levels for determining whether a proposed project may have a significant adverse air quality impact. The County's General Plan also requires that the VCAPCD Guidelines be used when evaluating the air quality impacts of discretionary projects. Section 1.2.2, Policy 2 of the Resources Chapter of the General Plan states "*The air quality impact of discretionary development shall be evaluated by use of the Guidelines for the Preparation of Air Quality Impact Analysis.*"

There are various principles within the VCAPCD Guidelines that are important to the evaluation of the proposed project:

- a. The Guidelines are not applicable to equipment or operations required to have Ventura County APCD permits (Authority to Construct or Permit to Operate). APCD permits*

- are generally required for stationary and portable (non-vehicular) equipment or operations that may emit air pollutants. This permit system is separate from CEQA and involves reviewing equipment design, followed by inspections, to ensure that the equipment will be built and operated in compliance with APCD regulations. (Guidelines page 1-1)*
- b. The emissions from equipment or operations requiring APCD permits are not counted towards the air quality significance thresholds. This is for two reasons. First, such equipment or processes are subject to the District's New Source Review permit system, which is designed to produce a net air quality improvement. Second, facilities are required to mitigate emissions from equipment or processes subject to APCD permit by using emission offsets and by installing Best Available Control Technology (BACT) on the process or equipment. (Guidelines page 1-2)*
- c. Construction-related emissions (including portable engines and portable engine-driven equipment subject to the ARB's Statewide Portable Equipment Registration Program, and used for construction operations or repair and maintenance activities) of ROC and NOx are not counted towards the two significance thresholds, since these emissions are temporary. However, construction-related emissions should be mitigated if estimates of ROC and NOx emissions from the heavy-duty construction equipment anticipated to be used for a particular project exceed the 5 pounds per day threshold in the Ojai Planning Area, or the 25 pounds per day threshold in the remainder of the county. (Guidelines page 5-3)*

In regard to item "b" above, the District's New Source Review (NSR) is a permitting program required by the Clean Air Act Amendments of 1990 to help ensure that new or modified equipment and facilities (e.g., boilers, turbines, crude oil storage tanks, power plants, and factories) do not significantly degrade air quality or slow progress towards meeting air quality objectives. NSR permits are legally binding documents that specify what can be constructed, what emission limits must be met, and how emission sources must be operated. The primary components of NSR are BACT and emission offsets.

A Permit to Operate has been issued by the VCAPCD for the existing Agnew lease project, and that Permit addresses the existing wells, tanks, flaring equipment and local pipelines that have been installed at the project site. The Permit also addresses the other oil and gas facilities located in the project area operated by the project applicant (Carbon California). A copy of the most recent Permit to Operate for the existing Agnew lease project is included in RSEIR Appendix D. The Permit to Operate identifies all permitted equipment, applicable VCAPCD Rules the project must comply with, and identifies required BACT measures. The Permit to Operate specifies that reactive organic emissions from all equipment included in the Permit is limited to 86.16 tons/year, and that nitrogen oxides emissions from all equipment is limited to 21.03 tons per year. These emissions are maximum permitted emissions from stationary sources and not estimates of actual emissions. The total emissions included in the Permit to Operate do not specify permitted stationary source

emission associated with the existing oil production operations conducted at the proposed project site (the Agnew Lease). Based on the estimated baseline emissions shown on Table 4.1-5 below, existing emissions from stationary sources located at the project site are approximately 6.23 pounds per day of reactive organic compounds and approximately 0.07 pounds per day of nitrogen oxides. The existing emissions from the project site are a small component of the total emissions permitted by the existing Permit to Operate. An Authority to Construct and revised Permit to Operate would be required if the proposed project were to be approved and implemented. The revised Permit would include the additional project-related equipment that is subject to VCAPCD permitting requirements (i.e., the new oil wells). As indicated above, the Permit to Operate for the Agnew Lease and the larger Ojai Fee Leases (the other oil facilities in the project area operated by Carbon California) identifies the VCAPCD rules and CARB regulations applicable to the proposed project. The applicable rules include, but are not limited to, the following:

- Rule 10- Permits Required
- Rule 26- New Source Review (BACT and emission offsets)
- Rule 29- Conditions on Permits
- Rule 50- Opacity
- Rule 51- Nuisance
- Rule 54- Sulfur Compounds
- Rule 55- Fugitive Dust
- Rule 64- Sulfur Content of Fuels
- Rule 71- Crude Oil and Reactive Organic Compound Liquids
- Rule 71.1- Crude Oil Production and Separation
- Rule 71.3- Transfer of Reactive Organic Compound Liquids
- Rule 71.4- Petroleum Sumps, Pits, Ponds, and Well Cellars
- Rule 74.10- Components at Crude Oil and Natural Gas Production and Processing Facilities
- Rule 74.16- Oilfield Drilling Operations
- CARB Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities- *(Note, this regulation has vapor recovery requirements similar to Rule 71.1 and leak detection and repair requirements similar to Rule 74.10. This regulation is enforced via the VCAPCD permitting system but does not result in any new permitting requirements. Oilfield permit holders are required to register the subject equipment with CARB on an initial and annual basis as specified in Appendix A – Table A6 of the Regulation.)*

FLARES

- VCAPCD Rule 71.1 requires that the emissions of produced gas be controlled at all times using a properly maintained and operated system that directs all produced gas,

except gas used in a tank battery vapor recovery system, to one of the following 1) A fuel or sales gas system 2) A flare that combusts reactive organic compounds or 3) A device with an ROC destruction or removal efficiency of at least 90 percent by weight (Rule 71.1.C.1). VCAPCD Rule 71.1 therefore prohibits the uncontrolled “venting” of produced gas to the atmosphere.

Flares have been a proven technology for many years and are very efficient at combusting and destructing oilfield gases as noted below in EPA AP-42 13.5-2 dated February 2018:

“Combustion efficiency is the percentage of hydrocarbon in the flare vent gas that is completely converted to CO₂ and water vapor. Destruction efficiency is the percentage of a specific pollutant in the flare vent gas that is converted to a different compound (such as CO₂, CO or other hydrocarbon intermediate). The destruction efficiency of a flare will always be greater than the combustion efficiency of a flare. It is generally estimated that a combustion efficiency of 96.5 percent is equivalent to a destruction efficiency of 98 percent. Properly operated flares achieve at least 98 percent destruction efficiency in the flare plume, meaning that hydrocarbon emissions amount to less than 2 percent of the hydrocarbons in the gas stream.”

It is important to note that the VCAPCD has required “electric oil fields” for many years. Therefore, smaller oil fields in the County with electric-powered pumping units, and without a gas sales pipeline, may not have a “fuel gas system” described in Rule 71.1. Therefore, most oil fields in the County will use the flare compliance option of Rule 71.1.

The “electric oilfield” concept is a very important ozone/NO_x-reduction strategy in Ventura County. For example, according to Table 13-5.1 of EPA AP-42 (February 2018) the NO_x emission factor for an industrial flare is 0.068 pounds NO_x per million BTU (lb./MMBTU). As a comparison, according to EPA AP-42 Tables 3.2-2 and 3.2-3, NO_x emissions from an uncontrolled natural gas-fired rod pump engine (that is less than 50 BHP and exempt from Rule 74.9) range from 0.847 to 4.08 lbs. NO_x/MMBTU. Therefore, the NO_x emissions from an exempt rod pump engine are 12.5 to 60 times the NO_x emissions from a flare showing that the electric oilfield concept greatly reduces NO_x emission in Ventura County.

An oil and gas air permit contains conditions which require monthly recordkeeping of the amount of gas flared and to differentiate if the gas flared was for emergency or planned events. Inspectors make sure the leases are in compliance with the flare recordkeeping requirements during their compliance inspections. In addition to monthly flare combustion records, the permits require the operator to inspect the flare’s

ignition system monthly, be equipped with a totalizing gas meter, be equipped with a continuous pilot or pilotless electronic ignition system, and annual source testing of the H₂S content of the flare gas prior to combustion to ensure compliance with Rule 54 “Sulfur Compounds”.

WELLS

- Oil wells are subject to the leak and repair requirements of VCAPCD Rule 74.10. This includes operating requirements, operator inspection requirements, Operator Management Plan requirements, and Operator Repair requirements.

TANKS

- Tanks are subject to the vapor recovery requirements of Rule 71.1 and certain components are subject to the leak requirements of Rule 74.10.

Based on the requirements described above, Table 4.1-1 compares the applicability of the proposed project’s emission sources to the air quality impact assessment requirements VCAPCD’s Air Quality Assessment Guidelines. Based on the VCAPCD Guidelines, only the impact from additional truck trips generated from hauling increased produced fluids (oil and water) are to be counted towards the air quality significance thresholds described in Section 4.1.2. However, the air quality impact analysis presented in Section 4.1.3 below also evaluates impacts from the proposed drilling of two proposed wells, plus emissions from all production, storage, flaring and transport associated with the two proposed wells even though the majority of project-related emissions would fall under VCAPCD’s permitting authority and would not be subject to the adopted significance thresholds.

In its review of the 2016 FSEIR prepared for the Agnew Lease project, the Court ordered that this RSEIR’s analysis of project-related air quality impacts compare all project-related emissions of NO_x and ROC (ozone precursors) to the five pounds per day thresholds of significance adopted for the Ojai Valley by Policy 1.1.2-1 of the Ojai Valley Area Plan. The threshold requirements of the Ojai Area Plan policy have also been incorporated into the County of Ventura Initial Study Assessment Guidelines (April 26, 2011) and the Ventura County Air Pollution Control District Air Quality Assessment Guidelines (November 2003). The requirement to compare all project-related NO_x and ROC emissions to the Ojai Valley Area Plan significance thresholds exceeds the analysis methodology requirements specified by the VCAPCD’s Air Quality Assessment Guidelines and Section 1.2.2, Policy 2 of the Resources Chapter of the Ventura County General Plan. The VCAPCD Guidelines require that only unpermitted emissions (mobile sources) be compared to the adopted significance thresholds, and the General Plan Resources Chapter requires that CEQA evaluations of air quality impacts be conducted using the analysis methodology included in the VCAPCD Guidelines. However, in compliance with the Court’s analysis requirements, Table 4.1-1 also identifies the additional project-related emission sources that have been compared to the air quality thresholds adopted for the Ojai Valley. The impact analysis in Section 4.1.3 compares the significance of project-related emissions based on

the analysis methodology included in the VCAPCD's Air Quality Assessment Guidelines (mobile emission only), and the requirements specified by the Court (all project-related emissions).

**Table 4.1-1
Emissions Sources vs CEQA Significance Thresholds**

Emission Source	Emission Type	Requires VCAPCD Permit?	Do VCAPCD and County CEQA Significance Thresholds Apply?	Does the Ojai Valley Area Plan Threshold Apply	Does the Court's Significance Threshold for this Project Apply?
Continued flaring of produced gas from 3 existing wells, including authorization required for the full time use of the existing flare	long-term	Yes	No	No Existing flare emissions are part of baseline conditions	No Existing flare emissions are part of baseline conditions
Operation of 2 new wells including flaring of produced gas and additional 2 lbs/day of ROC emissions per well	long-term	Yes	No	Yes	Yes
Vehicle travel for the offsite transport of oil and wastewater (additional trips for new well oil production)	long-term	No	Yes	Yes	Yes
Drilling 2 new wells	short-term construction	No	No	No Ozone precursor emissions from temporary mobile construction equipment use are not counted against the adopted air quality significance thresholds (VCAPCD CEQA Guidelines, page 7-5)	No Ozone precursor emissions from temporary mobile construction equipment use are not counted against the adopted air quality significance thresholds (VCAPCD CEQA Guidelines, page 7-5)
Re-drilling 1 well	short-term construction	No	No		
Vehicle travel for the transport of drilling equipment	short-term construction	No	No		
Vehicle travel for the transport of additional driller employees	short-term construction	No	No		

Proposed Project Impact Assessment Scenarios and Assumptions. The following air emission impact scenarios and assumptions were used to evaluate the proposed project's air quality impacts.

Construction Phase. The activities required to drill the two proposed oil wells and re-drill one existing well were considered in calculating construction phase emissions for the project. These activities include:

- Transportation of a diesel-powered drill rig and support equipment to and from site.
- Drilling of new oil wells. It was assumed it would take 10 days to drill each new well.

- The analysis assumed that during drilling, two 12-hour shifts with 10 employees each shift would drive light duty gasoline powered trucks (pickups) to and from the project site during the 10 days of drilling. A total of 40 trips per day, or 400 trips per each well drilled.

For health risk impact assessment purposes it was assumed that one well per year would be drilled over four consecutive years (i.e., 3 new wells, one re-drill). The analysis assumption that the project would result in drilling three new wells was made before the project applicant revised the project to eliminate one of the previously proposed wells (i.e., the project now proposes to drill and operate two new wells and to re-drill one well). By assuming that three new wells would be drilled and operated, the health risk assessment provides a conservative (over-estimation) of potential project-related health impacts. In addition, by evaluating the entire project's construction emissions over a four year period, rather than a 10-15 year project implementation period as was described in RSEIR Section 2.3 (Project Characteristics), the evaluation of the project's potential health risks have again been conservatively evaluated (i.e., the results of the health risk analysis over-estimate the project-related impacts).

Other assumptions used in the construction phase emissions analysis included:

- Kenai Rig 4, or a similar rig, would be used to drill the wells. A total of 16 heavy heavy-duty trucks, eight trucks per day for two days would be required to bring the rig on-site during daylight hours (1 truck per hour). The same assumption would apply to taking the rig away.
- Kenai Rig 4 on average uses 400 gal/day of diesel fuel. To yield the most impactful analysis it was assumed this fuel was burned in the highest emitting engine for each pollutant emitted.

Operation Phase. Proposed project operation criteria and toxic air contaminant (TAC) emissions associated with the project were calculated for the three previously proposed new wells and associated activities/equipment. When applied to the current proposal for two new wells, the criteria and TAC emissions include:

- The additional four pounds/day in ROC emissions from the two proposed oil wells. The proposed oil well emissions rate of two pounds per day for each well is a standard emission rate used by the VCAPCD and is described in the APCD's PEETS Emission Factors List (Appendix E).
- Emissions from full time gas flaring associated with the two proposed wells.
- Emissions from processing and storage of crude oil for new wells using the existing on-site equipment.

- Emissions from transport of oil and water from the new and existing wells. This analysis assumes all emissions related to offsite hauling of fluids is project related. The project includes a maximum of eight tanker truck loads (16 one-way trips) per week for fluids transport, occurring during daylight hours Monday through Friday, between 7:30 am and 6:30 pm.

Existing and Proposed Project Analysis. This scenario included emissions and associated health risk impacts from all sources including existing and proposed project VCAPCD permitted sources, temporary construction, transportation, etc.

Health Risk Evaluation. The evaluation of potential project-related health risk impacts includes emissions from all vehicle travel for the off-site transport of oil and wastewater produced at the project site. All vehicle travel is conservatively evaluated instead of only evaluating the incremental increase in vehicle travel due to increased production from the two proposed oil wells for the following reasons:

- The CUP 3543 prohibits the use of Koenigstein Road by heavy trucks for project-related operations.
- Evaluating impacts from all vehicle travel for the off-site transport of oil and wastewater would evaluate potential impacts resulting from existing plus proposed project conditions.

Comparison to CEQA Significance Thresholds: Analysis per the Court's Analysis Requirements. This scenario includes emissions from all project-related vehicle travel for the off-site transport of oil and wastewater, flare emissions from the operation of two new wells, tank and loading facility emissions resulting from the operation of two additional wells, and emissions from the operation of two new oil wells.

Comparison to CEQA Significance Thresholds: Temporary Construction Emissions. Although temporary construction-related emissions are not counted towards the VCAPCD's CEQA significance thresholds, this RSEIR compares these emissions to the adopted significance thresholds to determine if construction emission reduction measures should be identified to minimize construction-related emissions.

4.1.2 Thresholds of Significance

Air Emissions. Table 4.1-2 presents the criteria pollutant impact significance thresholds from the VCAPCD Guidelines and the Ventura County Initial Study Assessment Guidelines. The Ventura County Air Pollution Control Board has determined that exceedances of these thresholds will individually and cumulatively jeopardize attainment of the federal one-hour ozone standard, and thus have a significant adverse impact on air quality in Ventura County. As the proposed project is located in the Ojai Planning Area, significance thresholds for that area were used.

Table 4.1-2
Ojai Planning Area Criteria Pollutant Significance Thresholds

ROC (lbs/day)	NO_x (lbs/day)
5	5

The VCAPCD Guidelines only include numeric thresholds for the ozone precursors oxides of nitrogen (NO_x) and reactive organic compounds (ROC). According to the VCAPCD Guidelines, these thresholds are only applied to unpermitted sources of emissions. Emissions from equipment requiring VCAPCD permits, specifically stationary equipment, are not counted towards these air quality significance thresholds. Significance thresholds are meant to be applied to the impacts associated with the proposed project only. However, emissions from stationary sources have been quantified for informational purposes and for comparison to the Court order that this RSEIR's analyses of project-related air quality impacts compare all project-related emissions of NO_x and ROC to the five pounds per day thresholds of significance adopted for the Ojai Valley.

Health Risk. Impacts from toxic air contaminant (TAC) emissions are estimated by conducting a health risk assessment (HRA). Table 4.1-3 presents the significance thresholds for health risk impacts, which are from the VCAPCD Guidelines.

Table 4.1-3
Health Risk Significance Thresholds

Source	Cancer Risk	Chronic Risk	Acute Risk
All Project Sources	10 cases in a million	1.0 hazard index	1.0 hazard index

Other Requirements. In addition to the criteria pollutant and TAC quantitative thresholds presented above, the VCAPCD Guidelines also require that the project's consistency with the Ventura County Air Quality Management Plan (AQMP) be evaluated. A project is consistent with the AQMP if it does not cause population growth beyond the population forecasts in the most recent AQMP.

4.1.3 Impact Analysis

Construction Phase Emissions

Estimated construction phase emissions that would result from proposed drilling operations are presented in this section. Construction emission calculations and additional detail regarding the calculation methodologies and assumptions are provided in the air quality impact assessment prepared for the proposed project (Appendix B). Table 4.1-4 presents the project-related

construction emissions on a pounds per day basis and compares them to the Ojai Planning Area thresholds of significance.

As described in the VCAPCD Guidelines and Ojai Valley Area Plan Policy 1.1.2-1, ozone precursor emissions from mobile construction equipment are not counted against the adopted air quality significance thresholds (VCAPCD CEQA Guidelines, page 7-5). However, an effort should be made to reduce construction emissions if the emissions exceed the significance thresholds presented in Table 4.1-2. As shown on Table 4.1-4, short-term construction NO_x (ozone precursor) emissions would exceed the five (5) lbs/day Ojai Planning Area criteria pollutant significance threshold. Although construction activities for the project would be relatively short in duration (i.e., two weeks per year over a period of approximately four years) and not a significant impact (Class III), it is recommended that the project implement ozone precursor reduction measures as suggested by the VCAPCD.

**Table 4.1-4
Maximum Day Construction Phase (Short-Term) Emissions**

PHASE¹	ROC (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	SO_x (lbs/day)
Drilling	3.7897	112.4274	22.7381	2.1475	1.6093	0.1016
Vehicle Travel for the Transport of Additional Driller Employees	0.0000	0.0002	0.0020	0.0000	0.0000	0.0000
Total	3.7897	112.4276³	22.7402	2.1475	1.6093	0.1016
Significance Threshold ²	5	5	--	--	--	--
Emission Reduction Measures Recommended?	No	Yes	--	--	--	--

Source: Sespe Consulting, Inc., January, 2019

1 – Rig transport and drilling do not occur on the same day so emissions from vehicle travel for transport of drilling equipment is not included in the maximum day calculation. Max day emissions were during drilling days.

2 – Significance thresholds are from Ojai Valley Area Plan Policy 1.1.2-1 and Section 3.3.1a, Ojai Planning Area ROC and NO_x Criteria Pollutants, from the Ventura County Air Quality Assessment Guidelines.

3 - Ozone precursor emissions from mobile construction equipment are not counted against the air quality significance thresholds included in the Ojai Area Plan. Therefore, this is not a significant impact.

Operation Phase Emissions

Estimated project-related operation phase emissions that would result from proposed project are presented in this section. The significance of the emission impacts is determined by comparison to the criteria pollutant significance threshold presented in Section 4.1.2. Additional detail regarding the calculation methodologies and assumptions are provided in the air quality impact assessment prepared for the proposed project (Appendix B).

The results of the following emission evaluations are presented on the referenced tables:

- Table 4.1-5 presents the total baseline emissions and project-related criteria pollutant

emissions that would result if the proposed project were to be implemented and operated.

- Table 4.1-6 presents estimates of project-related emissions from all project-related emission sources. As depicted in Table 4.1-1 and described in Section 4.1.1: Analysis Methodology, all project-related emissions are compared to the adopted air quality CEQA significance thresholds described in Section 4.1.2. This impact assessment methodology is consistent with the requirements of the Court after its review of the 2016 SEIR prepared for the project.

**Table 4.1-5
Baseline and Project-Related Criteria Pollutant Emissions (lbs/day)**

EMISSION SOURCE	ROC (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	PM₁₀ (lbs/day)	SO_x (lbs/day)
Project-Related Emissions					
Full time Flare	0.3460	0.4845	2.5609	0.0692	0.4845
Tanks	0.1896	--	--	--	--
Loading Facilities	0.0221	--	--	--	--
Oil Wells ¹	4.0000	--	--	--	--
Vehicle Miles (transport oil and wastewater)	0.0002	0.0083	0.0008	0.0000	0.0000
Project Total	4.5579	0.4928	2.5617	0.0692	0.4845
Baseline Emissions					
Emergency Flare	0.0425	0.0595	0.3144	0.0085	0.0595
Tanks	0.1826	--	--	--	--
Loading Facilities	0.0101	--	--	--	--
Oil Wells	6.0000	--	--	--	--
Vehicle Miles (transport oil and wastewater)	0.0004	0.0138	0.0014	0.0001	0.0000
Employee vehicle trips to operate wells	0.0000	0.0000	0.0002	0.0000	0.0000
Baseline Total	6.2355	0.0733	0.3160	0.0086	0.0595

Source: Sespe Consulting Inc, January, 2019 and May, 2019

1 – Includes 2 lbs/day ROC emissions for each new well

Table 4.1-6
Court-Ordered Air Quality Impact Assessment Methodology
Project-Related Criteria Pollutant Emissions vs Thresholds (lbs/day)

EMISSION SOURCE	ROC (lbs/day)	NOx (lbs/day)	CO (lbs/day)	PM10 (lbs/day)	SOx (lbs/day)
Project-Related Emissions					
Flare	0.3460	0.4845	2.5609	0.0692	0.4845
Tanks	0.1896	--	--	--	--
Loading Facilities	0.0221	--	--	--	--
Oil Wells ¹	4.0000	--	--	--	--
Vehicle Miles (transport oil and wastewater) ²	0.0002	0.0083	0.0008	0.0000	0.0000
Project Total	4.5579	0.4928	2.5617	0.0692	0.4845
Significance Threshold ³	5	5	--	--	--
Significant?	No	No	--	--	--

Source: Sespe Consulting Inc., May, 2019

1 – Includes 2 lbs/day ROC emissions for each new well

2 – Assumes 8 trucks per week (16 trips per week)

3 – Significance thresholds from Section 3.3.1a, Ojai Planning Area ROC and NOx Criteria Pollutants, from the Ventura County Air Quality Assessment Guidelines.

As depicted on Table 4.1-6, using the impact assessment methodology specified by the Court after review of the 2016 SEIR prepared for the project, all project-related ozone precursor emissions are compared to the VCAPCD's and the County's adopted air quality significance thresholds. As shown, project-related emissions would not exceed the significance thresholds of five (5) lbs/day that have been adopted for the Ojai Valley. Therefore, the proposed project would not result in a significant air quality impact (Class III) and no mitigation measures are required.

Toxic Air Emissions and Health Risk Impacts

Toxic air contaminants (TACs) are pollutants that cause a health risk impact to exposed populations. Additional detail regarding TAC emissions from project sources are provided in the air quality impact assessment prepared for the project (Appendix B).

Air dispersion modeling is conducted to determine offsite concentrations of TAC emissions. For this Project, dispersion modeling was conducted using the Lakes AERMOD View implementation of the industry standard AERMOD dispersion model. After determining offsite TAC concentrations, health risk impacts were calculated using California Air Resources Board's (CARB) Hotspots Analysis and Reporting Program 2 (HARP 2). Residential cancer, chronic, and acute risk levels were calculated based on 30-year exposure (per HRA protocols) and the "OEHA Derived Method" intake rate percentile; worker risk levels were calculated based on 25-year exposure and the "OEHHA Derived Method" intake rate percentile; and cancer burden was calculated based on a 70 -year exposure, using the "OEHHA Derived Method" intake rate

percentile. Additional information regarding the dispersion modeling parameters used is provided in Appendix B.

The following scenarios were modeled when evaluating impacts for health risk:

Analysis per VCAPCD's Guidelines: This scenario includes emissions and associated health risk impacts from all vehicle travel for the offsite transport of oil and wastewater, including:

- Fugitive dust emissions from on-site and local off-site truck travel, and,
- Diesel particulate matter from on-road truck engines during onsite travel and local off-site travel.

Existing + Proposed Project Analysis. This scenario includes emissions and associated health risk impacts from all emission sources, including:

- Existing and Project proposed VCAPCD permitted sources such as:
 - combustion products from oil well flaring, and
 - fugitive volatile emissions from wells, piping, flanges, tanks, and loading racks.
- Temporary construction emissions from diesel engines associated with well drilling.
- Transportation emissions associated with both existing Project processes and temporary construction processes, including:
 - fugitive dust emissions from on-site and local off-site truck travel, and,
 - diesel particulate matter from on-road truck engines during onsite travel and local off-site travel.

The Existing + Proposed Project Analysis is broken into two (2) periods. The first period modeled emissions for years 1 – 4, of the project, and assumes one new well would be drilled per year. As described in the “Analysis Methodology” subsection of Section 4.1.1 (Background) above, the health risk assessment prepared for the project assumed all proposed oil wells would be drilled over a four year period. By evaluating the entire project’s construction emissions over a four year period, rather than a 10-15 year project implementation period as was described in RSEIR Section 2.3 (Project Characteristics), the evaluation of the project’s potential health risks have been conservatively evaluated (i.e., the results of the health risk analysis over-estimate the project-related impacts). The second period modeled emissions for years 5 – 30 of the project, and does not contain construction-related emissions sources. Construction based emissions were calculated using information from Kenai drilling, assumed Kenai Rig 4 was utilized, and that the rig used 400

gallons of diesel fuel per day. For more information regarding the quantification of emissions, please refer to RSEIR Appendix B.

A total of 200 grid receptors, 77 fence-line receptors, and 13 discreet residential receptors were modeled. Modeled Receptors and sources are illustrated on Figures 4.1-1 and 4.1-2 respectively. Health risk results at local residential receptors, and at the Acute Hazard Point of Maximum Impact (PMI) are presented in Table 4.1-7 and Table 4.1-8 for the VCAPCD based Analysis and the Existing + Proposed Project Analysis, respectively.

To evaluate cancer burden, a 70-year cancer risk model was run and the geographical bounds of the 1 in one million cancer risk isopleth was determined. Based on modeling results, the isopleth was conservatively represented as a circle with a radius of 1 km, and the census receptor module of HARP2 was utilized to determine that the population within the bounds of the circle was 208. The cancer MEIR for the 70-year run demonstrated a risk level of 0.00000523, which was multiplied by the population of 208, resulting in a cancer burden result of 0.0011, well below the ARB Health Risk Assessment Guidelines threshold of 1.0. Therefore, the project would result in a less than significant (Class III) health risk impact.

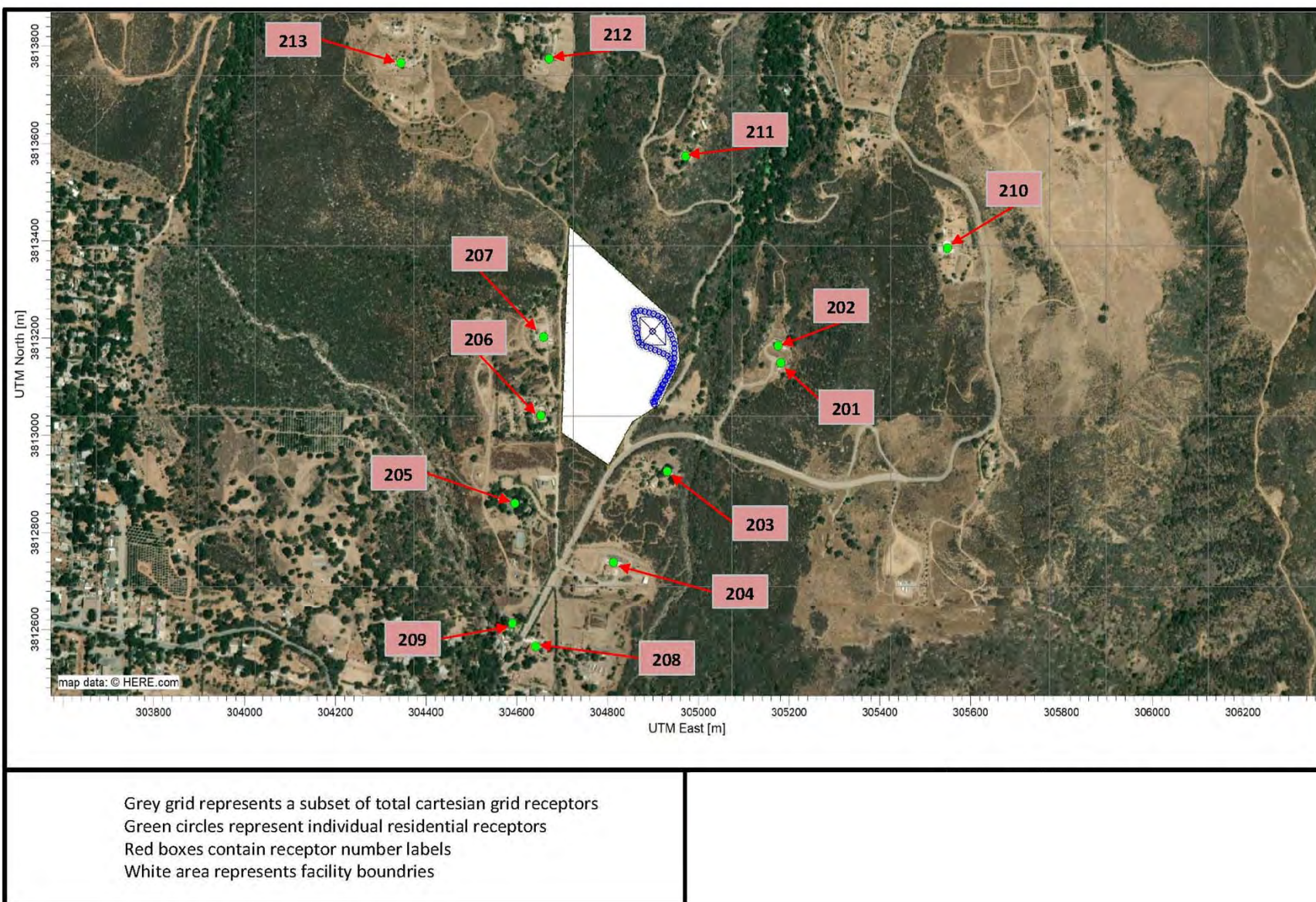
Worker health risk was also evaluated. In order to conservatively represent possible worker receptor locations, residential receptors were assumed to be possible locations for work to take place and were incorporated into the worker risk model, which also determined the facility posed less than significant health risk (Class III).

Table 4.1-7
Risk per VCAPCD Guidelines Analysis

Receptor ID	Receptor Type	UTM Location (m East)	UTM Location (m North)	Cancer Cases per Million Exposed	Chronic Hazard Index	Acute Hazard Index
201	Residential	305181	3813150	0.014	0.0010	0.000018
202	Residential	305175	3813184	0.011	0.00081	0.000011
203	Residential	304931	3812926	0.015	0.0011	0.000074
204	Residential	304812	3812740	0.006	0.00045	0.000035
205	Residential	304596	3812860	0.011	0.00083	0.000028
206	Residential	304653	3813041	0.019	0.0014	0.000030
207	Residential	304658	3813202	0.010	0.00076	0.000032
208	Residential	304641	3812566	0.0039	0.00028	0.000021
209	Residential	304590	3812613	0.0047	0.00034	0.000021
210	Residential	305548	3813385	0.00049	0.000036	0.0000016
211	Residential	304971	3813575	0.00032	0.000023	0.0000037
212	Residential	304670	3813774	0.00021	0.000015	0.0000034
213	Residential	304345	3813766	0.000077	0.0000056	0.0000026
224	Off-Site PMI	304899	3813053	N/A	N/A	0.00017
Sig. Threshold	N/A	N/A	N/A	10	1	1
Significant?	N/A	N/A	N/A	No	No	No

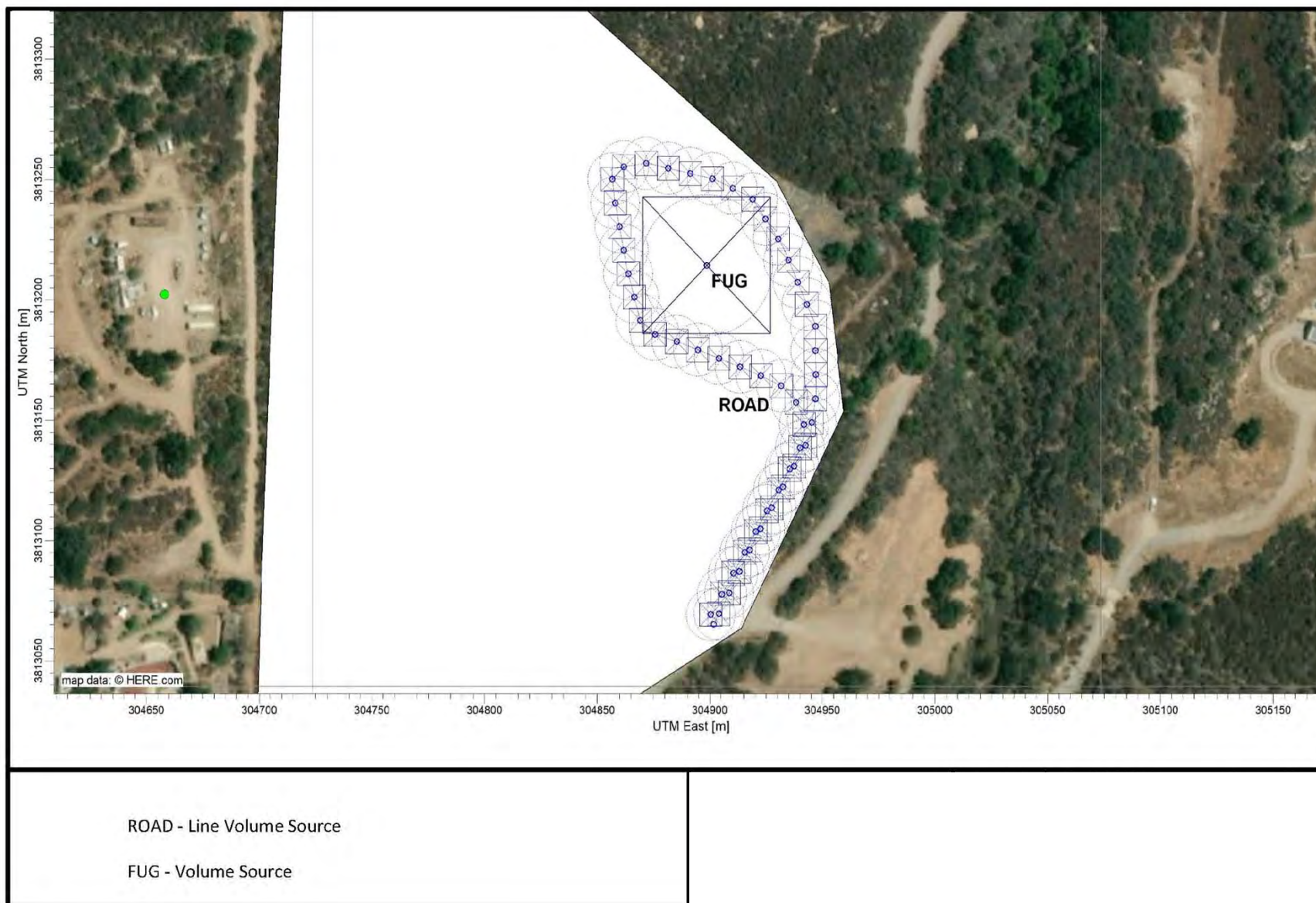
MEIR: Maximum Exposed Individual Receptor

This Page Intentionally Left Blank



Source: Sespe Consulting, Inc. (2019)

This Page Intentionally Left Blank



Source: Sespe Consulting, Inc. (2019)

County of Ventura

Carbon California Company LLC Agnew Lease Oil and Gas Project

Figure 4.1-2

Health Risk Assessment Source Map

This Page Intentionally Left Blank

**Table 4.1-8
Risk per Existing + Proposed Project Analysis**

Receptor ID	Receptor Type	UTM Location (m East)	UTM Location (m North)	Cancer Cases per Million Exposed	Chronic Hazard Index	Acute Hazard Index
201	Residential	305181	3813150	4.7	0.021	0.014
202	Residential	305175	3813184	4.1	0.017	0.0083
203	Residential	304931	3812926	2.2	0.020	0.0099
204	Residential	304812	3812740	1.1	0.0085	0.0068
205	Residential	304596	3812860	2.4	0.016	0.0071
206	Residential	304653	3813041	4.9	0.027	0.0087
207	Residential	304658	3813202	2.7	0.015	0.010
208	Residential	304641	3812566	0.8	0.0055	0.0050
209	Residential	304590	3812613	1.0	0.0066	0.0050
210	Residential	305548	3813385	0.15	0.00074	0.00057
211	Residential	304971	3813575	0.10	0.00048	0.0013
212	Residential	304670	3813774	0.06	0.00030	0.00090
213	Residential	304345	3813766	0.02	0.00011	0.00053
275	Off-Site PMI	304873	3813298	N/A	N/A	0.038
Sig. Threshold	N/A	N/A	N/A	10	1	1
Significant?	N/A	N/A	N/A	No	No	No

MEIR: Maximum Exposed Individual Receptor

Consistency with the Ventura County Air Quality Management Plan

To demonstrate consistency with the AQMP, a project must demonstrate consistency with the population forecasts contained therein. Due to its industrial nature, relatively low expected oil production rates, and short-term construction characteristics, the proposed project would not cause an increase in the population of Ventura County. Since the project would not cause population forecasts used to prepare the AQMP to be exceeded, it is consistent with the AQMP. Furthermore, the project would be consistent with the air emission control strategies outlined in the AQMP by complying with stationary source regulations and BACT requirements included in the project's Permit to Operate issued by the VCAPCD.

4.1.4 Cumulative Impacts

The Ventura County Air Quality Assessment Guidelines (2003) state:

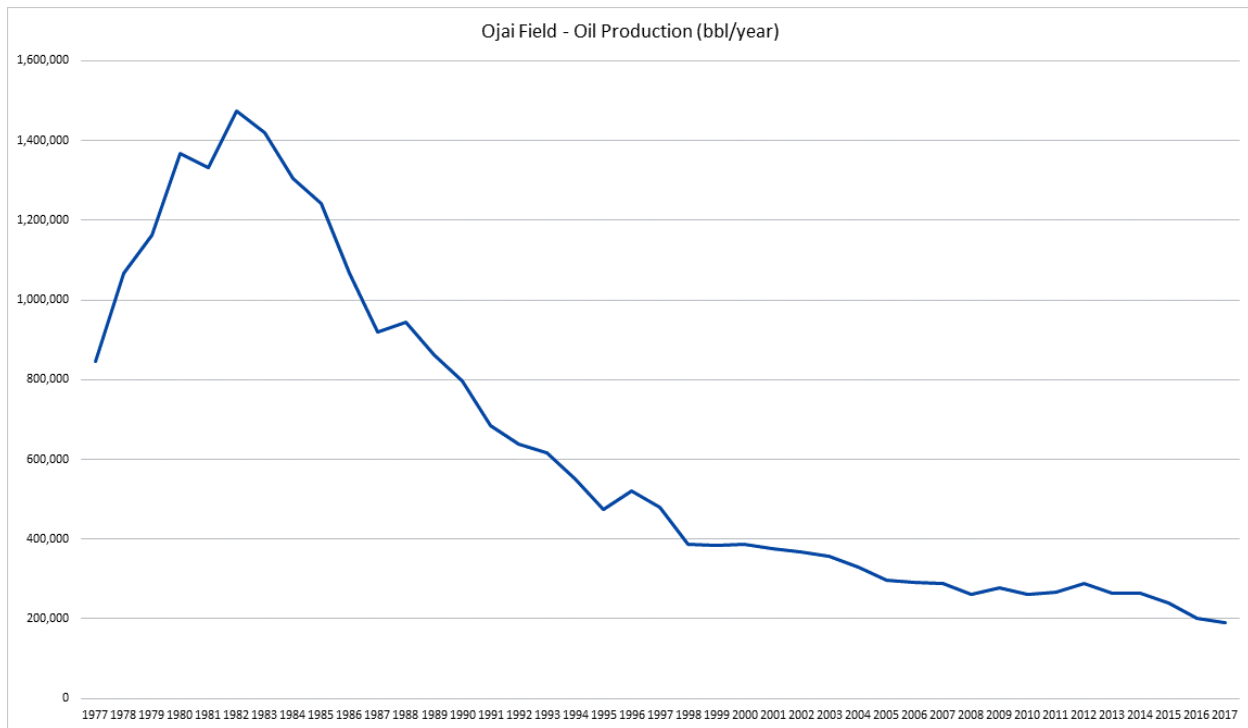
“A project with emissions of two pounds per day or greater of ROC, or two pounds per day or greater of NO_x that is found to be inconsistent with the AQMP will have a significant

cumulative adverse air quality impact. A project with emissions below two pounds per day of ROC, and below two pounds per day of NOx, is not required to assess consistency with the AQMP. Inconsistent projects are usually those that cause the existing population to exceed the population forecasts contained in the most recently adopted AQMP.”

As depicted on Table 4.1-6, when project-related emissions are evaluated using the methodology specified by the Court after its review of the 2016 SEIR prepared for the project (all project-related emissions are compared to the adopted significance thresholds) the project’s emissions of ROC would be greater than two pounds per day, however, NOx emission would be well below two (2) pounds per day. However, as evaluated above, the proposed project would be consistent with the AQMP because it would not cause population forecasts used to prepare the AQMP to be exceeded. Therefore, under the Court’s emission evaluation methodology the project’s cumulative air quality impact would not be cumulatively considerable and would be less than significant.

The potential for significant cumulative air quality impacts of the proposed project plus other new oil and gas projects within the immediate airshed can also be analyzed. Recent contact with County Planning Division staff indicated that the Bentley Oil and Gas Project, Case No. PL15-0187, is the only new oil and gas project within the immediate airshed. In that project, the applicant was granted a modification to allow the continued use of nine existing oil wells and to allow full time flaring of all produced natural gas due to the loss of access to a gas sales pipeline. Another cumulative oil and gas project in the project area is the Nesbitt and Harth (PL15-0060) project. These two projects also resulted in air emissions that did not exceed the 5 pounds per day threshold of significance. Emissions from all of the identified cumulative oil and gas production projects would require a permit from the VCAPCD, and associated stationary emissions are not subject to adopted CEQA impact significance thresholds. Also similar to the proposed project, it is not expected that emissions from mobile sources (i.e., tanker trucks) generated by the cumulative oil and gas projects would be cumulatively considerable due to the generally low volumes of fluids expected to be produced. As a result, the cumulative impact of the identified cumulative oil and gas projects would not be significant.

Lastly, the increased production of oil from the proposed two new wells would bring overall oil production in the Ojai Oil Field back to conditions that existed in the 2015-2016 timeframe which is the project’s baseline year condition (baseline conditions are those that existed at the time the Notice of Preparation is published – in this case February 19, 2015). The following figure shows the Ojai Oil Field production from 1977 through 2017 based on DOGGR production records:



The evaluation of project-related air quality impacts assumed 20 barrels/day of oil production per each proposed well. This would equal 21,900 barrels/year by the time all three of the originally proposed wells were drilled and producing. In 2015 the Ojai Field produced 238,334 barrels of oil. By 2017 production was 190,154 barrels. Assuming field production levels remain steady after 2017, addition of the project-related oil production would result in annual field oil production of 212,054 barrels which is below 2015 levels, suggesting that the addition of the proposed wells would not cause a substantial increase in area production and the project's additional emissions would not result in a cumulatively considerable increase.

4.1.5 Mitigation Measures

The impact analyses provided above indicate that the proposed project would not result in significant construction phase or operation phase air quality or health risk impacts. Therefore, no mitigation measures are required to reduce project-related air quality impacts to a less than significant level.

As described in the *Ventura County Air Quality Assessment Guidelines*, ozone precursor emissions from mobile construction equipment are not counted against the adopted impact significance thresholds (VCAPCD CEQA Guidelines, page 7-5). However, an effort should be made to reduce construction emissions if the emissions exceed the applicable significance threshold. Project-related construction NO_x (ozone precursor) emissions would exceed the 5 lbs/day Ojai Planning Area criteria pollutant significance threshold. Implementation of the following condition of approval would reduce ozone precursors to the extent possible during oil well construction periods. Implementation of the following condition of approval would also

reduce project-related diesel particulate matter emissions. The following recommended condition of approval is not required to reduce the project's short-term construction emission impacts to a less than significant level.

Recommended Condition of Approval

Construction Equipment

Purpose: To reduce ozone precursor and diesel particulate emissions from mobile construction equipment to the greatest amount feasible.

Requirement: The Permittee shall comply with the provision of applicable VCAPCD ROC and NO_x construction emission reduction measures, which include but are not limited to provisions of Section 7.4.3 of the Ventura County Air Quality Assessment Guidelines.

- a. Construction equipment shall not have visible emissions, except when under load.
- b. Construction equipment shall not idle for more than five (5) consecutive minutes. The idling limit does not apply to: (1) idling when queuing; (2) idling to verify that the vehicle is in safe operating condition; (3) idling for testing, servicing, repairing or diagnostic purposes; (4) idling necessary to accomplish work for which the vehicle was designed; (5) idling necessary to bring the machine system to operating temperature; and (6) idling necessary to ensure safe operation of the vehicle.
- c. Maintain equipment engines in good condition and in proper tune as per manufactures' specifications.
- d. Use alternative fueled construction equipment, such as compressed natural gas, liquefied natural gas, or electric, if feasible.
- e. Use a drilling rig equipped with newer Tier 3 or Tier 4 engines, if available at the time of drilling.

Documentation: The Lead Agency shall ensure that the applicant provides a written idling policy that is made available to operators of vehicles and equipment and informs them that idling is limited to five consecutive minutes or less. The applicant shall also provide to the Lead Agency written verification of efforts made to use a drilling rig equipped with a Tier 3 or 4 engine at the project site. The project applicant shall provide written documentation to the Lead Agency of actions taken to determine the feasibility of using a drilling rig equipped with a Tier 3 or 4 engine prior to moving a drill rig onto the project site.

Timing: The project-specific idling requirements required by item "b" above shall be submitted to VCAPCD staff prior to construction for review and approval. All requirements of this condition of approval shall be implemented throughout the construction phases of the project.

Reporting and Monitoring: The Lead Agency shall refer to the VCAPCD approved project-specific idling requirements to ensure compliance. The Lead Agency will site inspect to ensure a drilling rig equipped with Tier 3 or 4 engines is in use if it was determined that drilling rigs with such engines were available.

4.2 TRAFFIC CIRCULATION and SAFETY

The evaluation of project-related traffic circulation and safety impacts is based on a report titled *Agnew Oil Lease Development Modified CUP, Ventura County, California*, prepared by Associated Transportation Engineers (ATE, 2019). This report is attached to this RSEIR as Appendix C.

4.2.1 Background

Previous Environmental Review. The traffic impact analysis included in the 1983 FEIR prepared for the previously proposed Modification No. 4 of CUP 3543 evaluated potential impacts that that may result from that project's use of State Route 150 and Koenigstein Road by large vehicles (e.g. drill rigs, tanker trucks). The 1983 FEIR's traffic impact analysis concluded:

Both Bridge #326 on Koenigstein Road and the road itself are adequate to carry heavy equipment. Since the road is inadequate to accommodate two passing trucks, one truck would be required to pull over to the shoulder. This condition would create an inconvenience; however, it would not be characterized as unsafe due to the small volume of traffic currently occurring on the road.

The movement of large vehicles at the intersection of State Route 150 and Koenigstein Road could create unsafe conditions.

Appendix B of the 1983 FEIR includes the Board Agenda Letter for the November 15, 1977 hearing. In this document, the County Public Works Agency (PWA) describes the intersection of Koenigstein Road and State Highway 150 as having a "seriously deficient intersection configuration." This document also questioned the adequacy of the bridge at this intersection due to "basic minimum road geometrics." Consistent with these comments, the 1983 FEIR concluded that the movement of large vehicles at the intersection of State Route 150 and Koenigstein Road could create unsafe conditions.

The Planning Commission adopted the following finding in its November 17, 1983 decision regarding the CUP 3543 Modification No. 4 project:

Significant traffic impacts could occur due to movement of large vehicles at the intersection of Highway 150 and Koenigstein Road creating unsafe conditions. This potential impact could be reduced to an insignificant level by imposition of Condition 52 which would require that all trucks over $\frac{3}{4}$ ton avoid the use of Koenigstein Road by utilizing a private access road through Ojai Oil Company property.

The Planning Commission also adopted the following finding regarding traffic circulation in its November 17, 1983 decision:

Access to the drill site for small vehicles would be via Koenigstein Road, thence several hundred feet north along private access roads to the subject drillsite. Truck traffic would

access the site via Highway 150 one half mile west of Koenigstein Road, thence north and east along an unpaved private access road through the Ojai Oil Company property (CUP 293 A). Condition 52 would prohibit truck traffic (over ¾ ton) on Koenigstein Road. This prohibition is necessary because of a narrow bridge on Koenigstein Road immediately adjacent to Highway 150 which results in poor turning radii for large vehicles.

As part of the 1983 decision to approve the previously proposed Modification No. 4 to CUP 3543, the Planning Commission imposed Condition No. 52. This condition reflects the above environmental findings and generally prohibits the use of Koenigstein Road by heavy trucks associated with the operation of the oil and gas facility. Condition No. 52 reads as follows:

52. Truck Access Prohibited

That in conjunction with drilling operations, the permittee shall be prohibited from utilizing Koenigstein Road as a primary access road with ¾-ton and over trucks, except for secondary emergency traffic.

The term “drilling operations” in the above condition of approval, when read in the context of the findings made by the Planning Commission, refers to all large truck traffic associated with both drilling and production operations.

CUP 3543 currently requires that large trucks access the project site by using a private road that intersects with State Route 150 at a location approximately one-half mile west of Koenigstein Road. That road, however, relied on a dry weather crossing (i.e., an “Arizona crossing”) over Sisar Creek. The crossing was destroyed by flooding in 1995 and has not been replaced. The 2016 SEIR prepared for the proposed project concluded that the reconstruction of the destroyed access road across Sisar Creek was not feasible because the site of the former road crossing is now an active stream channel that supports sensitive wildlife habitat.

Existing Conditions

Street Network. The project site is served by a circulation system comprised of highway and local roads, which are illustrated on Figure 4.2-1 and described below.

State Route 150, located south of the project site is a 2-lane conventional highway that connects U.S. Highway 101 in Santa Barbara County to State Route 126 in Ventura County, linking the cities of Carpinteria, Ojai and Santa Paula. State Route 150 (Ojai Avenue) is a principal east-west arterial through the City of Ojai. The unsignalized State Route 150/Koenigstein Road intersection would provide access to the project site.



Source: ATE, 2019

County of Ventura

Carbon California Company LLC Agnew Lease Oil and Gas Project

Figure 4.2-1

Existing Street Network/Project Site Location

Koenigstein Road, is a 2-lane north-south roadway that extends north from State Route 150. Koenigstein Road provides access to several private residences and existing oil and gas leases in the Ojai Oil Field. A private road connection to Koenigstein Road would continue to provide direct access to the project site.

Roadway Operations

Existing average daily traffic (ADT) volumes for the study-area roadway segments are illustrated on Figure 4.2-2. The roadway segment volumes were collected by ATE in May of 2018. In determining the operational characteristics of these roadway segments, "Levels of Service (LOS) "A" through "F" are applied, with LOS "A" indicating very good operations and LOS "F" indicating poor operations.

Levels of Service for the study-area roadway segments were determined based on Ventura County roadway engineering design capacities. The results are presented in Table 4.2-1.

Table 4.2-1
Existing Roadway Segment Levels of Service

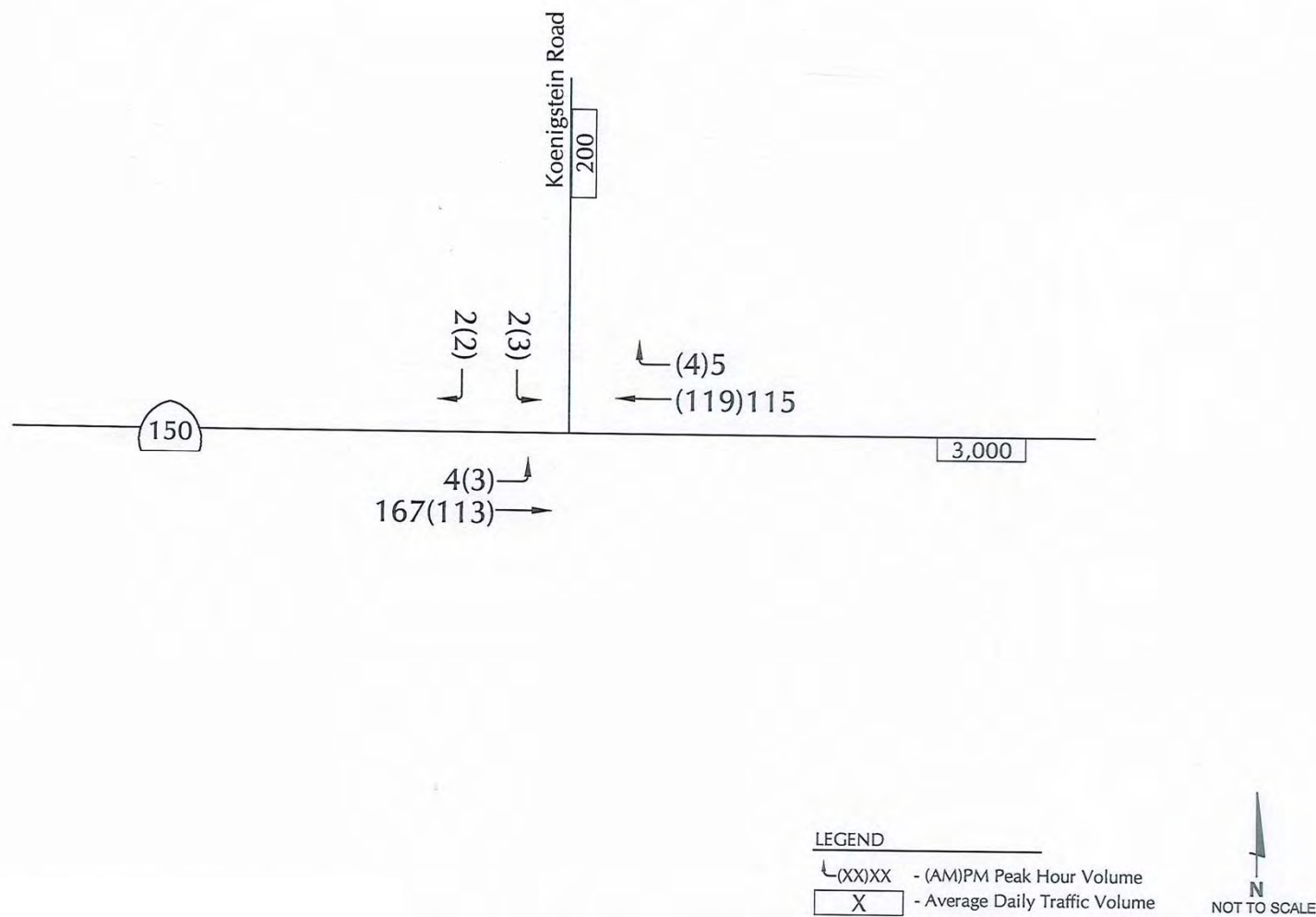
Roadway	Classification	Geometry	ADT	LOS E Capacity	LOS
State Route 150	Class II	2-lane	3,000	21,000	LOS B
Koenigstein Road	Class III	2-lane	200	16,000	LOS A

The data presented in Table 4.2-1 indicate that the study-area roadway segments currently operate in the LOS "A" - "B" range based on the County's level of service criteria. Note that the 2015 baseline conditions presented in the 2016 SEIR utilized 2015 ADT traffic volumes of 2,900 on State Route 150, and 250 on Koenigstein Road. The 2018 traffic counts utilized by ATE indicate that the baseline conditions have not changed relative to roadway levels of service.

Intersection Levels of Service

Because traffic flow on urban arterials is most restricted at intersections, a detailed analysis of traffic flow must examine the operating conditions of critical intersections during peak flow periods. As with roadway segments "Levels of Service" (LOS) "A" through "F" are used to rate intersection operations.

Existing A.M. and P.M. peak hour turning volumes for the study-area intersection are shown on Figure 4.2-2. The peak hour turning volumes were collected by ATE in May of 2018. Figure 4.2-3 illustrates the study-area intersection existing traffic control and the intersection geometry.

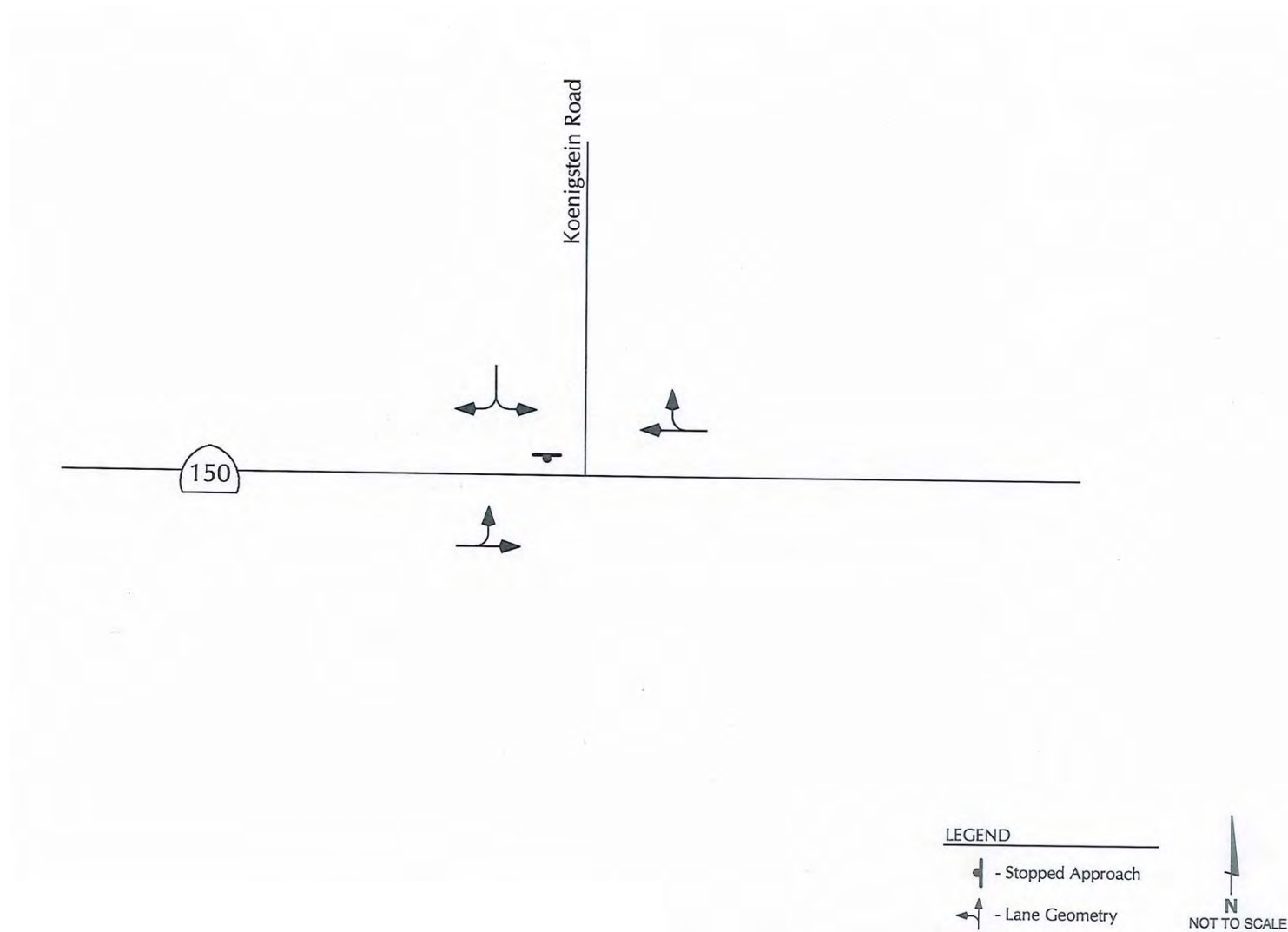


Source: ATE, 2019

County of Ventura

Carbon California Company LLC Agnew Lease Oil and Gas Project

Figure 4.2-2
Existing Traffic Volumes



Source: ATE, 2019

County of Ventura

Carbon California Company LLC Agnew Lease Oil and Gas Project

Figure 4.2-3

Existing Lane Geometry and Traffic Controls

The level of service for the State Route 150/Koenigstein Road intersection was calculated using the Highway Capacity Manual unsignalized intersection methodology. Table 4.2-2 lists the type of traffic control and the existing A.M. and P.M. peak hour levels of service for the intersection.

Table 4.2-2
Existing Intersection Levels of Service

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		Delay	LOS	Delay	LOS
State Route 150/Koenigstein Road	Stop Sign				
Eastbound left-turn		7.5 sec.	LOS A	7.5 sec.	LOS A
Southbound approach		9.6 sec.	LOS A	9.7 sec.	LOS A

The data presented in Table 4.2-2 indicate that the State Route 150/Koenigstein Road intersection delayed movements currently operate at LOS “A” or better during the A.M. peak hour and P.M. peak hour periods, which meets the County’s LOS “C” standard.

4.2.2 Thresholds of Significance

Ventura County General Plan Policies

Roadways

The thresholds established by Ventura County¹ that are outlined in Table 4.2-3 were used to assess the significance of roadway and intersection impacts associated with project-generated traffic.

¹ *Ventura County Initial Study Assessment Guidelines*, County of Ventura, April 26, 2011.

Table 4.2-3
Minimum Acceptable Level of Service For Roadway Segments and Intersections

Minimum LOS	County of Ventura - Description
C	All County maintained local roads.
D	All County thoroughfares and state highways within the unincorporated area of the County, except as provided below
E	1. State Route 33 between the end of the Ojai freeway and the City of Ojai. 2. State Route 118 between Santa Clara Avenue and the City of Moorpark. 3. State Route 34 (Somis Road) north of the City of Camarillo. 4. Santa Rosa Road between Camarillo city limit line and Thousand Oaks city limit line. 5. Moorpark Road north of Santa Rosa Road to Moorpark city limit line.
Varies	The LOS prescribed by the applicable city for all state highways, city thoroughfares, and city maintained local roads located within that city, if the city has formerly adopted General Plan policies, ordinances or a reciprocal agreement with the County, pertaining to development in the city that would individually or cumulatively affect the LOS of state highways, county thoroughfares and county-maintained local roads in the unincorporated area of the County.
	County LOS standards are applicable for any city that has not adopted its own standards or has not executed a reciprocal agreement with the County pertaining to impacts to County roads.
At any intersection between two roads, each of which has a prescribed minimum acceptable LOS, the less stringent LOS of the two shall be the minimum acceptable LOS of that intersection.	

Project-Specific Impacts. A significant adverse project-specific traffic impact is assumed to occur on any road segment if any one of the following results from the project:

- a. If the project would cause the existing LOS on a roadway segment to fall to an unacceptable level as defined in Table 4.2-3.
- b. If the project would add one or more peak hour trip (PHT) to a roadway segment that is currently operating at an unacceptable LOS as defined in Table 4.2-3.

Cumulative Impacts. A potentially significant adverse cumulative traffic impact is assumed to occur on any road segment if any one of the following results from the project:

- a. If the project would add one or more PHT to a roadway segment that is part of the regional road network and the roadway segment is currently operating at an unacceptable LOS as defined in Table 4.2-3.
- b. If the project would add 10 or more PHT to a roadway segment that is part of the regional road network and is projected to reach an unacceptable LOS as defined in Table 4.2-3 by the Year 2020.

The County of Ventura's traffic impact analysis thresholds for the Ojai area also focus on the segment of State Route 33 in the Casitas Springs community, located south of the City of Ojai.

The threshold states that a project would contribute to significant cumulative impacts if it adds one or more southbound trips during the A.M. peak period or adds one or more northbound trips during the P.M. peak period to State Route 33 in Casitas Springs (Ventura County Public Works, 2018).

Intersections

A potentially significant adverse project-specific traffic impact is assumed to occur at any intersection in the Regional Road Network if the project would exceed the thresholds established in Table 4.2-4.

**Table 4.2-4
Threshold of Significance for Changes in Level of Service at Intersections**

Significant Changes in LOS	
Intersection Level of Service (Existing)	Increase in V/C or Trips Greater Than
LOS A	0.20
LOS B	0.15
LOS C	0.10
LOS D	10 Trips*
LOS E	5 Trips*
LOS F	1 Trip*
*To critical movements. These are the highest combination of left and opposing through/right-turn peak hour turning movements	

If the project involves County General Plan land use designation changes, zone changes or intensification of use, such that the project's impacts could not have been anticipated and were not included in either analysis for the current General Plan or TIMF Program, or the project is located within the boundaries of the Ojai Area Plan, additional cumulative impact analysis and mitigation measures may be required at the discretion of the Director, County PWA - Transportation Department.

4.2.3 Impact Analysis

Project Trip Generation

Proposed oil production operations would include tanker truck transport of produced oil and wastewater from the project site to off-site oil refining and wastewater disposal facilities. All tanker truck operations would occur between the hours of 7:30 A.M. to 6:30 P.M. Monday through Friday.

Truck traffic that would be generated by the proposal to operate two additional wells and a re-drilled well at the Agnew lease project site can be estimated based on existing and projected fluid production volumes, as the fluid produced at the project site would be removed using tanker trucks. Based on the fluid production rates that occurred in 2015 (baseline conditions) and that

are summarized on Table 3.2-1 (Estimated Existing Large Truck Trips: 2015-2017) it is estimated that fluid produced by the existing oil wells at the project site require an average of 0.12 to 0.22 one-way truck trips per day. The number of truck trips required to remove fluid produced by the proposed two new wells and one re-drilled well has been estimated to be the same as the traffic generated by the three existing wells located at the project site. Table 4.2-5 provides a summary existing and potential project-generated truck trips based on recent and projected fluid production volumes and various haul truck capacities.

**Table 4.2-5
Existing and Estimated Project-Generated Truck Trips**

Haul Truck Capacity (barrels)	Baseline (2015) One-Way Truck Trips		Proposed Project Generated One-Way Truck Trips		Baseline Plus Proposed Project One-Way Truck Trips	
	Trips Per Day (1)	Trips Per Week (2)	Trips Per Day	Trips Per Week (2)	Trips Per Day	Trips Per Week
100	0.22	1.1	0.22	1.1	0.44	2.2
150	0.14	0.70	0.14	0.70	0.28	1.4
180	0.12	0.60	0.12	0.60	0.24	1.2

(1) Truck trips based on fluid production and truck trip estimates on Table 3.2-1.

(2) Truck trips would occur Monday through Friday, or five days per week.

CUP 3543 currently allows up to 12 tanker truck loads per week (24 truck trips per week). However, as described in RSEIR Section 2.0 (Project Description) the proposed project would reduce the authorized number of project-related large truck trips to a maximum of eight (8) tanker truck loads (16 one-way trips) per week. The proposed renewal of CUP 3543 includes a request to allow a maximum of eight tanker loads per week to accommodate potential fluid production volumes that are greater than anticipated, or occasional truck trips required for operations such as removing rainwater that collects within the secondary containment berms that are maintained around the on-site fluid storage tanks. The analysis of potential traffic-related impacts is based on the maximum number of tanker truck trips (i.e., eight tanker loads/16 trips per week) that would be allowed if the CUP renewal is approved.

The existing CUP does not limit the number of vehicle trips associated with maintenance and operation of the existing oil production facilities. Also as described in RSEIR Section 2.0, the proposed project would limit maintenance and operation traffic to 14 maintenance visits per week (i.e. 28 one-way trips). Maintenance-related vehicle trips would typically be by a standard pickup truck. Table 4.2-6 summarizes the peak daily traffic generation characteristics of the proposed project.

For analysis purposes it was assumed that the project could result in a total of four (4) A.M. peak hour trips and four (4) P.M. peak hour trips on a particular day. This analysis of the project's traffic-related impacts reflects estimated peak traffic generation characteristics. As described in RSEIR Section 2.0, the proposed project could generate up to eight (8) large truck loads per week, which would typically result in one truck load per day, or two (2) average daily truck trips per day

(i.e., one truck trip in and one truck trip out). With a maximum of eight tanker trucks per week, however, the project would have the potential to result in two tanker trucks traveling to/from the project site on one day.

**Table 4.2-6
Project-Related Peak Vehicle Trip Generation**

Trucks	ADT	A.M. Peak Hour			P.M. Peak Hour		
		Trips	In	Out	Trips	In	Out
Tanker Trucks	4 (1)	2	1	1	2	1	1
Maintenance Trucks	4 (2)	2	1	1	2	1	1
Total Trip Generation	8	4	2	2	4	2	2

(1) Tanker Truck Daily Trips: 2 in and 2 out

(2) Maintenance Truck Daily Trips: 2 in and 2 out

The two proposed new oil wells would be served by the same truck that has historically served the three existing oil wells at the project site. Due to the low volume of fluid produced by the three existing oil wells, one truck (one trip in and one trip out) per day to remove produced fluids from the site is typically adequate. The same truck that would serve the proposed project site would continue to serve other oil leases located along Koenigstein Road that are operated by the project applicant. There are three additional oil leases operated by Carbon California that obtain access from Koenigstein Road and are served by the same tanker truck that would serve the proposed Agnew Lease project, including: 1) Nesbitt Lease (PL15-0060); 2) ADP Federal (this project operates under a Federal lease); and 3) MP Lane (this project operates under a Federal lease). The tanker truck that would be used to transport produced fluid from the proposed project site and nearby leases must be either a truck/trailer combination that is no more than 56 feet long and eight (8) feet wide; or a truck (without a trailer) that is no more than 24 feet long and eight (8) feet wide. This requirement is specified by Condition of Approval No. 58 of PL15-0060, which was approved for the Nesbitt lease.

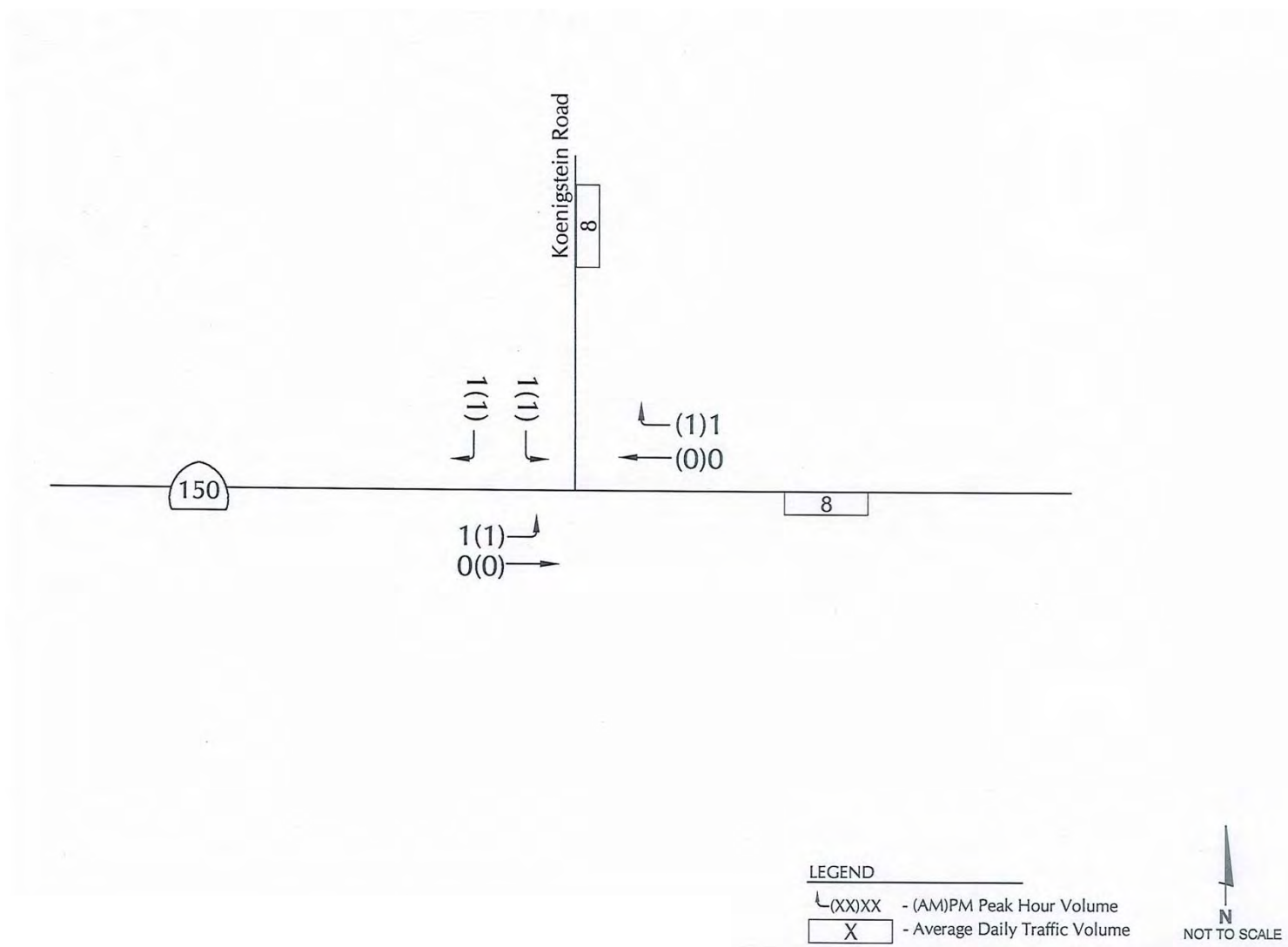
As described above, CUP-3543 limits the existing project to 12 truckloads per week (24 truck trips per week). However, this truck trip limitation is not applicable to the use of Koenigstein Road as the use of that roadway by large trucks is currently prohibited by CUP-3543.

Project Trip Distribution and Assignment

The proposed project vehicle trip distribution is based on truck route information presented in the 2016 SEIR. Trucks associated with the proposed project would be routed to and from the east towards the City of Santa Paula. Figure 4.2-4 illustrates the distribution pattern used to assign the truck trips associated with the operation of the proposed project.

Existing + Project Roadway Operations

Existing + Project average daily traffic (ADT) volume for the study-area roadway segment is illustrated on Figure 4.2-5. Levels of Service for the study-area roadway segment



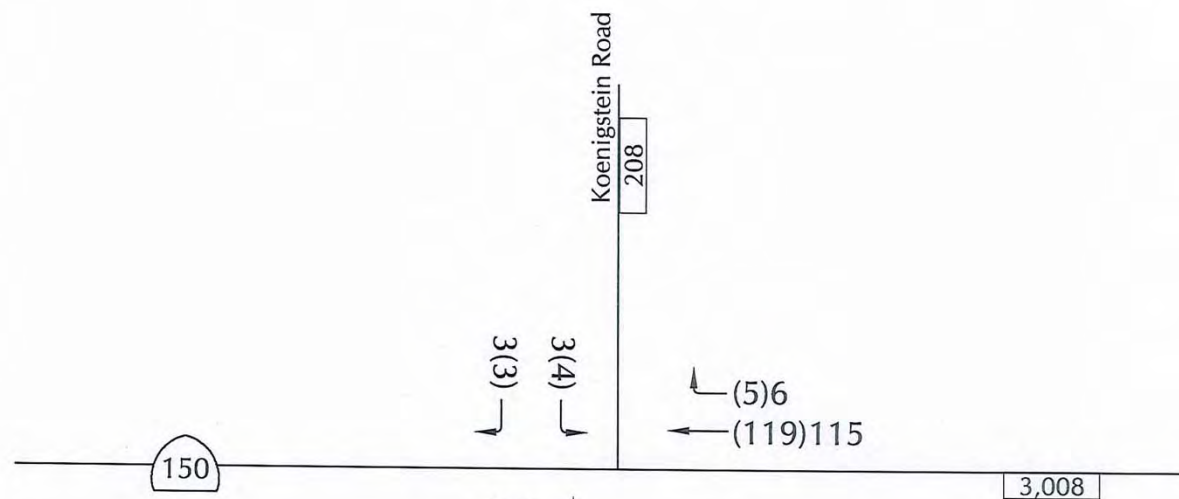
Source: ATE, 2019

County of Ventura

Carbon California Company LLC Agnew Lease Oil and Gas Project

Figure 4.2-4

Project Trip Distribution and Assignment



LEGEND

- (XX)XX - (AM)PM Peak Hour Volume
 X - Average Daily Traffic Volume



Source: ATE, 2019

County of Ventura

Carbon California Company LLC Agnew Lease Oil and Gas Project

Figure 4.2-5

Existing + Project Traffic Volumes

were determined based on Ventura County roadway engineering design capacities, and the results are presented in Table 4.2-7.

**Table 4.2-7
Existing + Project Roadway Levels of Service**

Roadway Segment	Existing Geometry	Roadway Classification	Existing + Project ADT	LOS D Capacity	LOS
State Route 150	2-lanes	Class II	3,008	21,000	LOS B
Koenigstein Road	2-lanes	Class III	208	16,000	LOS A

The data presented in Table 4.2-7 indicate that the study-area roadway segments would continue to operate in the LOS “A” - “B” range with project-generated traffic based on the County’s level of service criteria. Therefore, the project would have a less than significant (Class III) impact to project area roadway operations.

Existing + Project Intersection Levels of Service

Levels of service for the State Route 150/Koenigstein Road intersection were calculated assuming the Existing + Project traffic volumes shown on Figure 4.2-5. Table 4.2-8 lists the results of the calculations and Existing + Project level of service ratings.

**Table 4.2-8
Existing + Project Intersection Levels of Service**

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		Delay	LOS	Delay	LOS
State Route 150/Koenigstein Road					
Eastbound left-turn	Stop-Sign	7.5 sec.	LOS A	7.5 sec.	LOS A
Southbound approach		9.6 sec.	LOS A	9.7 sec.	LOS A

The data presented in Table 4.2-8 indicate that the project would not affect vehicle delay times at the State Route 150/Koenigstein Road intersection, and would not result in a significant impact during weekday peak hour periods. The study area unsignalized intersection delayed movements would continue to operate in the LOS “A” range with the addition of project-generated traffic volumes. Therefore, the project would have a less than significant (Class III) impact to the operation of the State Route 150/Koenigstein Road intersection.

Route 150/Koenigstein Road Project Potential Safety Impacts

The proposed project would authorize the use of Koenigstein Road by large project-related tanker trucks travelling to and from the project site. This access route for project-related trucks has been requested because, in 1995, the previously permitted access road was destroyed by flooding. The 2016 SEIR concluded that the reconstruction of the destroyed access road across Sisar Creek was not feasible because the site of the former road crossing is now an active stream channel that supports sensitive wildlife habitat. In addition, the construction of a new at-grade crossing or bridge spanning the creek would result in potentially significant impacts on the biological resources.

The 2016 EIR prepared for the proposed project also included an estimate of the amount of oil well-related truck traffic that currently uses Koenigstein Road. That analysis determined that between 1995 and 2014, a total of 247,141 barrels of produced fluid were exported from the Koenigstein Road area. The transportation of that fluid would have required approximately 1,373 to 2,471 tanker loads depending upon truck capacity, or between 2,746 and 4,942 truck trips (i.e., one load results in two truck trips). Using the highest estimated number of truck trips, approximately 0.7 truck trips (4,942 truck trips/7,300 days = 0.67 truck trips per day) occurred on Koenigstein road per day between 1995 and 2014.

The following is an evaluation for the State Route 150/Koenigstein Road intersection as it relates to its daily use by project-related tanker trucks, and occasional (i.e., a total of three times over the life of the project) use of the intersection to transport a drill rig to the project site. The evaluation of project-generated traffic impacts is based on the project traffic report included in Appendix C. To prepare that report, ATE conducted a field review of the intersection to determine sight distances, and evaluated collision data on State Route 150. The evaluation of the intersection was based on its use by oil tanker trucks that do not exceed the legal vehicle length limits as defined in Section 35401 of the State of California Vehicle Code. Any oversized trucks (i.e., a drill rig) that would use the State Route 150/Koenigstein Road intersection would be required to have a valid Transportation Permit issued by the California Department of Transportation (Caltrans) to use State Route 150; and a Transportation Permit issued by Ventura County would be required to use Koenigstein Road. A Transportation Permit would specify information such as: the number of vehicle trips requested, the time and date the trips would occur, and the proposed transportation route. A Transportation Permit may also require safety measures such as the use of front and rear pilot cars, requirements that the oversize vehicles be moved during daylight hours only, California Highway Patrol escort, lane closure/control measures, and the use of flagmen.

Project-Specific Long-Term Impacts

Potential long-term traffic safety impacts of the project were evaluated using threshold criteria included in Section 27a(2) *Transportation & Circulation – Roads and Highways – Safety and Design of Public Roads* of the *Ventura County Initial Study Assessment Guidelines* (April, 26, 2011). The proposed project's traffic characteristics were compared to each of the traffic safety criteria included in the Guidelines, and the results of the evaluation are presented below.

1. ***A project that impacts Public Roads or intersections will have a less-than-significant impact on the design of the Public Road system or intersections only if the existing Public Road or intersection complies with current County Road Standards and the proposed Public Road or intersection improvement or encroachment associated with by the project or required by the CEQA lead agency also complies with County Road Standards.***

The Ventura County *Initial Study Guidelines* includes the following description of roads in the County that do not comply with current road standards:

“Many existing roads in the County do not comply with current Road Standards, because many existing County roads were built prior to the existence or modern road standards and were often simply “farm to market” roads or rural access roads (often in remote, mountainous or otherwise rugged areas), intended for limited traffic. The fact that existing roads do not comply with current standards does not imply that existing roads are unsafe, nor does it mandate the initiation of improvement projects. However, additional or new development can place an additional burden on such roads and create expectations of increased or municipal levels of services.”

The County of Ventura Public Works Agency Transportation Department (Transportation Department) has reviewed the proposed project and in a memorandum dated November 21, 2019 (Appendix I), stated that from the location of the bridge to the location of the private access road used by the project, the pavement width of Koenigstein Road is approximately 32 feet, with one twelve-foot wide travel lane in each direction. The pavement width at the Koenigstein Road bridge over Sisar Creek is 24 feet, with two travel lanes. As reported by the Transportation Department, the Koenigstein Road widths are wider than what was reported by the 1980 EIR, which states “Koenigstein Road is a 14-foot-wide paved road with graded dirt shoulders.” Although Koenigstein Road north of the project site (approximately ½ mile to the north) has a pavement width less than 32 feet, the narrower roadway does not affect the trucks traveling to and from the proposed project site. The Transportation Department concluded that the statement in the 1980 EIR of trucks having to pull over to allow another truck to pass is not a factor for this project on Koenigstein Road. In addition, as indicated by the *Initial Study Guidelines*, the fact that the Koenigstein Road bridge over Sisar Creek does not meet existing design standards does not imply that the bridge is unsafe, and ATE (2019) concluded that the project-related use of the bridge would not create a safety hazard due to low traffic volumes that utilize the bridge.

As described in Project Description Section 2.3, the existing project CUP (CUP 3543) authorizes up to 12 tanker truck loads (24 one-way trips) of produced fluid to be exported from the project site per week. As proposed by the current project, the authorized number of large project-related truck trips using Koenigstein Road would be reduced to a maximum of eight (8) tanker truck loads (16 one-way trips) per week. In addition, the actual number of tanker truck trips generated by the proposed project would likely be lower than the proposed maximum number of permitted trips because the two proposed oil wells would be served by the same truck that currently serves the three existing oil wells at project site. Therefore, the proposed project would not place “an additional burden” on Koenigstein Road or the bridge

over Sisar Creek. Also, the project does not propose and has not been required to provide road improvements. Therefore, the project does not exceed the significance threshold related to road standards or required road improvements and would not result in a significant impact under Criterion No. 1.

2. *A project that either individually impacts a Public Road intersection so that the intersection exceeds any one of the traffic signal warrants established by the Manual for Uniform Traffic Control Devices, as supplemented and adopted by the State of California (MUTCD/CA), has the potential to cause a significant impact.*

A signal warrant analysis was conducted for the State Route 150/Koenigstein Road intersection (ATE, 2019). The traffic signal warrant analysis was completed based on the Manual on Uniform Traffic Control Devices (MUTCD), California Supplement, 8-Hour, 4-Hour, Crash and Average Daily Traffic vehicular volume warrant criteria. The Rural Warrants were used. Table 4.2-9 summarizes the results of the signal warrant analysis.

**Table 4.2-9
Signal Warrant Results – State Route 150/Koenigstein Road**

Warrant	Type	Warrant Satisfied?		
		Existing	Existing + Project	Cumulative + Project
No. 1	8-Hour Condition “A” Condition “B” (1)	No	No	No
		No	No	No
No.2	4-Hour	No	No	No
No.3	Peak Hour	Does Not Apply		
No.4	Pedestrian Volume	Does Not Apply		
No.5	School Crossing	Does Not Apply		
No.6	Coordinated Signal System	Does Not Apply		
No.7	Crash	No	N/A	N/A
No.8	Roadway Network	Does Not Apply		
No.9	Intersection Near a Grade Crossing	Does Not Apply		
ADT	ADT Condition “A” Condition “B” (1)	No	No	No
		No	No	No

Condition “A” = Minimum Traffic Volume

Condition “B” = Interruption of Continuous Traffic

The approach volumes on the minor street at the State Route 150/Koenigstein Road intersection do not satisfy the 8-Hour and the 4-Hour vehicular volume warrants under the Existing, Existing + Project and Cumulative + Project scenarios. To satisfy the 8-Hour warrant, a minimum of 53 vehicles per hour are necessary on the minor street approach with one lane. To satisfy the 4-Hour warrant, a minimum of 60 vehicles per hour are necessary on the minor street approach with one lane. The Cumulative + Project traffic volumes are below

53 vehicles per hour during both the 8-Hour and the 4-Hour periods. Neither Condition “A” nor “B” of the 8-Hour volumes warrant is 80 percent satisfied.

The approach volumes on the minor street at the State Route 150/Koenigstein Road intersection do not satisfy the ADT vehicular volume warrants under the Existing, Existing + Project and Cumulative + Project scenarios. To satisfy the ADT warrant, a minimum of 850 vehicles per day in one direction are necessary on the minor street approach with one lane. The estimated Cumulative + Project traffic volumes is 119 (238 ADT/2) vehicles per day.

Therefore, the project does not meet applicable signal warrants and would not result in a significant impact under Criterion No. 2.

3. ***A project that impacts Public Roads or intersections will have a less-than-significant impact on the safety and design of the Public Road System only if the existing Public Road or intersection complies with current County Road Standards, and if the affected Public Road or intersection has a collision or incident rates at or below state wide averages for similar facilities.***

As described in response No. 1 above, between the Koenigstein Road bridge over Sisar Creek and the project site access road, Koenigstein Road has a pavement width of approximately 32 feet, which complies with the Ventura County road standard of 32 feet. The bridge over Sisar Creek has a width of 24 feet, which does not comply with the County road width standard of 32 feet, however, in their November 21, 2019 memo (Appendix I) the Transportation Department concluded that the statement in the 1980 EIR ‘of trucks having to pull over to allow another truck to pass is not a factor for this project on Koenigstein Road’. Therefore, the proposed project would not place “an additional burden” (i.e., a substantial increase in truck traffic) on Koenigstein Road or the existing bridge over the creek.

Vehicle collision data for State Route 150/Koenigstein Road was obtained from Caltrans by making a public records request. The data provided shows that from 2016 to 2019 no collisions were reported at the intersection (ATE, 2019). Therefore, based on recent recorded collision data, the collision rate at the State Route/Koenigstein Road intersection is zero.

In addition, the Public Works Agency Transportation Department concluded that in order to analyze an intersection for safety concerns, the accepted method is to review collision history in the area and at the intersection. Typically, the data that is used is a minimum of three years and a maximum of five years of available collision data. However, for the proposed project the Transportation Department considered much more data. In the 20 years that the oil and gas company has been using Koenigstein Road there has been no evidence of tanker truck related collisions. Since there is no evidence that there have been collisions within that timeframe, the Transportation Department concluded that there is no nexus to require the project applicant to consider alternative routes of travel for the tanker truck related trips for the site (November 21, 2019 Public Works Agency Transportation Department Memorandum, Appendix I).

Therefore, the project does not exceed the collision rate significance threshold and the project would not result in a significant impact under Criterion No. 3.

4. ***A project has a potentially significant adverse project-specific traffic impact on any road segment if the roadway segment has been identified by SWITRS as experiencing a high incident rate.***

Collision data for the State Route 150/Koenigstein Road intersection has been obtained from Caltrans rather than SWITRS, which is a collision database maintained by the California Highway Patrol. Vehicle collision data recorded by Caltrans for State Route 150/Koenigstein Road shows that from 2016 to 2019 no collisions were reported at the intersection (ATE, 2019). In addition, the 2016 SEIR prepared for the project found that from 2002 to 2013 only two collisions occurred at the intersection and neither involved oil tanker trucks. In addition, since there is no evidence that there have been collisions with in that timeframe, the Transportation Department concluded that there is no nexus to require the project applicant to consider alternative routes of travel for the tanker truck related trips for the site. Therefore, the State Route 150/Koenigstein Road intersection does not have a high incident rate and the project would not result in a significant impact under Criterion No. 4.

5. ***A project has a potentially significant adverse project-specific traffic impact on the affected road segment if that road segment is identified as being a part of an existing road system that is noncompliant with current County road standards.***

As described in response No. 1 above, between the Koenigstein Road bridge over Sisar Creek and the project site access road, Koenigstein Road has a pavement width of approximately 32 feet, which complies with the Ventura County road standard of 32 feet. The bridge over Sisar Creek has a width of 24 feet, which does not comply with the County road width standard of 32 feet, however, the Transportation Department has concluded that the statement in the 1980 EIR ‘of trucks having to pull over to allow another truck to pass is not a factor for this project on Koenigstein Road’. In addition, access to the project site is not located within a “Substandard Impact Area” identified by the *Initial Study Assessment Guidelines*. Therefore, the project would not result in a significant impact under Criterion No. 5.

6. ***A proposed project located in the unincorporated area where the existing road systems were developed prior to any road safety engineering standards will have a significant adverse impact on road safety.***

ATE conducted a field review to determine if sufficient sight distance exists for tanker trucks at the State Route 150/Koenigstein Road intersection. The Caltrans Highway Design Manual² sight distance standards were used for the sight distance analysis. The segment of State Route 150 near the project site has rolling topography and has a posted 35 MPH speed limit. Based

² Highway Design Manual, Caltrans, 6th Edition.

on Caltrans criteria, the minimum required sight distance standard for a 35 MPH design speed is 250 feet.

The sight distance looking east along State Route 150 was measured at 350 feet, in excess of the 250-foot minimum. The sight distance looking west along State Route 150 was measured at 500, which also exceeds the 250-foot minimum.

The measured sight distances at the State Route 150/Koenigstein Road intersection exceeds the minimum site distance standard, therefore, the existing sight distance conditions would be adequate to serve the proposed project-generated truck traffic. Therefore, the road system that would serve the project would comply with this road safety engineering standard.

The project proposes to decrease the maximum allowable traffic volumes currently allowed by the project's existing CUP from 12 tanker truck loads per week (24 truck trips per week) to a maximum of eight (8) tanker truck loads (16 one-way trips) per week. The two proposed new oil wells would be served by the same truck that has historically served the three existing oil wells at the project site. Due to the low volume of fluid produced by the three existing oil wells, one truck (one trip in and one trip out) per day to remove produced fluids from the site is typically adequate. The same truck that would serve the proposed project site would continue to serve other oil leases located along Koenigstein Road that are operated by the project applicant. There are three additional oil leases operated by Carbon California that obtain access from Koenigstein Road and are served by the same tanker truck that would serve the proposed Agnew Lease project, including: 1) Nesbitt Lease (PL15-0060); 2) ADP Federal (this project operates under a Federal lease); and 3) MP Lane (this project operates under a Federal lease). The tanker truck that would be used to transport produced fluid from the proposed project site and nearby leases must be either a truck/trailer combination that is no more than 56 feet long and eight (8) feet wide; or a truck (without a trailer) that is no more than 24 feet long and eight (8) feet wide. This requirement is specified by Condition of Approval No. 58 of PL15-0060, which was approved for the Nesbitt lease.

Due to the low volumes of fluid produced by the existing on-site wells and the expected low volume of fluid to be produced by the proposed oil wells, total truck traffic generated by the existing and proposed project would likely be similar to existing truck traffic volumes generated by the existing oil wells at the project site and other existing oil leases operated by the project applicant that use Koenigstein Road for access.

Previous testimony before the Ventura County Planning Commission regarding other oil well projects located along Koenigstein Road have expressed concerns that due to the configuration of the State Route 150/Koenigstein Road intersection, trucks traveling westbound on State Route 150 must cross the highway's yellow dividing line before turning right onto Koenigstein Road. Specifically, this concern was raised during the Commission's consideration of the Nesbitt and Harth (PL15-0060) project that is located approximately one mile east of the Agnew lease project site (see RSEIR Section 3.5, Cumulative Projects).

During a July, 28, 2016, Planning Commission hearing regarding the Nesbitt and Harth project, Mr. David Fleisch, Director of the Ventura County Public Works Agency Transportation Department, answered questions from planning commissioners regarding the issue of trucks turning onto Koenigstein Road from State Route 150 and crossing over the highway dividing line. An excerpt from Mr. Fleisch's testimony is provided below and his complete testimony is included in RSEIR Appendix H.

"There isn't a county standard for safety and can somebody drive or not drive over a line. We have a design standard for roads that was in effect at the time the roads were built. And there's no requirement to update that to current standards, just because the standards change. So the road, at the time it was built, was appropriate for the traffic, and with the volumes of traffic that are on both of those roads [State Route 150 and Koenigstein Road] today, the road is still more than acceptable for the traffic that's there."

Because of the low volume, and you can even see this at the corner right out here at Victoria and Telephone, that trucks frequently turn wide and cross a line. That, in and of itself, does not make the road dangerous or does not make the traffic dangerous. They have to watch what's there. And in that area up there, as low volume as the traffic is, they would wait until the lane cleared before they made their turn. That's a perfectly safe operation. Yes, they're crossing the line, but that, in and of itself, doesn't make it unsafe."

In a memorandum dated November 21, 2019 (Appendix I), the Transportation Department stated that "the project, as proposed, will generate additional traffic on the local public roads and the Regional Road Network, but does not have the potential to alter the level of service (LOS) of the roadways that will be used by the project." The November 21, 2019, memo also states that "the project, as proposed, does not have the potential to alter the level of safety of roadways and intersections near the project. Therefore, impacts related to safety/design of County roads will be 'Less than Significant.'"

RSEIR Section 3.5 (Cumulative Projects) describes the Nesbitt well lease, which is operated by the Carbon California Company and obtains access from State Route 150 and Koenigstein Road. Fluids produced by the Nesbitt lease is removed and transported offsite by the same truck that historically served the existing Agnew Lease project, and that same truck would also serve the proposed Agnew Lease project. In their review of the environmental impact analysis prepared for the Nesbitt project, the California Department of Transportation (Caltrans) submitted a letter dated September 28, 2015, that stated in part: "*The nearest State facility to the proposed project is State Route 150. Caltrans does not expect project approval to result in a direct adverse impact to the existing State transportation facilities.*" The entire September 28, 2015, Caltrans letter is included as Appendix J. In addition, as a condition of approval for the Nesbitt well project (CUP No. 15-0060), the Board of Supervisors approved a condition of approval requiring the project applicant (Carbon California) to install a flashing warning light along State Route 150 that will alert on-coming traffic that a large vehicle (i.e., the oil tanker that serves the Nesbitt project as well as the existing and proposed Agnew lease project) is turning onto the highway.

The proposed project would not substantially increase traffic on State Route 150 or Koenigstein Road, and based on correspondence and previous testimony from the Transportation Department and Caltrans, truck turning movements at the State Route 150/Koenigstein Road intersection would not result in a significant traffic safety impact. Therefore, the project would not “place an additional burden” on the State Route 150/Koenigstein Road intersection, and the project would not result in a significant impact under Criterion No. 6.

7. ***A project will have a potentially significant adverse project-specific traffic impact at any unsignalized intersection on the Public Road system if the project-specific impacts result in any of the warrants established by the MUTCD-CA being met.***

As described by the analysis of Criterion No. 2, the project does not meet applicable signal warrants and would not result in a significant impact under Criterion No. 7.

8. ***A project with project-specific impacts to any intersection that has been identified in the Substandard Impact Areas Vicinity, Upper Ojai Substandard Impact Area, Santa Susana Area Substandard Impact Area, Ventu Park Area Substandard Impact Area, Yerba Buena Area Substandard Impact Area, or the Santa Susana Knolls Area Substandard Impact Area Maps shall be considered significant unless mitigated.***

Access roads that would serve the project site (State Route 150 and Koenigstein Road) are not located in a designated Substandard Impact Area. Therefore, the project would not result in a significant traffic safety impact under Criterion No. 8.

In conclusion, based on the information provided above, the risk of future accidents at the State Route 150/Koenigstein Road intersection cannot be eliminated, but based on the evaluation of traffic safety criteria included in the Ventura County *Initial Study Assessment Guidelines*, it could be concluded that the project would have a less than significant long-term traffic safety impact. However, in the Writ of Mandate (RSEIR Appendix A) issued for the 2016 SEIR prepared for the proposed Agnew Lease project, the Court concluded that based on the previous traffic safety analysis included in the 1983 EIR prepared for the Agnew Lease project; the analysis included in the 2016 SEIR prepared for the proposed project, and comments on that EIR submitted by Caltrans; and testimony provided at the June 21, 2016 hearing before the Board certified the 2016 SEIR “...substantial evidence in the record supports only a conclusion under CEQA of significant traffic safety impacts at the intersection of the Koenigstein Road bridge and State Highway 150...” In recognition of the Court’s decision, this RSEIR has identified feasible traffic safety mitigation measures to minimize the potential for a significant adverse long-term traffic safety impact that may result from the continued use of the Koenigstein Road bridge over Sisar Creek by oil tanker trucks that serve the proposed project site and other nearby oil leases. The proposed mitigation measures require: a) the installation of truck crossing signs along State Route 150; and b) that project-related oil tanker trucks used for the routine operation of the project site shall only use the Koenigstein Road bridge during daylight hours. The proposed mitigation measures also require that Caltrans approve the design, location, and installation of the truck crossing sign. Based on: a) the impact analysis provided above; b) the number of oil lease serving tanker trucks using Koenigstein Road would not be increased when compared to baseline

conditions; and c) additional feasible traffic safety measures would be implemented by the proposed project, the potentially significant long-term traffic safety impacts of the proposed Agnew Lease project can be reduced to a less than significant level (Class II).

Short-Term Project Construction Impacts

The proposed project would result in the drilling of two new oil wells and re-drilling of one existing oil well. These operations would be conducted using a separate drill rig that may require the approval of a Transportation Permit from the County and Caltrans, as described in Section 4.2.5 below. One new well is proposed to be drilled within five years of the effective date of the requested CUP modification approval. The other new/re-drilled wells are proposed to be drilled within 10 years of the effective date of the requested CUP modification approval. The drilling period for each new or re-drilled well would occur over a period of approximately two weeks. Drilling operations would require approximately 20 workers and 16 trucks that would deliver and remove drilling equipment. Over a two day period 16 truck trips (8 trucks per day) would bring drilling equipment to the site. Over a separate two day period 16 trucks (8 trucks per day) would remove drilling equipment from the site.

Drilling is proposed to occur 24 hours per day, and truck trips to and from the project site would occur during daylight hours generally between the hours of 7:00 A.M. and 6:00 P.M. The traffic generated during a drilling period would include truck traffic hauling drilling equipment to the site and worker trips to and from the site. Access to the project site would be via Koenigstein Road. The following summarizes the maximum daily traffic that may be generated during project-related drilling periods:

Drilling Equipment Daily Trucks Trips:	16 trips per day for 2 days (8 in and 8 out each day)
Employee Daily Trips:	40 light duty truck trips per day over approximately two weeks (20 in and 20 out each day)

Traffic generated by the drilling of wells at the project site would be limited in duration and would not result in a substantial increase in traffic. The short-term construction-related traffic would occur in addition to traffic that results from the operation of existing wells on the project site. As shown in Table 4.2-6, a maximum of eight (8) project-generated average daily vehicle trips would occur in addition to project-related construction traffic. As stated in RSEIR Section 2.3 (Project Characteristics) at minimum the traffic control measures to be implemented by the project when a drill rig is moved onto and from the project site would include the use of warning signs and flagmen on State Route 150 and Koenigstein Road in the vicinity of the intersection.

In a memorandum dated November 21, 2019 (Appendix I), the Transportation Department stated that “the project, as proposed, will generate additional traffic on the local public roads and the Regional Road Network, but does not have the potential to alter the level of service (LOS) of the roadways that will be used by the project.” The November 21, 2019, memo also states that

“the project, as proposed, does not have the potential to alter the level of safety of roadways and intersections near the project. Therefore, impacts related to safety/design of County roads will be ‘Less than Significant.’”

Based on the temporary nature of potential drill rig transportation impacts, compliance with required permits, the implementation of proposed and other traffic safety measures that may be required, and the good operating conditions that exist on state Route 150 and Koenigstein Road, and the evaluation conducted by the Transportation Department, potential safety impacts resulting from drill rigs travelling to and from the project site would be substantially reduced and would result in a less than significant (Class III) short-term traffic safety impact. To provide specific and enforceable traffic safety requirements regarding the use of oversized or heavy vehicles on County Roadways, and to minimize potential safety impacts that may result from project-related large vehicle (i.e., drilling rig) turning movements at the State Route 150/Koenigstein Road intersection, a suggested condition of approval for the project is provided in EIR Section 4.2.5.

4.2.4 Cumulative Impacts

There is little proposed development in the study area given the constraint on development resulting from the County’s General Plan policy regarding cumulative traffic impacts to State Route 33 (see Section 4.2.2, Thresholds of Significance). Based on historical (2011 to 2017) Caltrans traffic count data a 15 percent growth factor was applied to the existing traffic volumes in the project area to account for ambient traffic growth. The following evaluates a Year 2030 cumulative traffic condition scenario, and includes the traffic that would be generated by the proposed project.

Cumulative Roadway Operations

Cumulative daily traffic (ADT) volume for the study-area roadway segments are illustrated on Figure 4.2-6. Levels of Service for the study-area roadway segments were determined based on Ventura County roadway engineering design capacities. The results are presented in Table 4.2-10.

Table 4.2-10
Cumulative Roadway Levels of Service

Roadway Segment	Existing Geometry	Roadway Classification	Cumulative ADT	LOS D Capacity	LOS
State Route 150	2-lanes	Class II	3,500	21,000	LOS B
Koenigstein Road	2-lanes	Class III	230	16,000	LOS A

The data presented in Table 4.2-10 indicate that the study-area roadway segments would operate in the LOS “A” - “B” range under cumulative conditions based on the County’s level of service criteria.

Cumulative + Project daily traffic (ADT) volumes for the study-area roadway segments are illustrated on Figure 4.2-7. Levels of service for the study-area roadway segment were determined based on Ventura County roadway engineering design capacities, the results are presented in Table 4.2-11.

**Table 4.2-11
Cumulative + Project Roadway Levels of Service**

Roadway Segment	Existing Geometry	Roadway Classification	Cumulative + Project ADT	LOS D Capacity	LOS
State Route 150	2-lanes	Class II	3,508	21,000	LOS B
Koenigstein Road	2-lanes	Class III	238	16,000	LOS A

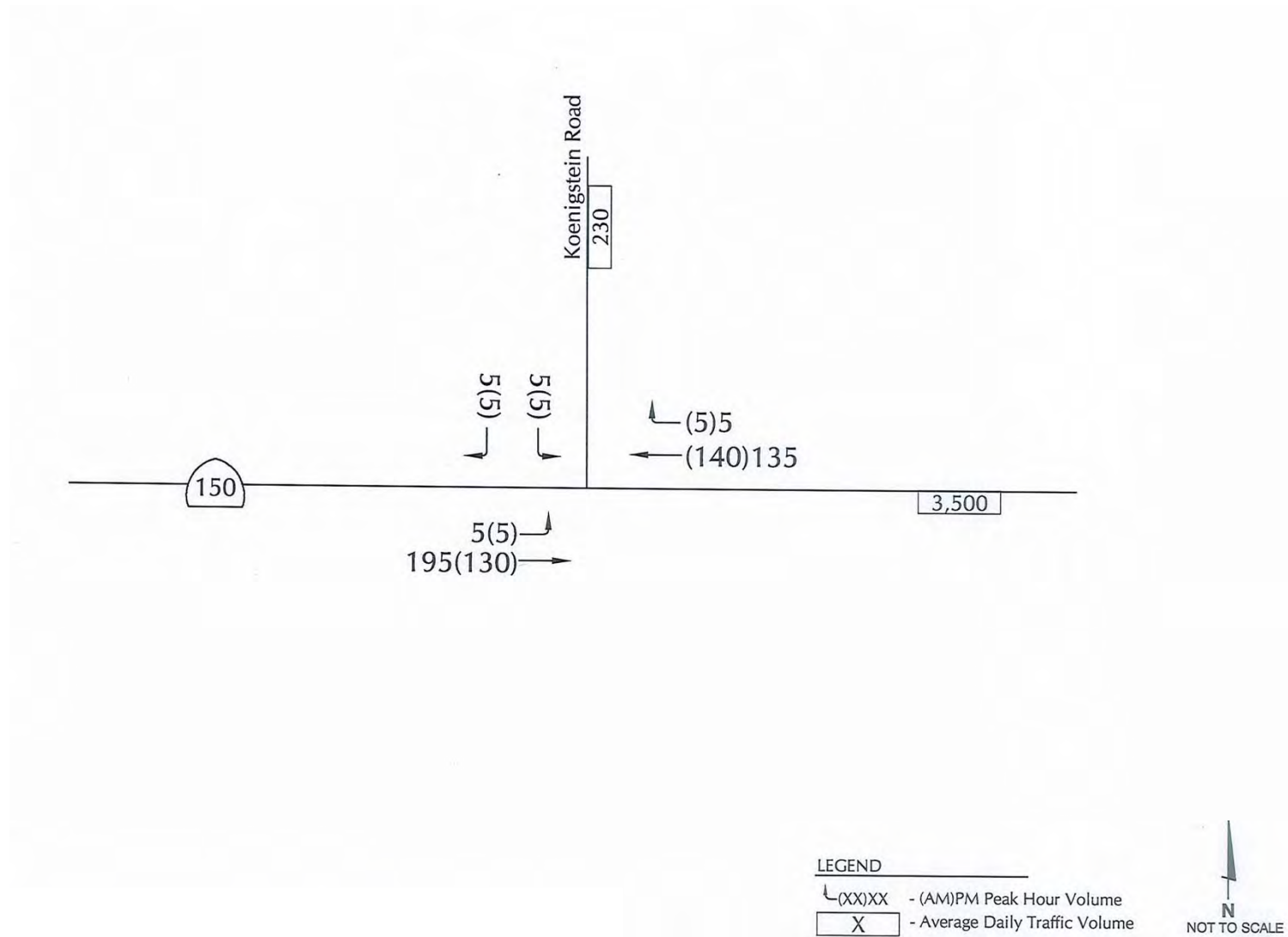
The data presented in Table 4.2-11 indicate that the study-area roadway segments would continue to operate in the LOS “A” - “B” range under Cumulative + Project traffic conditions based on the County’s level of service criteria. Therefore, the project would have a less than significant (Class III) cumulative impact to project area roadway operations.

Cumulative Intersection Levels of Service

Figures 4.2-6 and 4.2-7 illustrate the Cumulative and Cumulative + Project traffic volumes, respectively. Tables 4.2-12 and 4.2-13 show the A.M. and P.M. peak hour intersection levels of service for the cumulative scenario with and without project-generated traffic volumes.

**Table 4.2-12
Cumulative Intersection Levels of Service – A.M. Peak Hour**

Intersection	Delay - Level of Service			
	Cumulative		Cumulative + Project	
	Delay	LOS	Delay	LOS
State Route 150/Koenigstein Road				
Eastbound left-turn	7.6 sec.	LOS A	7.6 sec.	LOS A
Southbound approach	9.7 sec.	LOS A	9.8 sec.	LOS A

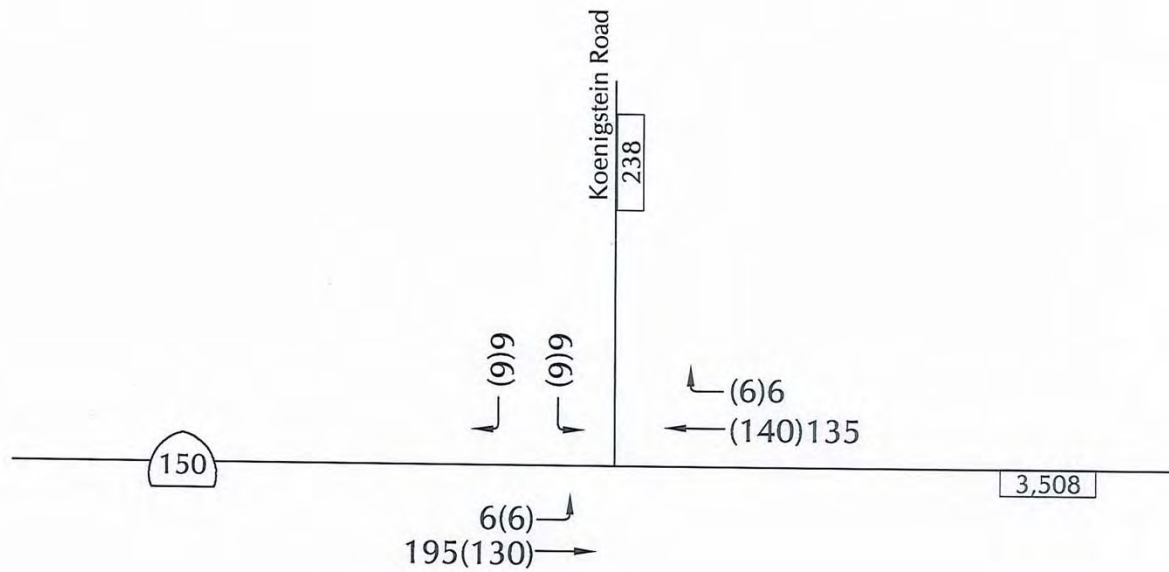


Source: ATE, 2019

County of Ventura

Carbon California Company LLC Agnew Lease Oil and Gas Project

Figure 4.2-6
Cumulative Traffic Volumes



LEGEND

- ⤵ (XX)XX - (AM)PM Peak Hour Volume
- ⬜ X ⬜ - Average Daily Traffic Volume



Source: ATE, 2019

Table 4.2-13
Cumulative Intersection Levels of Service – P.M. Peak Hour

Intersection	Delay - Level of Service			
	Cumulative		Cumulative + Project	
	Delay	LOS	Delay	LOS
State Route 150/Koenigstein Road				
Eastbound left-turn	7.5 sec.	LOS A	7.6 sec.	LOS A
Southbound approach	10.0 sec.	LOS A	10.0 sec.	LOS A

Tables 4.2-12 and 4.2-13 show that the State Route 150/Koenigstein Road intersection is forecast to operate at the LOS “A” range during the peak hour periods with General Plan Buildout volumes. Therefore, the project would have a less than significant (Class III) cumulative impact to the operation of the State Route 150/Koenigstein Road intersection operation.

As described in Section 3.5 (Cumulative Projects) there are two cumulative oil and gas production projects located in the vicinity of the Agnew Lease project site:

- The Bentley (PL15-0187) project was granted to authorize the continued use and maintenance of nine existing oil wells, and allow full time flaring of all oil well produced natural gas due to the loss of access to a gas sales pipeline, and a limitation on truck trips from unlimited to six (6) truckloads in any one week (or one roundtrip per day). This project would not result in any additional oil and gas-related traffic on Koenigstein Road or State Route 150.
- The Nesbitt and Harth (PL15-0060) project was granted to allow the testing, drilling, production, reworking and maintenance of nine proposed oil and gas wells and two existing wells on the Harth drilling pad; and the testing production, reworking and maintenance of two oil production wells located on the Nesbitt Lease. Only access to the Nesbitt project site is from Koenigstein Road. The SEIR prepared for the Nesbitt project estimated that it would generate 0.13 one-way tanker truck trips per day, or approximately one truckload every 16 days.

The use of the State Route 150/Koenigstein Road intersection by tanker trucks was evaluated by a separate report (ATE, 2016) prepared for the Nesbitt Lease oil and gas project. The Nesbitt and the proposed Agnew Lease projects would both be operated by Carbon California, and access to the Nesbitt project site is also from Koenigstein Road. The project applicant has indicated that due to the small size of the proposed Agnew and Nesbitt Lease projects, both would be serviced by the same tanker truck trip and same tanker truck. The traffic safety evaluation for the Nesbitt project is included as RSEIR Appendix G, and Caltrans comments stating that it does

not expect the project to result in a direct adverse impact to the existing State transportation facilities are provide in Appendix J.

The 2016 evaluation of the State Route 150/Koenigstein Road intersection reported sight distance, collision data, and roadway operation characteristics that are similar to what was reported in the 2019 evaluation prepared for the Agnew Lease project (RSEIR Appendix C). The 2016 evaluation provided the following conclusion:

“It is ATE's staff conclusion that the intersection will continue to operate satisfactorily based upon the accident record data, where there were two accidents noted (neither involved tanker trucks), over a 12-year period, Koenigstein Road has a low traffic volume, the sight distance at the intersection in both directions, as measured, meets or exceeds the Caltrans value for the prevailing speed. ATE also reviewed the intersection geometry. The proposed addition of less than 3 one-way tanker trips per day through this intersection will not alter this condition. The expected tanker trucks utilized by the project will not exceed the legal limits. Oversized trucks would be required to have a valid Transportation Permit.”

The 2016 evaluation prepared for the Nesbitt project was reviewed by the Ventura County Public Works Agency, Transportation Department (RSEIR Appendix G). That review concluded that the Transportation Department concurred with the findings of the evaluation.

Similar to the proposed Agnew lease project, it is anticipated that long-term vehicle traffic generated by routine maintenance activities at the cumulative oil and gas production project sites would be very low. Based on the good existing and cumulative operation characteristics of Koenigstein Road and State Route 150 (Level of Service A and B, respectively), truck and vehicle traffic generated by cumulative oil and gas production projects would not be cumulatively considerable and would not result in a significant traffic volume impact. Also similar to the proposed project, construction-related traffic generated by the cumulative oil and gas production projects would be limited in volume and duration, and would likely require the issuance of a Transportation Permit by Caltrans and Ventura County. It is also unlikely that construction operations at the Agnew lease and other cumulative oil and gas production project sites would occur simultaneously or result in cumulative short-term impacts at or near any of the proposed project sites.

Cumulative Long-Term Safety Impacts

Potential long-term cumulative traffic safety impacts of the project were evaluated using threshold criteria included in the Ventura County *Initial Study Assessment Guidelines* (April, 26, 2011) and the assessment criteria included in Section 27a(2) *Transportation & Circulation – Roads and Highways – Safety and Design of Public Roads*. Each of the Guidelines cumulative safety assessment criteria are presented below along with an evaluation to determine if the proposed project would have the potential to result in a safety impact based on the requirements of each criterion.

1. ***A project will have a potentially significant adverse cumulative traffic impact on any road segment if the affected road segment has been identified as experiencing a high incident rate.***

As described by the response for *Initial Study Assessment Guidelines* project-specific evaluation criterion No. 4, the State Route 150/Koenigstein Road intersection does not have a high incident rate. Therefore, the proposed project would not result in a significant cumulative traffic safety impact under Criterion No. 1.

2. ***A project that individually impacts an Public Road intersection so that the intersection exceeds any one of the traffic signal warrants established by the Manual for Uniform Traffic Control Devices, as supplemented and adopted by the State of California (MUTCD/CA) has the potential to cause a significant cumulative impact.***

As described by the response for *Initial Study Assessment Guidelines* project-specific evaluation criterion No. 2, and Table 4.2-9 above, the Agnew Lease project would not exceed signal warrants at the State Route 150/Koenigstein Road intersection under existing plus project or cumulative plus project traffic conditions. Therefore, the proposed project would not result in a significant cumulative traffic safety impact under Criterion No. 2.

3. ***A proposed project, along with past, present or probable future projects, that uses existing substandard public roads in the areas shown on the Substandard Impact Areas Vicinity, Upper Ojai Substandard Impact Area, Santa Susana Area Substandard Impact Area, Ventu Park Area Substandard Impact Area, Yerba Buena Area Substandard Impact Area, or the Santa Susana Knolls Area Substandard Impact Area Maps (see attachments) is considered to have cumulative impacts on the operational safety of the public road system in these areas.***

The Agnew Lease, Bentley, and Nesbitt oil well projects are not located in the Substandard Impact Areas identified above. Therefore, the project would not result in a significant cumulative traffic safety impact under Criterion No. 3.

4. ***A project will have a potentially significant adverse cumulative traffic impact to any unsignalized intersection on the Public Road System if the project-specific impacts, along with other past, present or probably future projects result in any of the warrants established by the MUTCD-CA being met.***

As described by the response for *Initial Study Assessment Guidelines* project-specific evaluation criterion No. 2, and Table 4.2-9 above, the Agnew Lease project would not exceed signal warrants at the State Route 150/Koenigstein Road intersection under existing plus project or cumulative plus project traffic conditions. Therefore, the proposed project would not result in a significant cumulative traffic safety impact under Criterion No. 4.

5. ***Any proposed project, along with other past, present or probably future projects, that causes impacts at any intersection that has been identified in the Substandard Impact Areas Vicinity, Upper Ojai Substandard Impact Area, Santa Susana Area Substandard Impact Area, Ventu Park Area Substandard Impact Area, Yerba Buena Area Substandard Impact Area, or the Santa Susana Knolls Area Substandard Impact Area Maps will also be considered cumulatively significant.***

The Agnew Lease, Bentley, and Nesbitt oil well projects are not located in the Substandard Impact Areas identified above. Therefore, the project would not result in a significant cumulative traffic safety impact under Criterion No. 5.

The risk of future accidents at the State Route 150/Koenigstein Road intersection cannot be eliminated, but based on the evaluation of traffic safety criteria included in the Ventura County *Initial Study Assessment Guidelines*, it could be concluded that the project would have a less than significant cumulative traffic safety impact. However, in the Writ of Mandate (RSEIR Appendix A) issued for the 2016 SEIR prepared for the proposed Agnew Lease project, the Court concluded that based on the previous traffic safety analysis included in the 1983 EIR prepared for the Agnew Lease project; the analysis included in the 2016 SEIR prepared for the proposed project, and comments on that EIR submitted by Caltrans; and testimony provided at the June 21, 2016 hearing before the Board certified the 2016 SEIR “...substantial evidence in the record supports only a conclusion under CEQA of significant traffic safety impacts at the intersection of the Koenigstein Road bridge and State Highway 150...” In recognition of the Court’s decision, this RSEIR has identified feasible traffic safety mitigation measures to minimize the potential for a significant adverse long-term traffic safety impact that may result from the continued use of the Koenigstein Road bridge over Sisar Creek by oil tanker trucks that serve the proposed project site and other nearby oil leases. The proposed mitigation measures require: a) the installation of truck crossing signs along State Route 150; and b) that project-related oil tanker trucks used for the routine operation of the project site shall only use the Koenigstein Road bridge during daylight hours. The proposed mitigation measures also require that Caltrans approve the design, location, and installation of the truck crossing sign. Based on: a) the impact analysis provided above; b) the number of oil lease serving tanker trucks using Koenigstein Road would not be increased when compared to baseline conditions; and c) additional feasible traffic safety measures would implemented by the proposed project, the potentially significant cumulative traffic safety impacts of the proposed Agnew Lease project can be reduced to a less than significant level (Class II).

4.2.5 Mitigation Measures

The impact analyses provided above indicate that the proposed project would not result in significant project-specific or cumulative traffic circulation (i.e., traffic volume) impacts. Therefore, no mitigation measures are required to reduce project-related circulation impacts to a less than significant level.

In recognition of the Court’s ruling regarding the 2016 SEIR prepared for the proposed project, the project would have the potential to result in a significant but mitigable (Class II) long-

term and cumulative traffic safety impact at the Koenigstein Road/State Route 150 intersection. This potential impact would be reduced to a less than significant level with the implementation of proposed mitigation measure TRAFFIC-1.

The analysis provided above concluded that the proposed project would not result in a potentially significant impact when a drill rig is moved onto or off of the project site. Implementation of the following condition of approval would further reduce potential short-term project-related safety impacts resulting from the use of oversized or heavy vehicles on County roadways, and minimize potential safety impacts that may result from project-related large vehicle (i.e., drilling rig) turning movements at the State Route 150/Koenigstein Road intersection. The following recommended condition of approval is not required to reduce the project's short-term construction impacts to a less than significant level.

Required Mitigation Measures

With the implementation of mitigation measure TRAFFIC-1, potentially significant project-specific and cumulative long-term traffic safety impacts at the State Route 150/Koenigstein Road intersection will be reduced to a less than significant level (Class II).

TRAFFIC-1. Tanker Truck Safety

Long-Term Traffic Safety

Purpose. To reduce to the extent feasible potential traffic safety hazards associated with project-related tanker truck turning movements at the State Route 150/Koenigstein Road intersection.

Requirements:

- a. Project-related oil tanker trucks used for the routine operation of the project site shall only travel through the State Route 150/Koenigstein Road intersection during daylight hours.
- b. The permittee shall install two “truck crossing” signs at locations along State Route 150 at appropriate sites east and west of the State Route 150/Koenigstein Road intersection. If feasible, the truck crossing signs shall be equipped with a flashing yellow solar-powered light that operates during daylight hours.

Documentation:

- a. The Permittee shall report to the County Planning Division any incidents (e.g., emergencies; accidents; excess accumulated oil, produced water, rainwater, etc.) that required large trucks to travel through the State Route 150/Koenigstein Road intersection during nighttime hours within two (2) days of the event.

- b. The Permittee shall provide to the County Transportation Department and Planning Division all approved plans and permits (e.g., a Caltrans-approved encroachment permit) required to install the required truck crossing warning signs. The project plans shall specify the approved sign locations and design characteristics.
- c. The permittee shall submit photo-documentation of the installation of the required truck crossing warning signs to the Planning Division within ten (10) days of sign installation.

Timing: The approved plans and permits for the truck crossing warning signs shall be submitted to the County Transportation Department and the County Planning Division prior to Zoning Clearance for use inauguration.

Monitoring and Reporting. The Planning Division shall review all reports of required nighttime use of the State Route 150/Koenigstein Road intersection by project-related tanker trucks to ensure the nighttime operations were consistent with applicable County requirements.

Recommended Condition of Approval

Trucks, Oversized Loads, and Traffic Control Plan Requirements

Purpose: To comply with County regulations on the use of oversized or heavy vehicles on County Roadways, and to minimize potential safety impacts that may result from project-related large vehicle (i.e., drilling rig) turning movements at the State Route 150/Koenigstein Road intersection. Oversized or heavy vehicles are any vehicles that require a Transportation Permit from the County.

Requirements:

- a. If required, the Permittee shall obtain a Transportation Permit from the County prior to the operation of any oversized vehicles on County roadways.
- b. Prior to moving a drilling rig onto or off of the project site, the Permittee shall prepare and implement a Traffic Control Plan for the State Route 150/Koenigstein Road intersection. At minimum the Traffic Control Plan shall include the use of warning signs and flagmen at State Route 150 and Koenigstein Road in the vicinity of the intersection. Also prior to moving a drilling rig onto or off of the project site, the Permittee shall obtain any Transportation Permit required by the California Department of Transportation (Caltrans) to authorize the transport of a drilling rig on State Route 150.

Documentation:

- a. The Permittee shall provide specifications (i.e., vehicle length and fluid hauling capacity) for each tanker truck to be used as part of production operations at the project site. The tanker truck that would be used to transport produced fluid from the project site must be

either a truck/trailer combination that is no more than 56 feet long and eight (8) feet wide; or a truck (without a trailer) that is no more than 24 feet long and eight (8) feet wide. Specifications for the tanker truck(s) to be used by the project shall be submitted to the County Transportation Department and the County Planning Division prior to Zoning Clearance for use inauguration.

- b. The Permittee shall provide specifications (i.e., overall vehicle height and length) for the drill rig to be used as part of the proposed oil drilling operations conducted at the project site. Drill rig specifications shall be submitted to the County Transportation Department and the County Planning Division prior to Zoning Clearance for construction of new or re-drilled wells.
- c. The Permittee shall submit a drilling rig Traffic Control Plan for the State Route 150/Koenigstein Road intersection to the County Transportation Department and County Planning Division for review and approval prior to Zoning Clearance for construction of new or re-drilled wells.

Timing. Transportation Permits required for drilling rigs shall be provided to the Planning Division prior to the issuance of the Zoning Clearance for construction of new or re-drilled wells.

Monitoring and Reporting. The County Transportation Department maintains a record of all Transportation Permits issued by the County. The Planning Division shall review any Transportation Permits submitted by the Permittee for adequacy. The Planning Division shall maintain copies of the Transportation Permits in the project file. County staff has the authority to inspect tanker truck and drilling rig operations, and to monitor the implementation of approved Traffic Control Plan requirements.

4.3 BIOLOGICAL RESOURCES

4.3.1 Background

The 1983 FEIR describes biological resource conditions at and near the project site prior to the implementation of the oil production operations authorized by CUP 3543. The EIR also identified the plant and animal species observed and expected to occur at and in the vicinity of the project site. As described by the 1983 FEIR, the project site is located near the southern boundary of the Los Padres National Forest, which provides extensive undisturbed wildlife habitat. The project site is located in an area that supports mature chaparral habitat that contains a variety of native plant species, such as chamise, laurel sumac, wild buckwheat, scrub oak, elderberry, toyon, squaw bush, and poison oak. Riparian habitat associated with an ephemeral stream in Bear Canyon is located approximately 400 feet east of the project site. Due the presence of relatively undisturbed habitat in the project area, the 1983 FEIR concluded that the project area provides high quality wildlife habitat that is likely used by a large number of large and small mammals, birds, reptiles, and invertebrates.

The portion of the existing well pad that would be used for the installation of the two proposed oil wells is devoid of vegetation. Sparse native vegetation is located around the perimeter of the well pad. Areas in the vicinity of the well pad recently burned during the Thomas Fire.

The 1983 FEIR's evaluation of potential impacts to biological resources resulting from the implementation of CUP 3543 concluded that the project would remove approximately two acres of native vegetation. Additional impacts to wildlife could result from a project-related increase in noise and human presence. However, these impacts would be less than significant because no rare or threatened plant or animal species were observed at or near the project site. The EIR acknowledged that the project site is within the flying range of the California condor, but is not a likely nesting or foraging area.

The 1983 FEIR identified one potentially significant impact that may result from the implementation of CUP 3543: the potential for wildlife to be harmed by open temporary sumps used to contain drilling fluids. A mitigation measure was identified by the FEIR requiring that sumps on the project site be fenced to exclude wildlife. A potential impact to wildlife resulting from the use of an on-site sump is no longer an issue associated with the proposed project because earthen sumps will not be used to contain drilling fluids. Instead, drilling fluids would be contained within temporary tanks located on the project site. Therefore, a "sump fencing" mitigation measure is no longer required.

4.3.2 Thresholds of Significance

The County's Threshold of Significance for biological resources includes the following criteria:

A project will have a direct or indirect physical impact to a plant or animal species if a project, directly or indirectly:

- (a) Reduces a species population
- (b) Reduces a species habitat
- (c) Increases habitat fragmentation
- (d) Restricts reproductive capacity

The determination of whether a project's impacts are significant or not shall be based on both the current conservation status of the species affected and the severity or intensity of impact caused by the project.

4.3.3 Impact Analysis

The proposed modification to CUP 3543 would result in the continued use of an existing two-acre well pad that includes three oil pumping units and related accessory facilities such as tanks, night lighting, a flare, and other related equipment. The portion of the existing well pad where the proposed oil wells would be located is devoid of vegetation and is extensively disturbed. Sparse native vegetation is located around the perimeter of the well pad. Overall, the project site provides no to very little habitat or foraging value. Access to the project site is provided by existing paved roads and a graded dirt driveway. No modifications to the access roads or driveway are proposed.

The proposed addition of two new oil wells (i.e. two new electrically-powered pumping units) to the existing well pad, and the re-drilling of an existing oil well, would not substantially change the use of the existing oil and gas production facility or the footprint of the existing well pad. The installation of two small concrete pads (approximately 300 square feet each) to support two new oil pumping units would not substantially increase stormwater runoff from the project site. Fluids produced during well construction and operation would be stored in enclosed tanks, which would minimize the potential for an accidental release of water and hazardous substances to surface water sources near the project. Therefore, the project would not adversely affect downstream water resources or associated habitat.

No other substantial alterations or grading would occur at the project site or along existing access roads, and the project would not result in additional nighttime lighting. Therefore, the project would not result in the removal or disturbance of existing vegetation or habitat, and would not adversely affect wildlife movement through the project area. Due to the minor changes to the existing oil and gas production facility that would result from the proposed project, it would not substantially reduce species population, reduce habitat area, or increase habitat fragmentation. Therefore, the proposed project would result in less than significant direct (i.e., removal) impacts to plants, wildlife, and sensitive habitats (Class III).

Drilling two new wells and the re-drilling of an existing well would increase short-term noise conditions at and near the project site. Proposed long-term operations at the project site

would not result in a substantial increase in existing noise conditions (see RSEIR Section 4.6, Noise). A short-term increase in noise conditions may have the potential to result in a significant impact to nesting birds located near the drilling pad, such as causing birds to abandon an active nest. Therefore, the project may have the potential to result in significant short-term impacts that restrict the reproductive capacity of birds that have active nests near the project site. This potential impact can be reduced to a less than significant level (Class II) with the implementation of a mitigation measure proposed by the 2016 SEIR, and that is included in this RSEIR as mitigation measure BIO-1. The mitigation measure requires that drilling activities be conducted outside the nesting season, or that pre-construction nest surveys be conducted prior to the start of drilling activities.

The project site is located approximately 2.6 miles west of the southwest corner of the California condor critical habitat area established by the United States Fish and Wildlife Service. Possible effects of oil and gas operations on California condor may include birds becoming entangled in machinery; ingesting fluids located at the project site; and feeding small items of trash (referred to as microtrash) to chicks, which can significantly reduce breeding success. (Walters, et al, 2008). Standard best management practices (BMP's) have been developed to minimize these types of potentially significant impacts to California condor. Proposed mitigation measures included in the 2016 SEIR identified these BMP's, and the previously proposed measures are included in this RSEIR as mitigation measures BIO-2 and BIO-3. With the implementation of the specified BMPs, potential impacts to California condor would be reduced to a less than significant level (Class II).

4.3.4 Cumulative Impacts

The proposed project would not result in any disturbance of native habitat as existing roads and an existing drill pad would be used. Other reasonably foreseeable development projects near the project site (i.e., project numbers 1-3 identified in Section 3.5, Cumulative Projects) would generally be located in previously developed areas and/or result in very small areas of project-related disturbance. Cumulative oil and gas production projects identified in Section 3.5 would not result in substantial disturbances to native habitat areas. The Bently (PL15-0187) project would result in the expanded use of a gas flare and would not result in habitat removal or disturbance; the Harth project (PL15-0060) would result in the development of nine new oil and gas well and the use of two existing wells on the existing Harth well pad; and the Nesbitt project (also PL15-0060) would result in the reactivation of two existing wells. Given that the identified cumulative oil well projects would be located on existing well pads; that the proposed Agnew lease project would not affect native habitat; and that identified mitigation measures would reduce impacts to nesting birds and California condor to less than significant levels, the proposed project would not result in a cumulatively considerable contribution to a cumulative impact on biological resources and its cumulative biological resource impacts would be less than significant (Class III).

4.3.5 Mitigation Measures

With the implementation of mitigation measures BIO-1, BIO-2 and BIO-3, potentially significant project-specific impacts on nesting birds and California condor will be reduced to a less than significant level (Class II).

BIO-1. Avoidance of Nesting Birds

Purpose. To prevent impacts to birds protected under the Migratory Bird Treaty Act, land clearing and construction activities shall be regulated.

Requirement. The Permittee shall conduct all demolition, tree removal/trimming, vegetation clearing, and grading activities (collectively, “land clearing activities”), and construction in such a way as to avoid nesting native birds. This can be accomplished by implementing one of the following options:

- a. Timing of land clearing or construction: Prohibit land clearing or construction activities during the breeding and nesting season (February 1 – September 1), in which case the following surveys are not required; or
- b. Surveys and avoidance of occupied nests: Conduct site-specific surveys prior to land clearing or construction activities during the breeding and nesting season (February 1 – September 1) and avoid occupied bird nests. A County-approved biologist shall conduct surveys to identify any occupied (active) bird nests in the area proposed for disturbance. Occupied nests shall be avoided until juvenile birds have vacated the nest.

The County-approved biologist shall conduct an initial breeding and nesting bird survey 30 days prior to the initiation of land clearing or construction activities. The County-approved biologist shall continue to survey the Project site on a weekly basis, with the last survey completed no more than 3 days prior to the initiation of land clearing activities. The nesting bird survey must cover the development footprint and 300 feet from the development footprint. If occupied (active) nests are found, land clearing activities within a setback area surrounding the nest shall be postponed or halted. Land clearing activities may commence in the setback area when the nest is vacated (juveniles have fledged) provided that there is no evidence of a second attempt at nesting, as determined by the County-approved biologist. Land clearing activities can also occur outside of the setback areas. Pursuant to the recommendations of the California Department of Fish and Wildlife, the required setback is 300 feet for most birds and 500 feet for raptors. This setback can be increased or decreased based on the recommendation of the County-approved biologist and approval from the Planning Division.

Documentation. The Permittee shall provide to the Planning Division a Survey Report from a County-approved biologist documenting the results of the initial nesting bird survey and a

plan for continued surveys and avoidance of nests in accordance with the requirements set forth in this condition (above). Along with the Survey Report, the Permittee shall provide a copy of a signed contract (financial information redacted) with a County-approved biologist responsible for the surveys, monitoring of any occupied nests discovered, and establishment of mandatory setback areas. The Permittee shall submit to the Planning Division a Mitigation Monitoring Report from a County-approved biologist following land clearing activities documenting actions taken to avoid nesting birds and results.

Timing. If land clearing or construction activities will occur between February 1 – September 1, the County-approved biologist shall conduct the nesting bird surveys 30 days prior to initiation of land clearing or construction activities, and weekly thereafter. The last survey for nesting birds shall be conducted no more than 3 days prior to initiation of land clearing or construction activities. The Permittee shall submit the Survey Report documenting the results of the first nesting bird survey and the signed contract to the Planning Division prior to issuance of a zoning clearance for construction. The Permittee shall submit the Mitigation Monitoring Report within 14 days of completion of the land clearing or construction activities.

Monitoring and Reporting. The Planning Division reviews the Survey Report and signed contract for adequacy prior to issuance of a Zoning Clearance for construction. The Planning Division maintains copies of the signed contract, Survey Report, and Mitigation Monitoring Report in the Project file.

BIO-2. California Condor Protection BMPs

Purpose. To minimize potentially significant effects during construction and operation and ensure compatibility with conservation efforts outlined in the *Recovery Plan for California Condor* (April 19, 1996), and direction provided by United States Fish and Wildlife Service (USFWS) for oil and gas facilities within the range of the California Condor in Ventura County (USFWS, 2013).

Requirement. During construction and operation, the Permittee shall adhere to the following USFWS California condor Best Management Practices (BMPs):

Landing Deterrents

- a. All power lines, poles, and guy wires shall be retrofitted with raptor guards, flight diverters, and other anti-perching or anti-collision devices to minimize the potential for collision or electrocution of condors. Landing deterrents (e.g. Daddi Long Legs or porcupine wire) shall be attached to the walking beams on pumping units.
- b. All surface structures that are identified by the USFWS or County-approved qualified biologists as a risk to California condors, shall be modified (e.g. to include installation of raptor guards, anti-perching devices, landing deterrents) or relocated to reduce or eliminate the risk.

Microtrash

- c. All construction debris, food items, and other trash including micro-trash (e.g. small items as screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass, or wire, and anything that is colorful or shiny) will be covered or otherwise removed from a project site at the end of each day or prior to periods when workers are not present at the site.
- d. All hoses or cords that must be placed on the ground due to drilling operations that are outside of the primary work area (immediate vicinity of the drilling rig) will be covered to prevent California condor access. Covering will take the form of burying or covering with heavy mats, planks, or grating that will preclude access by California condors.
- e. All equipment and work-related materials (including, but not limited to, loose wires, open containers, rags, hoses, or other supplies or materials) shall be contained in closed containers either in the work area or placed inside vehicles.
- f. Poly chemical lines shall be replaced with stainless steel lines to preclude condors from obtaining and ingesting pieces of poly line.
- g. Prior to issuance of a Zoning Clearance for drilling activities or construction, informational signs describing the threat that micro-trash poses to condors, and the cleanup or avoidance measures being implemented, shall be posted at the site.
- h. Prior to conducting work on-site, employees and contractors shall be made aware of the California condor, and how to avoid impacts on them. Special emphasis shall be placed on keeping the well pad site free of micro-trash and other hazards.
- i. Wells pads shall be inspected closely for micro-trash on a daily basis.

Chemicals

- j. Ethylene glycol based anti-freeze or other ethylene glycol based liquid substances shall be avoided, and propylene glycol based antifreeze will be encouraged. Equipment or vehicles that use ethylene glycol based anti-freeze or other ethylene glycol based liquid substances shall be inspected daily for leaks, including (but not limited to) areas below vehicles for leaks and puddles. Standing fluid (e.g. a puddle of anti-freeze) will be remediated (e.g. cleaned up, absorbed, or covered) immediately upon discovery. Leaks shall be repaired immediately. The changing of antifreeze of any type shall be prohibited onsite.
- k. Open drilling mud, water, oil, or other liquid storage or retention structures shall be prohibited. All such structures must have netting or other covering that precludes entry or other use by condors or other listed avian species.

1. The design and location of any flaring equipment shall subject to review and approval by the Planning Director in consultation with the US Fish and Wildlife Service.

The Permittee shall implement the BMPs listed above throughout the entire life of the project, unless waived by USFWS or a County-approved qualified biologist in consultation with USFWS, California Department of Fish and Wildlife (CDFW), and the Planning Division. A County-approved qualified biologist shall confirm and photo-document the installation of the BMPs.

Documentation. The application shall prepare photo documentation of the complete installation of the signage and above BMPs.

Timing. Prior to the issuance of a Zoning Clearance for drilling activities, the Permittee must take the following actions:

- Install signage.
- Submit photo-documentation of the installation of the signage to the Planning Division.

Prior issuance of a Zoning Clearance for construction (i.e. the Zoning Clearance for the drilling of first well), the Permittee must provide the Planning Division with photo documentation of the implementation of the above requirements.

Monitoring and Reporting. Planning Division staff will review the submitted reports. The Planning Division has the authority to conduct site inspections to ensure ongoing compliance with this condition consistent with the requirements of § 8114-3 of the *Ventura County Non-Coastal Zoning Ordinance*.

BIO-3. Additional California Condor Protection BMPs

Purpose. To minimize potential adverse effects during construction and operation and ensure compatibility with conservation efforts outlined in the *Recovery Plan for California Condor* (April 19, 1996) and direction provided by United States Fish and Wildlife Service (USFWS) for oil and gas facilities within the range of the California Condor in Ventura County (USFWS, 2013).

Requirement. During construction and operation, the Permittee shall adhere to the following additional USFWS recommended California condor Best Management Practices (BMPs):

- a. All food items and associated refuse shall be placed in covered containers that preclude access or use by California condors.

- b. All equipment and work-related materials (including loose wires, open containers, rags, hoses, or other supplies) will be placed in closed containers or inside vehicles.
- c. No dogs or other potentially predatory domesticated animals shall be allowed on the drill site unless on a leash or otherwise contained at all times.
- d. All construction equipment, staging areas, materials, and personnel shall remain within the perimeter of the disturbed area authorized under the applicable permit.
- e. The discharge of firearms at the project site or vicinity by any employee or contractor of the Permittee shall be prohibited.
- f. Feeding of wildlife by any employee or contractor of the Permittee shall be prohibited.
- g. Access to the project site shall be made available to the representatives of the State and Federal wildlife agencies (California Department of Fish and Wildlife, U.S. Fish and Wildlife Service) upon reasonable notice to the Permittee and compliance with all required drill site safety measures. Access to the site shall be provided within 24 hours of the receipt of the notice.

The Permittee shall implement the BMPs listed above throughout the entire life of the project, unless waived by USFWS or a County-approved qualified biologist in consultation with USFWS, California Department of Fish and Wildlife (CDFW), and the Planning Division. A County-approved qualified biologist shall confirm and photo-document the installation of the BMPs. The Permittee shall place signage on the project site to inform personnel and visitors of the above requirements.

Documentation. The application shall prepare photo documentation of the complete installation of the signage and implementation of the above BMPs.

Timing. Prior to the issuance of a Zoning Clearance for drilling activities, the Permittee must take the following actions:

- Install signage.
- Submit photo-documentation of the installation of the signage to the Planning Division.

Prior issuance of a Zoning Clearance for Use Inauguration (i.e. the Zoning Clearance for the drilling of first well), the Permittee must provide the Planning Division with photo documentation of the implementation of the above requirements.

Monitoring and Reporting. Planning Division staff will review the submitted reports. The Planning Division has the authority to conduct site inspections to ensure ongoing compliance

with this condition consistent with the requirements of § 8114-3 of the *Ventura County Non-Coastal Zoning Ordinance*.

4.4 CLIMATE CHANGE

4.4.1 Background

Causes and Effects of Climate Change. Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. The term "climate change" is often used interchangeably with the term "global warming," but "climate change" is preferred because it indicates that there are other related effects in addition to rising temperatures. The baseline against which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate is continuously changing, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming during the past 150 years. As reported by the United Nations Intergovernmental Panel on Climate Change (IPCC, 2007), the understanding of anthropogenic warming and cooling influences on climate has led to a high confidence that the global average net effect of human activities since 1750 has been one of warming. The prevailing scientific opinion on climate change is that most of the observed increase in global average temperatures since the mid-20th century is likely due to the observed increase in anthropogenic greenhouse gas (GHG) concentrations (IPCC, 2007).

Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHGs). GHGs are 1) present in the atmosphere naturally, 2) are released by natural sources, or 3) are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO₂), methane (CH₄), nitrous oxides (N₂O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

GHGs are emitted by both natural processes and human activities. Of these gases, CO₂ and CH₄ are emitted in the greatest quantities from human activities. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas CH₄ results from off-gassing associated with agricultural practices and landfills. Man-made GHGs, many of which have greater heat-absorption potential than CO₂, include fluorinated gases and sulfur hexafluoride (SF₆). Different types of GHGs have varying global warming potentials (GWPs). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO₂) is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as "carbon dioxide equivalent" (CO₂E), and is the amount of a GHG emitted multiplied by its GWP. Carbon dioxide

has a GWP of one. By contrast, CH₄ has a GWP of 21, meaning its global warming effect is 21 times greater than carbon dioxide on a molecule per molecule basis.

There is a substantial body of scientific evidence that climate change is occurring due to an increase in the concentration of greenhouse gases in the Earth's atmosphere. California's Fourth Climate Change Assessment (2018) summarizes the current understanding of climate impacts in California. The Assessment concludes that there is very high scientific confidence that temperatures in the State are warming and snow pack is declining; and there is very high scientific evidence that sea levels are rising. There is also medium-high confidence that the number of heavy precipitation events, the occurrence of drought, and area burned by wildfire is increasing.

Regulatory Framework

A brief summary of some of the legislation that addresses both climate change and greenhouse gas emissions is provided below.

International Authority. The foremost international climate change initiative is the United Nations Framework Convention on Climate Change (UNFCCC), commonly known as the Kyoto Protocol. Signed on March 21, 1994, the Kyoto Protocol calls for governments to gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change. There have been several international summits since Kyoto, that seek to advance climate change goals and programs.

At the 2015 United Nations Climate Change Conference in Paris, a global agreement was initiated that represented a consensus of the representatives of the 196 parties in attendance. On April 22, 2016 (Earth Day), 174 countries signed the Paris Agreement in New York, and began adopting it within their own legal systems. As of November 2016, 193 United Nations Climate Change Conference members have signed the agreement, 114 of which have ratified it.

Federal Authority. On September 22, 2009, the USEPA released its final GHG Reporting Rule (Reporting Rule), in response to the fiscal year 2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110-161) that required the USEPA to develop "... mandatory reporting of GHGs above appropriate thresholds in all sectors of the economy". The Reporting Rule applies to most entities that emit 25,000 metric tons (MT) CO₂e or more per year. On September 30, 2011, facility owners were required to submit an annual GHG emissions report with detailed calculations of facility GHG emissions. The Reporting Rule mandates recordkeeping and administrative requirements for the USEPA to verify annual GHG emissions reports but does not regulate GHG as a pollutant.

The Clean Air Act defines the USEPA's responsibilities for protecting and improving the nation's air quality and the stratospheric ozone layer. On May 13, 2010, USEPA set greenhouse gas emissions thresholds to define when permits under the New Source Review Prevention of

Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule "tailors" the requirements of these CAA permitting programs to limit covered facilities to the nation's largest greenhouse gas emitters: power plants, refineries, and cement production facilities.

California Regulations and Programs. California climate change regulations most applicable to the proposed project are summarized below.

Executive Order S-3-05. This Executive Order provides that by 2010, emissions of greenhouse gases shall be reduced to 2000 levels; by 2020, emissions shall be reduced to 1990 levels; and by 2050, emissions shall be reduced to 80 percent of 1990 levels.

Assembly Bill 32. The California Global Warming Solutions Act of 2006 (AB 32) requires the California Air Resources Board to adopt regulations to evaluate statewide greenhouse gas emissions, and then create a program and emission caps to limit statewide emissions to 1990 levels. The program is to be implemented in a manner that achieves emissions compliance by 2020. AB 32 did not directly amend CEQA or other environmental laws, but it did acknowledge that emissions of greenhouse gases cause significant adverse impacts to human health and the environment.

Senate Bill (SB) 97. Signed in August 2007, this bill acknowledged that climate change is an environmental issue that requires analysis in California Environmental Quality Act (CEQA) documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts.

Executive Order B-30-15. This order was signed by Governor Brown in April 2015 and established a greenhouse gas reduction target of 40 percent below 1990 levels by 2030. The order also directed state agencies with jurisdiction of greenhouse gas emission sources to implement measures to achieve the interim 2030 goal, as well as the existing 2050 goal established by Executive Order S-3-05.

Senate Bill 32. This bill was signed in 2016 and established a greenhouse gas emissions reductions target of at least 40 percent below 1990 levels by 2030.

Executive Order B-55-18. This executive order established a statewide goal to achieve carbon neutrality as soon as possible and no later than 2045.

Scoping Plans. In June 2008, the California Air Resources Board (CARB) developed a Draft Scoping Plan for Climate Change, pursuant to AB-32. The Scoping Plan was approved on December 12, 2008. The Scoping Plan proposed a comprehensive set of actions designed to reduce overall carbon emissions in California, improve our environment, reduce dependence on oil,

diversify energy sources, save energy, and enhance public health while creating new jobs and enhancing the growth in California's economy. The Climate Change Scoping Plan was updated in May 2014, and confirmed that California is on target for meeting the 2020 greenhouse gas emissions reduction goal. On December 14, 2017, CARB approved the 2017 Final Scoping Plan Update. The Plan outlines CARB's programs to achieve a 40 percent reduction in greenhouse gas emissions from 1990 levels by 2030, as required by the passage of SB 32 in 2017.

4.4.2 Thresholds of Significance

According to the CEQA Guidelines, impacts related to greenhouse gas emissions would be significant if a project would:

- a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The *Ventura County Air Quality Assessment Guidelines* (2003) have not yet been updated to include a significance threshold for greenhouse gas emissions. The Ventura County Air Pollution Control District (VCAPCD) has used the South Coast Air Quality Management District's (SCAQMD) threshold for greenhouse gas emission from industrial projects, as presented in Table 4.4-1.

**Table 4.4-1
Greenhouse Gas Significance Threshold**

Source	CO ₂ e (MT/yr.) ¹
All Project Sources	10,000

1 – Metric tons per year of carbon dioxide equivalent emissions

4.4.3 Impact Analysis

Emissions of greenhouse gases that would result from the operation of the Agnew Lease project (the previous proposal to drill three new wells on the project site) were previously evaluated in the 2016 SEIR. That evaluation utilized emission factors from a 2015 VCAPCD evaluation of greenhouse gas emissions for another oilfield project that proposed to drill 19 new oil wells. The 2016 SEIR evaluation determined:

- A project has a cumulatively considerable impact on global climate change if it would cause an increase in GHG emissions in excess of 10,000 metric tons of CO₂e (MTCO₂e) per year.

- The proposed project would result in annual direct and indirect greenhouse gas emissions of 1,196 MTCO₂e per year, which is well below the 10,000 metric tons of CO₂e per year significance threshold

The 2016 SEIR evaluation of project-related greenhouse gas emissions did not include an evaluation of short-term construction emissions. Estimates of the proposed project's total construction-related emissions of greenhouse gases are summarized in Table 4.4-2 and are based on emission data included in the project's air quality analysis (Sespe, 2019), which is provided as RSEIR Appendix B. Following the SCAQMD recommended methodology, the total estimated project-related construction emissions are amortized over the proposed 25-year life of the project, resulting in an annualized emission rate of 6.99 metric tons of CO₂ equivalents per year.

**Table 4.4-2
Construction-Related Greenhouse Gas Emissions**

Source	CO₂e (MT/yr.)
Transportation of Drilling Rig to the Project Site	0.039
Fuel Based Emissions (drilling rig operation for 10 days)	43.67
Drilling Emissions for one well	43.71
Drilling Emissions for four wells (1)	174.84
Annualized Emissions of 25 years	6.99

(1) The currently proposed project would only drill two new wells and re-drill one new well. Actual annualized project-related construction emissions of greenhouse gases would be lower than 6.99 metric tons per year.

The combined short- and long-term project-related emissions of greenhouse gases would result in total annual emissions of approximately 1.203 metric tons of CO₂ equivalents per year (1,196 MTCO₂e + 6.99 MTCO₂e), which remains well below the significance threshold of 10,000 metric tons per year. Therefore, the proposed project would result in a less than significant (Class III) climate change impact.

4.5.4 Cumulative Impacts

The greenhouse gas threshold of 10,000 metric tons of CO₂ equivalents per year is a numeric emissions level below which a project's contribution to global climate change would be less than cumulatively considerable. Therefore, the project would result in a less than significant (Class III) cumulative climate change impact.

4.5.5 Mitigation Measures

The proposed project would not result in significant project-specific or cumulative climate change impacts and no mitigation measures are required.

4.5 WATER RESOURCES

4.5.1 Background

Sisar Creek is located approximately 1,800 feet west and 2,800 feet south of the project site. Sisar Creek originates in the Topatopa Mountains north of the project site, and the creek flows into Santa Paula Creek approximately two miles east of the project site. Sisar Creek is an ephemeral stream, meaning it has long periods with little or no flow, and short periods of flow in response to storm events. A smaller ephemeral stream in Bear Canyon is located approximately 300 feet east of the project site.

The 1983 Final EIR determined that the previously proposed oil production project at the project site would have the potential to result in impact to groundwater quality resulting from the use of a sump to contain drilling fluids. The currently proposed project would not rely on the use of a sump to contain drilling fluids. All project-generated waste materials and other pollutants would be managed consistent with the requirements of Section 8107-5.6.4 of the *Ventura County Non-Coastal Zoning Ordinance*, which requires that such materials be contained on-site in a manner that prevents them from reaching surface or subsurface waters. This standard is typically achieved by implementing best management practices such as storing produced fluids in above ground tanks, providing secondary containment berms around fluid storage tanks, and conducting regular inspections of the project site facilities including storage tanks, pipelines, and containment berms.

4.5.2 Thresholds of Significance

Groundwater Quantity

Any land use or project which would result in 1.0 acre-feet, or less, of net annual increase in groundwater extraction is not considered to have a significant project or cumulative impact on groundwater quantity.

Surface Water Quantity

Any project-related reduction in surface flow that would substantially reduce the potential for the affected waterbody to support identified beneficial uses is considered a significant impact.

Groundwater Quality

Any project-related exceedance of the water quality objectives of the Water Quality Control Plan is considered a significant impact. By complying with this Plan, it is expected that groundwater is protected for designated beneficial uses.

Surface Water Quality

Any land use or project proposal that would individually or cumulatively degrade surface water quality causing an exceedance of the water quality objectives of the Water Quality Control Plan is considered to have a significant impact.

The Los Angeles Region Water Quality Control Plan (Basin Plan) is intended to preserve and enhance water quality and protect the beneficial uses of all regional waters. The Basin Plan identifies beneficial uses for water bodies, including Sisar Creek, which is located adjacent to the project site. Beneficial uses identified for Sisar creek include agricultural and industrial uses, groundwater recharge, and various habitat- and biological resource-related uses.

4.5.3 Impact Analysis

Water Quantity

It is estimated that approximately 3,500 barrels (147,000 gallons) of water would be required to drill each of the two proposed oil wells, and to re-drill one of the existing oil wells located on the project site. Water used to drill and re-drill oil wells on the project site would be supplied by using groundwater. The proposed project would not result in a demand for surface water resources. In total, approximately 10,500 barrels (441,000 gallons) would be required for proposed oil well drilling and re-drilling operations. In addition, approximately 20,000 gallons of water would be temporarily stored on-site for fire suppression purposes during drilling operations. Therefore, a total of approximately 461,000 gallons, or 1.41 acre feet of groundwater would be used for well construction purposes.

Amortized over the proposed project's requested 25-year operation period, it is estimated that the project would use approximately 0.06 acre feet of groundwater per year. The project would not result in a substantial long-term demand of groundwater for oil well operations. Therefore, the proposed project's groundwater use over the requested 25 year operation period would be substantially below the 1.0 acre foot per year impact significance threshold, and the project would result in a less than significant (Class III) groundwater use impact.

Water Quality

As described in Section 4.5.1 above, Section 8107-5.6.4 of the *Ventura County Non-Coastal Zoning Ordinance* requires that that all project-generated waste materials and other pollutants be contained on-site in a manner that prevents them from reaching surface or subsurface waters. In addition to local oil well drilling and operation requirements, the proposed oil wells must be constructed and operated in accordance with established engineering standards enforced by the California Division of Oil and Gas and Geothermal Resources (DOGGR). These standards include requirements related to oil well construction, leak detection, corrosion prevention and

testing, tank inspection and cleaning, valve and gauge maintenance, secondary containment maintenance, and other facility maintenance.

The proposed well sites would be surrounded by a low earthen berm (i.e., secondary containment) that is designed to retain oil, contaminated water, or other substances that may be accidentally released at the project site. This berm would reduce the likelihood of such substances that may be accidentally released from contaminating surface water resources located adjacent to the project site. Additionally the project's existing Spill Prevention Control and Countermeasure Plan (SPCC), which describes procedures, methods and equipment to assist in preventing the accidental discharge of oil and other oil-containing substances, would be updated, approved, and submitted to DOGGR. The project would also be required to implement the requirements of an approved Construction Storm Water Pollution Prevention Plan.

Existing regulatory requirements for the construction and operation of oil wells have successfully prevented groundwater quality impacts that could result from well leakage and the contamination of water bearing geologic formations. Existing regulations also substantially reduce the potential for oil drilling operations to result in a release of hazardous materials that may adversely affect the quality of surface water sources. As a result, the proposed project has a low potential to result in significant impacts to the beneficial uses of Sisar Creek or other surface waters located in the project area. Therefore, the proposed project's potential water quality-related impacts would be less than significant (Class III).

Stormwater Drainage

The project site is a relatively level graded dirt pad that is approximately two acres in size. The proposed project would not increase the size of the well pad, but would result in the construction of two small concrete pads that would support the proposed oil well pumping units. Each concrete pad would be approximately 300 square feet in size. The addition of approximately 600 square feet of impervious surface area to the two-acre well pad would not substantially alter existing stormwater runoff conditions at the project site. Therefore, the proposed project's stormwater runoff impacts would be less than significant (Class III).

4.5.4 Cumulative Impacts

The proposed project would not result in significant water quantity or quality impacts, or substantially change existing stormwater runoff conditions. Other reasonably foreseeable development projects near the project site would not be potentially significant sources of substances that may result in significant ground or surface water quality impacts; would be required to implement best management practices to contain fluids at the project sites; result in a substantial demand for groundwater resources; or result substantial increases in stormwater runoff. Therefore, the proposed project would not result in a cumulatively considerable contribution to future surface or ground water resource impacts and its cumulative water resource impacts would not be significant (Class III).

4.5.5 Mitigation Measures

The proposed project would not result in significant project-specific or cumulative water resource impacts and no mitigation measures are required.

4.6 NOISE

4.6.1 Background

Characteristics of Noise

Noise is generally defined as unwanted sound. Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels to be consistent with that of human hearing response. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time. Typically, Leq is summed over a one-hour period.

Because of the nature of the human ear, a sound must be about 10 dB greater than a reference sound to be judged as twice as loud. In general, a 3 dBA change in community noise levels is noticeable, while 1-2 dBA changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40 to 50 dBA, while those along arterial streets are in the 50 to 60+ dBA range. Normal conversational levels are in the 60-65 dBA range.

The time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than noise that occurs during the day. The Community Noise Equivalent Level (CNEL) is a measure of the cumulative noise exposure in a community, and consists of a weighted average of the hourly Leqs over a 24-hour period. The weighting includes a 5 dB penalty added to evening (7 p.m. to 10 p.m.) and a 10 dB addition to nocturnal (10 p.m. to 7 a.m.) noise levels to account for the greater disturbance associated with noise during these periods.

Existing Noise Conditions

Existing noise sources at the project site include the operation of three oil wells. The oil well pumping units operate using electric motors and are not a substantial noise source. Noise measurements were taken in the vicinity of the project site (Sespe Consulting, 2013; SEIR Attachment B, Appendix C), which indicate that the project area has low ambient noise conditions. Measured noise levels in the vicinity of the project site are summarized on Table 4.6-1.

Table 4.6-1
Project Area Ambient Noise Levels (dBA)

Parameter	Day 6 a.m. to 7 p.m.	Evening 7 p.m. to 10 p.m.	Night 10 p.m. to 6 a.m.	Overall
Average Noise Level (Leq)	47.5	38.1	38.1	45.2
Peak Hour Noise Level (Leq1H)	51.5	46.6	45.0	51.5

Source: Sespe Consulting, 2013

Koenigstein Road is the local road that provides access to the project site. Recent traffic counts (ATE, 2019; RSEIR Appendix C) indicate that 200 average daily vehicle trips occur on Koenigstein Road. Existing traffic on Koenigstein Road results in an average traffic noise level of approximately 44.5 dBA CNEL at a distance of 50 feet from the center of the road.

4.3.2 Thresholds of Significance

The adopted threshold of significance for noise impacts is found in Policy 2.16.2 of the County General Plan. The relevant sections of this policy are provided below.

- (4) Noise generators, proposed to be located near any noise sensitive use, shall incorporate noise control measures so that ongoing outdoor noise levels received by the noise sensitive receptor, measured at the exterior wall of the building, does not exceed any of the following standards:
- a. Leq1H of 55dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 6:00 a.m. to 7:00 p.m.
 - b. Leq1H of 50dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 7:00 p.m. to 10:00 p.m.
 - c. Leq1H of 45dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 10:00 p.m. to 6:00 a.m.

Section 2.16.2(4) is not applicable to increased traffic noise along any of the roads identified within the 2020 Regional Roadway Network (Figure 4.2.3) Public Facilities Appendix of the Ventura County General Plan (see 2.16.2-1(1)). In addition, State and Federal highways, all railroad line operations, aircraft in flight, and public utility facilities are noise generators having Federal and State regulations that preempt local regulations.

- (5) Construction noise shall be evaluated and, if necessary, mitigated in accordance with the County Construction Noise Threshold Criteria and Control Plan.

The *County Construction Noise Threshold Criteria and Control Plan* establishes the following threshold limits for construction noise.

**Table 4.6-2
Construction Noise Thresholds of Significance**

Daytime Construction Activity		
Construction duration	Noise threshold shall be the greater of these noise levels at the nearest receptor area or 10 feet from the nearest noise-sensitive building	
	Fixed Leq(h), dBA	Hourly Equivalent Noise Level (Leq), dBA
0 to 3 days	75	Ambient Leq(h) + 3 dB
4 to 7 days	70	Ambient Leq(h) + 3 dB
1 to 2 weeks	65	Ambient Leq(h) + 3 dB
2 to 8 weeks	60	Ambient Leq(h) + 3 dB
Longer than 8 weeks	55	Ambient Leq(h) + 3 dB
Evening Construction Activity		
Receptor Location	Evening noise threshold shall be the greater of these noise levels at the nearest receptor area or 10 feet from the nearest noise-sensitive building	
	Fixed Leq(h), dBA	Hourly equivalent Noise Level (Leq), dBA
Residential	50	Ambient Leq(h) + 3 dB
Nighttime Construction Activity		
Receptor Location	Evening noise threshold shall be the greater of these noise levels at the nearest receptor area or 10 feet from the nearest noise-sensitive building	
	Fixed Leq(h), dBA	Hourly equivalent Noise Level (Leq), dBA
Resident, Live-in Institutional	45	Ambient Leq(h) + 3 dB

Sec. 8107-5.6.13 of the County Non-Coastal Zoning Ordinance provides noise standards applicable to oil and gas production operations. The section states that drilling, production, and maintenance operations associated with an approved oil permit shall not produce noise, measured at a point outside of occupied sensitive uses such as residences, schools, health care facilities, or places of public assembly, that exceeds the following standards. The maximum allowable average sound levels are shown on Table 4.6-3.

**Table 4.6-3
One Hour Average Noise Levels (Leq)**

Time Period	Drilling and Maintenance Phase	Production Phase
Day (6:00 a.m. to 7:00 p.m.)	55 dB(A)	45 dB(A)
Evening (7:00 p.m. to 10:00 p.m.)	50 dB(A)	40 dB(A)
Night (10:00 p.m. to 6:00 a.m.)	45 dB(A)	40 dB(A)

4.6.3 Impact Analysis

Short-Term Noise Impacts

Drilling Operation Noise. Potential short-term noise impacts resulting from the drilling and re-drilling of proposed oil and gas wells at the project site were evaluated by a noise impact assessment (Sespe Consulting, 2013). The assessment evaluated noise impacts resulting from the operation of a drill rig at the project site and estimated drilling-related noise levels at three receptor sites located nearest to the project site. Drill rig operations were estimated to result in a noise level of 85 dBA at a location 50 feet from the drill rig. Noise receptor No.1 is located approximately 950 feet east of the project site; noise receptor No. 2 is approximately 985 feet to the southwest; and receptor No. 3 is approximately 885 feet to the south. No new noise receptors located closer to the project site have been developed since the noise impact assessment was prepared in 2013. Estimated noise levels from proposed drilling operations at the identified sensitive receptor locations are summarized on Table 4.6-4. Drilling operations for each proposed well would be conducted over a period of approximately two weeks and on a 24-hour basis. Since drilling operations would occur at night, the nighttime (10:00 p.m. to 6:00 a.m.) threshold of significance was used for the impact analysis. As depicted on Table 4.6-4, the proposed drilling operations would result in a significant short-term (approximately two weeks for each proposed well) noise impact at receptor sites 2 and 3.

**Table 4.6-4
Drilling Noise Impacts**

Receptor	Estimated Drilling Noise at Receptor (dBA)	Drilling Noise Threshold of Significance (dBA)	Significant Impact? (Yes/No)
Receptor 1	44.4	45	No
Receptor 2	54.9	45	Yes
Receptor 3	55.0	45	Yes

Source: Sespe Consulting, 2013

The noise impact assessment identified a mitigation measure that would reduce drilling-related noise impacts at Receptors 2 and 3 to a less than significant level. Noise mitigation measure NOI-1 requires the installation of a temporary noise barrier at the project site. The required barrier

is expected to provide at least 10 dBA of noise attenuation at Receptors 2 and 3. The estimated noise conditions at the receptor sites after the installation of a noise barrier is summarized on Table 4.6-5. With the implementation of the noise attenuation requirements identified by mitigation measure NOI-1, potential short-term drilling noise impacts to nearby receptors would be reduced to a less than significant level (Class II).

**Table 4.6-5
Mitigated Drilling Noise Impacts**

Receptor	Unmitigated Noise at Receptor (dBA)	Mitigated Noise Impact (dBA)	Drilling Noise Threshold of Significance (dBA)	Significant Impact? (Yes/No)
Receptor 1	44.4	34.4	45	No
Receptor 2	54.9	Less than 44.9	45	No
Receptor 3	55.0	Less than 45.0	45	No

Source: Sespe Consulting, 2013

Construction Traffic Noise. Another project-related temporary noise source would be construction/drilling vehicle traffic on Koenigstein Road between Highway 150 and the project site. The arrival and departure of temporary drilling rig equipment and personnel would involve up to 40 vehicle trips per day, and drilling operations for each well are expected to occur over a period of approximately two weeks. With the addition of temporary construction-related traffic, it is estimated that average daily traffic on Koenigstein Road would increase from 200 trips to approximately 240 trips. With the addition of project-related construction traffic, noise levels along Koenigstein Road at a location 50 feet from the center of the road would increase from 44.5 dBA CNEL to 45.3 dBA CNEL. The short-term, project-related increase in traffic along Koenigstein Road would be less than one decibel, which would generally not be perceptible to receptors located adjacent to the roadway. Therefore, short duration (approximately two weeks for each well) noise increases resulting from well construction-related traffic would be less than significant (Class III).

Long-Term Impacts

Production Operation Noise. As shown on Table 4.6-1, peak daytime noise conditions in the vicinity of the project site were measured to be 51.5 dBA, and peak nighttime noise levels were measured to be 45.0 dBA. For this analysis, it was assumed that the operation of the three existing oil well pumping units at the project site was the predominant noise source that was measured.

Noise is measured using a logarithmic scale, therefore, a doubling of sound energy will result in a measured noise level increase of three decibels. The proposed project would not double the number of electric-powered pumps operating on the project site (i.e., there are three existing pumps and if the project is fully implemented there would be five pumps). Therefore, upon full buildout of the project, existing peak daytime and nighttime noise conditions at the project site would be increased by less than three decibels. The resulting peak daytime noise level at the

project site would be less than 54.5 dBA, and peak nighttime noise conditions at the project site would be less than 48.0 dBA. Using a noise attenuation rate of six decibels for every doubling of distance, project-related peak noise levels at the receptor location closest to the project site (approximately 885 feet from the site) would be less than 29.5 dBA during the daytime and less than 23 dBA during nighttime hours. These noise levels are substantially below the production phase significance thresholds of 45 dBA for daytime hours and 40 dBA for evening and nighttime hours depicted on Table 4.6-3. Therefore, the proposed oil and gas production activities at the project site would result in a less than significant noise impact (Class III).

Long-Term Traffic. As described in Traffic Circulation and Safety Section 4.2.3, above, the peak traffic volumes resulting from the proposed project would generate approximately eight (8) additional vehicle trips along Koenigstein Road per day. With the addition of project-generated traffic, average daily trips on Koenigstein Road would increase from 200 to 208 trips per day. An increase of eight additional daily vehicle trips would not result in a perceptible increase in traffic noise at receptors located adjacent to the roadway. Therefore, long-term noise increases resulting from project-generated traffic would be less than significant (Class III).

4.6.4 Cumulative Impacts

The proposed project would result in a minor (less than three decibels) long-term increase in noise conditions at the project site. Other reasonably foreseeable development projects near the project site (i.e., project numbers 1-3 identified in Section 3.5, Cumulative Projects) would not result in construction operations, long-term activities, or traffic that would increase existing noise levels in the area surrounding the Agnew lease area (the proposed project site). Cumulative oil and gas production projects identified in Section 3.5 would also not result in substantial increases in ambient noise conditions at the Agnew lease project site. The Bently (PL15-0187) project would result in the expanded use of a gas flare, which would not be a substantial source of noise. The Nesbitt and Harth (PL15-0060) project sites are located approximately one mile east of the Agnew lease project site and would not result in cumulative short- or long-term noise-related impacts in the vicinity of the proposed project. The Nesbitt and Harth projects would not be a substantial noise source or generate a substantial amount of traffic along Koenigstein Road that would increase ambient traffic-related noise. Given that the proposed project would have a minor long-term effect on existing noise conditions, the project would not result in a cumulatively considerable contribution to noise conditions that exist in the project area, and its cumulative noise impacts would not be significant (Class III).

4.6.5 Mitigation Measures

With the implementation of mitigation measure NOI-1, the significant project-specific noise impacts from proposed drilling operation will be reduced to a less than significant level (Class II).

NOI-1. Drilling Noise Reduction Requirements

Purpose. To comply with § 8107-5.6.16, § 8107-5.6.17 and §8107-5.6.18 of the *Ventura County Non-Coastal Zoning Ordinance* and to reduce project-related noise from drilling operations at receptors near the project site to below levels of significance.

Requirement. Prior to initiating well drilling operations, the Permittee shall erect a sound barrier around the drilling rig. Such soundproofing shall include any or all of the following: acoustical blanket coverings, sound walls, or other soundproofing materials or methods that ensure drilling operations do not exceed 45 dBA at the nearby receptor locations. The sound barrier shall be in place for the entire duration of drilling activities. The sound barrier must be sufficiently tall and located to break the line of sight between the primary drilling rig noise sources and the nearby receptors. The primary drilling rig noise sources are assumed to be located between ground level (0 feet) and the drilling rig floor (about 20 feet).

All acoustical blankets or panels used for required soundproofing shall be of fireproof materials and shall comply with California Industrial Safety Standards and shall be approved by the Ventura County Fire Protection District prior to installation.

Documentation. The Permittee shall submit photo-documentation, that the soundproofing is installed.

Timing. The Permittee shall install soundproofing prior to the commencement of drilling activities, and shall maintain the soundproofing until the operations are complete. The Permittee shall provide photo evidence that the sound proofing is in place prior to the commencement of drilling. In addition, the Permittee shall arrange for a site inspection by County staff to confirm that the soundproofing has been installed in accordance with specified requirements. Drilling may not commence until the County has confirmed in writing that the terms of this mitigation measure have been satisfied.

Monitoring and Reporting. The Planning Division shall maintain in the project file the photo evidence that the soundproofing was installed. The Planning Division has the authority to conduct periodic site inspections to ensure ongoing compliance with this condition pursuant to the requirements of § 8114-3 of the *Ventura County Non-Coastal Zoning Ordinance*.

4.7 ENVIRONMENTAL ISSUE AREAS ADDRESSED IN THE 1983 FINAL EIR

The 1983 Final EIR prepared for the previously proposed CUP 3543 Modification No. 4 evaluated potential environmental impacts of a request to drill and operate one exploratory well, and to drill and operate five additional oil wells on the proposed project site. The 1983 Final EIR is incorporated by reference into this RSEIR. The 1983 FEIR evaluated project-specific environmental impacts in the following issue areas: Air Quality, Grading, Geology, Hydrology, Traffic, Plantlife, Wildlife, Noise, Archaeology, Fire Protection, Visual, and Pipeline. Table 4.7-1 provides a summary of how each of the environmental issue areas evaluated in the 1983 Final EIR are addressed in this RSEIR.

The 1983 Final EIR also includes a separate section that evaluates the cumulative environmental impacts of the previously proposed CUP 3543 Modification No. 4. Cumulative impacts were evaluated for the Aesthetics/Visual, Air Quality, Biological Resources, Groundwater, Traffic, and Noise environmental issue areas. Table 4.7-2 provides a summary of how each of the cumulative environmental issue areas evaluated in the 1983 Final EIR are addressed in this RSEIR.

**Table 4.7-1
Project-Specific Environmental Issues Evaluated in the 1983 Final EIR**

Issue Area	RSEIR Analysis
Air Quality	Potential impacts on air quality that would result from the proposed project are evaluated in Section 4.1 (Air Quality) of this RSEIR. That analysis concluded that the proposed project would not result in significant air quality impacts.
Grading	<p>This section of the 1983 Final EIR evaluates the potential grading-related impacts that may result from the construction of a well site and access road at the proposed project site. No additional evaluation of this issue is included in this RSEIR as the now-existing well site and access road would be used by the proposed project and no new grading is proposed.</p> <p>For this issue area, no new impacts or impacts different from what was evaluated by the certified 1983 Final EIR would result from the implementation of the currently proposed project.</p>
Geology	This section of the 1983 Final EIR evaluates the potential for degradation of groundwater quality resulting from proposed drilling operations of the proposed oil wells. Potential groundwater quality impacts of the proposed project are evaluated in Section 4.5 (Water Resources) of this RSEIR. That analysis concluded that the proposed project would not result in significant groundwater quality impacts.
Hydrology	This section of the 1983 Final EIR evaluates the potential for the use of an on-site sump that would have been used to contain drilling fluids to result in water quality impacts. The analysis included a recommendation that the drilling fluid sump be lined to prevent groundwater degradation. As explained in Section 4.5

Issue Area	RSEIR Analysis
	<p>(Water Resources) of this RSEIR, this is not an issue associated with the proposed project because the proposed project does not include the use of an on-site sump.</p> <p>For this issue area, no new impacts or impacts different from what was evaluated by the certified 1983 Final EIR would result from the implementation of the currently proposed project.</p>
Traffic	<p>Potential traffic-related impacts that would result from the proposed project are evaluated in Section 4.2 (Traffic Circulation and Safety) of this RSEIR. That analysis concluded that the proposed project would not result in significant traffic or traffic safety impacts.</p>
Plantlife and Wildlife	<p>Potential impacts on plants and animals that would result from the proposed project are evaluated in Section 4.3 (Biological Resources) of this RSEIR. That analysis concluded that the proposed project's potential impacts to nesting birds and California condor can be reduced to a less than significant level with the implementation of proposed mitigation measures.</p>
Noise	<p>Potential noise impacts that would result from the current project are evaluated in Section 4.6 (Noise) of this SEIR. That analysis concluded that the proposed project's short-term oil drilling noise impacts can be reduced to a less than significant level with the implementation of proposed mitigation requirements.</p>
Archaeology	<p>This section of the 1983 Final EIR evaluated the potential for project-related impacts on archaeological resources during the creation of a graded pad and access road on the project site. No additional evaluation of this issue is included in this RSEIR because the now-existing graded pad and access road would be used to construct and operate the proposed oil well project. No new grading is proposed that would have the potential to impact archaeological resources.</p> <p>To implement the tribal consultation requirement of AB 52, the Barareño-Ventureño Mission Indians were informed of the proposed project by a letter from the Planning Division dated November 20, 2018 (Appendix F). No response to the letter was received. Therefore, it is concluded that the requirements of AB 52 have been met.</p> <p>For this issue area, no new impacts or impacts different from what was evaluated by the certified 1983 Final EIR would result from the implementation of the currently proposed project.</p>
Fire Protection	<p>This section of the 1983 Final EIR evaluates potential fire-related impacts of the oil and gas facility, which is located in a high fire hazard area. The analysis concluded that the project would need to store adequate water supplies for fire suppression in accordance with applicable regulations. No additional evaluation of this issue is included in this RSEIR as the now-existing facility would continue to be operated in accordance with applicable VCFPD regulations. The addition of two new wells would not alter the previously identified fire safety requirements.</p>

Issue Area	RSEIR Analysis
	For this issue area, no new impacts or impacts different from what was evaluated by the certified 1983 Final EIR would result from the implementation of the currently proposed project.
Visual	<p>This section of the 1983 Final EIR evaluates the potential effects of the previously proposed oil and gas facility on visual resources. No additional evaluation of this issue is included in this SEIR as the visual character of the now-existing facility would not be substantially changed with the addition of three new oil wells. Furthermore, the existing facility is not prominently visible from public viewing locations such as Koenigstein Road, and State Route 150, which is located approximately 2,800 feet south of the project site.</p> <p>For this issue area, no new impacts or impacts different from what was evaluated in the certified 1983 FEIR would result from the implementation of the currently proposed project.</p>
Pipeline	<p>This section of the 1983 Final EIR evaluates the potential environmental effects of a new pipeline that may be constructed to transport produced crude oil from the oil and gas facility. CUP 3543 requires the installation of a pipeline in the event that project-related production reaches 350 barrels of oil per day.</p> <p>As shown in RSEIR Table 3.2-1 (Estimated Existing Large Truck Trips: 2015-2017), between 2015 and 2017 the existing oil production operations at the project site produced a total of 11,893 barrels of fluid (oil and water), which results in an average daily fluid production rate of approximately 11 barrels per day. Future oil production rates from the proposed new and re-drilled wells are uncertain. However, as described in RSEIR Section 4.2.3, for analysis purposes it has been estimated that fluids (oil and wastewater) produced by the proposed project would be 1.33 times the volume of fluid produced by the existing operations at the project site. At the assumed production rate, the proposed new and re-drilled wells would produce approximately 15 barrels of fluid per day. Combined with existing fluids produced at the project site (approximately 8 barrels per day produced by the two existing wells that would not be re-drilled), the entire project would produce approximately 23 barrels of fluid per day. Even if initial oil production from the proposed new and re-drilled wells is somewhat higher than existing production rates, total oil production by the entire Agnew lease project would be substantially lower than the 350 barrels per day that would require the construction of a project-related pipeline. Therefore, further evaluation of potential pipeline construction and operation impacts was not included in this RSEIR.</p>

Table 4.7-2
Cumulative Environmental Issues Evaluated in the 1983 Final EIR

Issue Area	RSEIR Analysis
Aesthetics/Visual	<p>This section of the 1983 Final EIR describes potential effects on the visual character of the Upper Ojai Valley due to “proposed and probable oil drilling sites, equipment, and access roads.” This issue is not discussed in this RSEIR as the visual character of the now-existing facility would not substantially change with the addition of two new oil wells. The current proposed project would not involve the creation of any new drilling sites or access roads. Furthermore, the existing facility is not prominently visible from public viewing locations such as Koenigstein Road, and State Route 150, which is located approximately 2,800 feet south of the project site. Therefore, the proposed project would not have a cumulative considerable effect on existing visual resources.</p> <p>For this issue area, no new impacts or impacts different from what was evaluated by the certified 1983 FEIR would result from implementation of the currently proposed modified project.</p>
Air Quality	<p>Potential cumulative impacts on air quality that would result from the proposed project are evaluated in Section 4.1 (Air Quality) of this RSEIR. That analysis concluded that the proposed project would not result in significant cumulative air quality impacts.</p>
Biological Resources	<p>Potential cumulative impacts on biological resources that would result from the proposed project are evaluated in Section 4.3 (Biological Resources) of this RSEIR. That analysis concluded that the proposed project would not result in a cumulatively considerable contribution to a cumulative impact on biological resources.</p>
Groundwater	<p>This section of the 1983 Final EIR evaluates potential impacts on the quality of groundwater and concludes that contamination of surface water or groundwater “<i>is not considered likely</i>” because;</p> <p>“(a) the limited quantities of fresh groundwater in the formations; (b) the drilling fluids utilized would prevent fluid loss; (c) the wells would be drilled with fresh water; and (d) as necessary, the annular space would be sealed from ground surface to the base of the freshwater zone.”</p> <p>Potential cumulative impacts on water resources are evaluated in Section 4.5 (Water Resources) of this RSEIR. Similar to the conclusions of the 1983 Final EIR, this RSEIR does not identify a significant cumulative impact on water resources.</p>

Issue Area	RSEIR Analysis
	For this issue area, no new impacts or impacts different from what was evaluated in the certified 1983 Final EIR would result from implementation of the currently proposed project.
Traffic	Potential cumulative impacts on traffic conditions in the project area that would result from the proposed project are evaluated in Section 4.2 (Traffic Circulation and Safety) of this RSEIR. That analysis concluded that the proposed project would not result in significant cumulative traffic-related impacts.
Noise	Potential noise impacts that would result from the current project are evaluated in Section 4.6 of this SEIR. That analysis concluded that the proposed project would not result in a cumulatively considerable contribution to noise conditions that exist in the project area.

5.0 OTHER REQUIRED CEQA SECTIONS

5.1 GROWTH INDUCING IMPACTS

Section 15126.2(d) of the CEQA Guidelines requires an EIR to “*discuss the ways in which the project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth...*” In general, a project may result in a significant growth inducing impact if it individually or cumulatively results in any of the actions described in the following examples:

- The project removes an obstacle to growth, such as: the establishment of an essential public service, the provision of new access to an area, or a change in zoning or general plan designation.
- The project results in economic expansion, population growth or the construction of additional housing occurs in the surrounding environment in response to the project, either directly or indirectly.

The proposed project would result in an expansion of existing oil production operations at an existing oil well pad, and would authorize the use of an existing access road (Koenigstein Road) that connects the project site to Highway 150. The project would not require the extension of sewer, water or other services to the project site; would not require the construction of a new access road or require improvements to the existing project site access road; and would not require changes to the project site’s existing zoning or land use designations. The project would result in short-term employment opportunities when the proposed oil wells are drilled and an existing oil well is re-drilled, and long-term employment opportunities would be limited to removing produced fluids from the project site and checking the operation of on-site equipment. The project’s short- and long-term employment opportunities would not result in substantial new job creation or have the potential to result in substantial economic growth. Therefore, the proposed project would not foster economic or population growth; would not remove an obstacle to population growth; and would not result in significant growth inducing impacts.

5.2 SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED

Section 15126.2(b) of the CEQA Guidelines requires that an EIR identify significant impacts that cannot be reduced to a less than significant level with the application of mitigation measures. As described in Section 4.0 of this RSEIR, the proposed project’s significant short-term noise impacts, and potentially significant impacts to nesting birds and California condor, can be reduced to a less than significant level with the implementation of proposed mitigation measures. The proposed project would not result in any significant and unavoidable impacts.

5.3 ENERGY CONSERVATION

CEQA Guidelines Appendix F requires that EIRs include an evaluation of the potential energy consumption and/or conservation impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful or unnecessary consumption of energy.

Energy use by the proposed project would be primarily from the short-term use of drilling equipment and related vehicles when the proposed oil wells are drilled and an existing well is re-drilled. It is estimated that a project-related drill rig would require the use of 400 gallons of diesel fuel per day, or approximately 4,000 gallons of fuel for each of the two proposed wells and the proposed re-drilled well. The fuel used by the drill rig would not adversely affect local or regional fuel supplies. Fuel used by construction workers commuting to and from the project site would not be substantial due to the short duration (10 days per well) of drilling activities and the limited number of construction workers (20) that would be required. Long-term energy use by the project would include electricity used to power two new pumping units, and fuel used for vehicle trips to and from the project site to haul produced fluids and to check the operation of on-site equipment. Project-related electricity use would be provided by the project site's existing electricity service connection. The project would not have a substantial long-term demand for electricity, and would not adversely affect local or regional supplies. The project's long-term use of vehicle fuel would not be substantial due to the low number of vehicle trips that would be generated. Although the project would result in a short- and long-term increase in the use of energy, its energy use would not be inefficient, wasteful or unnecessary, and overall the project's energy use would be offset by its production of oil that can be used as a new energy source.

6.0 ALTERNATIVES

Section 15126.6(a) of the CEQA Guidelines states that “*an EIR shall describe a range of reasonable alternatives to a project or location of a project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.*”

CEQA Guidelines Section 15126.6(f) further states that “*the range of alternatives required in an EIR is governed by the ‘rule of reason’ that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project.*”

As described in RSEIR Section 2.4, the objective of the proposed project is to increase oil and gas production from the existing facility.

6.1 NO PROJECT ALTERNATIVE

Under the No Project Alternative, proposed project PL13-0158 would not be approved and the requested modification of CUP 3543 would not occur. CUP 3543 would expire, oil production operations at the project site would not be resumed, no new oil wells would be constructed at the project site, and project-related tanker truck traffic would not be authorized to use Koenigstein Road. Under the No Project Alternative the existing project site would be restored in accordance with the requirements of the Ventura County Non-Coastal Zoning Ordinance and the existing requirements of CUP 3543.

Air Quality. Short-term oil well drilling emissions that would result from the proposed project would be avoided, and recommended conditions of approval to minimize construction emissions would not be required. Less than significant long-term air emissions and health risks associated with the existing and proposed oil wells would also be avoided.

Traffic Circulation and Safety. Traffic that would be generated by proposed oil well drilling operations would not occur under the No Project Alternative, and long-term traffic required to transport produced fluids from the project site and for routine well maintenance would also be avoided.

Biological Resources. The potential for short-term impacts to nesting birds and California condor that may result from the proposed project would be avoided by the No Project Alternative. Potential project-related long-term impacts to nesting birds and California condor would also be avoided under the No Project Alternative.

Climate Change. The less than significant greenhouse gas emission that would result from proposed short-term oil well drilling operations, and less than significant long-term greenhouse

gas emissions that would result from the proposed project would be avoided under the No Project Alternative.

Water Resources. The No Project Alternative would avoid the less than significant ground water use impacts that would result from drilling the proposed oil wells. The less than significant potential ground and surface water quality impacts that may result from the construction and operation of the wells would also be avoided.

Noise. The No Project Alternative would avoid the significant short-term noise impacts that would occur if the proposed oil wells are drilled and mitigation measures to reduce drilling noise impacts would not be required. This alternative would also avoid the less than significant project-related long-term noise that would result from project-generated traffic and the operation of additional equipment at the project site.

6.2 OPERATE EXISTING FACILITIES ONLY ALTERNATIVE

The Operate Existing Facilities Only Alternative would allow the continued operation of the three existing oil wells, the existing on-site flare, and other accessory equipment located on the project site; and would allow project-related tanker trucks to use Koenigstein Road to access the project site. Under this alternative, an existing on-site well would not be re-drilled and no new wells would be constructed on the project site.

Air Quality. Short-term oil well drilling emissions that would result from the proposed project would be avoided, and recommended conditions of approval to minimize construction emissions would not be required. Less than significant long-term air emissions and health risks that would result from the proposed project would be reduced by this alternative because no new oil wells would be drilled or operated on the project site.

Traffic Circulation and Safety. Traffic that would be generated by proposed oil well drilling operations at the project site would not occur under the Operate Existing Facilities Only Alternative because no wells would be drilled or re-drilled. Long-term traffic trips required to transport produced fluids from the project site and traffic for routine well maintenance would generally be similar to the low volume of traffic that would be generated by the proposed project. Similar to the proposed project, potential traffic safety impacts under this alternative resulting from truck turning movements at the State Route 150/Koenigstein intersection would be reduced to a less than significant level by proposed traffic safety mitigation measures.

Biological Resources. The potential for short-term impacts to nesting birds that may result from the proposed project would be avoided by the Operate Existing Facilities Only Alternative because the potential for drilling-related noise to result in active nest abandonment would be avoided. Potential short-term impacts to California condor resulting from drilling activities would also be avoided, although potential long-term impacts to condor could result and similar mitigation measures to minimize the potential for oil well operation-related impacts would be required.

Climate Change. The less than significant greenhouse gas emissions that would result from proposed short-term oil well drilling operations would be avoided by the Operate Existing Facilities Only Alternative. The less than significant long-term greenhouse gas emissions that would result from the proposed project would be reduced by this alternative because fewer oil wells would be operated at the project site.

Water Resources. The Operate Existing Facilities Only Alternative would avoid the less than significant ground water use impacts that would result from drilling the proposed oil wells. The less than significant potential long-term ground and surface water quality impacts that may result from the proposed project would be reduced by this alternative because fewer oil wells would be operated at the project site.

Noise. The Operate Existing Facilities Only Alternative would avoid the significant short-term noise impacts that would occur if the proposed oil wells are drilled. The less than significant long-term noise impacts that would result from the operation of equipment at the project site would be reduced by this alternative because fewer oil wells would be operated at the project site. Long-term noise from vehicle traffic traveling to and from the project-site would be similar to the long-term traffic noise generated by the proposed project.

6.3 REDUCED PROJECT INTENSITY ALTERNATIVE

The Reduced Project Intensity Alternative would allow the continued operation of the three oil wells and accessory equipment located on the project; would allow project-related tanker trucks to use Koenigstein Road to access the project site; and would require a reduction in the number of new or re-drilled wells. For this alternative, it was assumed that one new well would be constructed and one existing well would be re-drilled.

Air Quality. Short-term oil well drilling emissions that would result from the proposed project would be reduced by the Reduced Project Intensity Alternative, and recommended conditions of approval would reduce less than significant short-term construction-related emissions to the extent feasible. Less than significant long-term air emissions and health risks that would result from the proposed project would also be reduced by this alternative because only one new well would be constructed and one well would be re-drilled.

Traffic Circulation and Safety. The Reduced Project Intensity Alternative would result in two separate drilling periods for the construction/re-drilling of oil wells on the project site. Both drilling periods would generate short-term traffic volumes that are similar to the short-term construction traffic that would be generated by each of the drilling periods that would occur if the proposed project were implemented. The proposed project, however, would result in three drilling periods over the life of the project (i.e., two new wells and one re-drilled well). Therefore, the Reduced Project Intensity Alternative would result in a reduction in the total amount of construction traffic when compared to the total amount of construction traffic that would be generated by the proposed project. Overall, the Reduced Project Intensity Alternative would result in a reduction in the less than significant short-term traffic impacts that would result from the

proposed project. Long-term traffic trips required to transport produced fluids from the project site and traffic for routine well maintenance would generally be similar to the low volume of traffic that would be generated by the proposed project. Similar to the proposed project, potential traffic safety impacts under this alternative resulting from truck turning movements at the State Route 150/Koenigstein intersection would be reduced to a less than significant level by proposed traffic safety mitigation measures.

Biological Resources. The Reduced Project Intensity Alternative would reduce the number of drilling periods and the number of oil wells on the project site when compared to the on-site development that would occur if the proposed project were to be approved. This alternative, however, could still result in impacts to nesting birds and California condor, and mitigation measures to reduce those potential those impacts would still be required. Therefore, the potential impacts of this alternative to biological resources would be similar to the impacts of the proposed project.

Climate Change. Short-term emissions emission of greenhouse gases that would result from the proposed project would be reduced by the Reduced Project Intensity Alternative. The less than significant long-term air emissions of greenhouse gases that would result from the proposed project would also be reduced by this alternative. This alternative would result in reduced short- and long-term greenhouse gas emission because only one new well would be constructed and one well would be re-drilled.

Water Resources. The Reduced Project Intensity Alternative would reduce the proposed project's less than significant short-term groundwater use impacts because constructing fewer wells on the project site would reduce the total amount of water used for drilling operations. The reduced on-site development would also reduce the proposed project's less than significant potential to result in short- and long-term ground and surface water quality impacts.

Noise. The Reduced Project Intensity Alternative would reduce the number of drilling periods and the number of oil wells on the project site when compared to the total duration of drilling that would occur if the proposed project were to be approved. This alternative, however, would still result in drilling noise impacts to nearby residents and mitigation measures to reduce short-term noise impacts would still be required. Therefore, the potential short-term noise impacts of this alternative would be similar to the impacts of the proposed project. The Reduced Project Intensity Alternative would reduce the total number of oil wells on the project site when compared to the proposed project, however, overall long-term noise impacts resulting from the operation of on-site equipment would be similar to the long-term impacts of the proposed project. Long-term noise from vehicle traffic traveling to and from the project-site would be similar under this alternative when compared to the long-term traffic noise generated by the proposed project.

6.4 ALTERNATIVES REJECTED FROM FURTHER ANALYSIS

Several additional alternatives were considered but rejected from further analysis because the alternatives would result in additional environmental impacts when compared to the proposed project. The alternatives rejected from further consideration are described below.

Alternative Project Site. As described in RSEIR Section 3.3 (Land Use Planning) and depicted on Figure 3.2-1, CUP 3543 encompasses an area of approximately 160 acres. Development of the proposed project on other property included within the boundaries of CUP 3543, or the development of the project at another site located in the Ojai Oil Field, was rejected from further consideration because the use of an alternative project site would likely result in environmental impacts that are greater than the impacts of the proposed project.

The development of new oil wells at a different project location would likely require the construction of a new oil well pad. Grading to develop a new pad, and possibly a new access road, would have the potential to result in vegetation removal and other grading-related impacts (e.g., erosion, water quality, and aesthetics) that would not result from the proposed project. Grading to construct a new drill pad, and long-term oil well operations at an alternative site would also have the potential to result in impacts to nesting birds and California condor, similar to the potential impacts of the proposed project.

The development of new oil wells at a site located within the boundaries of CUP 3543 would require the use of Koenigstein Road for access. Therefore, an alternative site would not avoid or reduce the less than significant traffic and circulation impacts associated with the proposed project. To be consistent with the proposed project's objective of increasing oil production, the development of an alternative site would require the development and operation of six oil wells, similar to what would be located at the existing project site if the proposed project were to be approved. The construction of six new oil wells at an alternative site would result in an increase in air quality, traffic, climate change, water resources and noise impacts when compared to the impacts of the proposed project.

Since an alternative project site would have the potential to result in environmental impacts that are greater than the impacts of the proposed project, this alternative was eliminated from further consideration.

Alternative Site Access. The development and use of an alternative access route to serve the proposed project, rather than the proposed use of Koenigstein Road, would not be an alternative to the proposed project but would be an alternative to a component of the project. The most likely potential alternative project site access would be the route previously approved by CUP 3543, which included the use of a bridge over Sisar Creek.

The site of the former creek crossing is now an active stream channel that supports sensitive wildlife habitat. Construction of a new at-grade crossing and associated drainage culvert, or a bridge

spanning the creek, would have the potential to result in significant impacts to biological resources and would result in impacts that are greater than the biological resource impacts of the proposed project. It is also unlikely that a required Streambed Alteration Agreement from the California Department of Fish and Wildlife could be obtained given the availability of an existing paved public roadway (i.e. Koenigstein Road) that serves the same purpose and has served other oil projects in the area for a number of decades. Since the proposed use of Koenigstein Road would not result in significant biological resource, traffic, or circulation impacts, and the development of an alternative access would likely result in significant impacts, an alternative access route to the proposed project was rejected from further analysis.

Conveyance of Produced Fluids by Pipeline. The development and use of a pipeline to transport fluids produced at the project site, rather than using trucks that travel on Koenigstein Road, would not be an alternative to the proposed project but would be an alternative to a component of the project.

CUP 3543 (Condition of Approval 49) requires the development of a pipeline to transport produced fluids when oil production reaches 350 barrels per day. As depicted on RSEIR Table 3.2-1, between 2015 and 2017, a total of 11,893 barrels of water and oil were transported from the project site. Over this three year period (1,095 days) the average amount of fluid produced by the existing project was approximately 11 barrels per day. Future oil production rates from the proposed new and re-drilled wells are uncertain. However, as described in RSEIR Section 4.2.3, for analysis purposes it has been estimated that fluids (oil and wastewater) produced by the proposed project would be 1.33 times the volume of fluid produced by the existing operations at the project site. At the assumed production rate, the proposed new and re-drilled wells would produce approximately 15 barrels of fluid per day. Combined with existing fluids produced at the project site (approximately 8 barrels per day produced by the two existing wells that would not be re-drilled), the entire project would produce approximately 23 barrels of fluid per day. Even if initial oil production from the proposed new and re-drilled wells is somewhat higher than existing production rates, total oil production by the entire Agnew lease project would be substantially lower than the 350 barrels per day that would require the construction of a project-related pipeline.

In the unlikely event that future project-related oil production exceeds 350 barrels per day, the project applicant would be required to construct a pipeline as required by CUP 3543. If a pipeline were to be constructed, additional environmental review would be required based on the proposed location of the pipeline and its construction characteristics. A programmatic evaluation of potential environmental impacts that may result if a project-serving pipeline were to be constructed was included in the 1983 EIR prepared for the proposed project. Possible pipeline-related impacts identified by the 1983 EIR included potential impacts to Sisar Creek if the pipeline was buried beneath the creek; potential construction-related fire hazards and long-term pipeline failure impacts; short-term construction-related erosion and sedimentation impacts; and potential vegetation and habitat disturbance impacts. In addition to the impacts identified in the 1983 EIR, the construction of a project-serving pipeline would also have the potential to result in significant short-term air quality and noise impacts.

The environmental impacts associated with the construction of a project-serving pipeline would also occur if a pipeline were to be constructed as an alternative to trucking project-related oil volumes that do not exceed the 350 barrel per day threshold established by CUP 3543. In addition, constructing a pipeline to transport very low volumes of oil, such as the low volumes of oil that are anticipated to be produced by the proposed project, would likely be financially infeasible. Therefore, due to the potential for increased environmental impacts when compared to the impacts of the proposed project, an alternative to construct a project-serving pipeline was rejected from further analysis.

6.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Table 6.5-1 summarizes the potential for the alternatives evaluated by this RSEIR to avoid, or result in reduced or similar environmental impacts when compared to the impacts of the proposed project.

If the No Project Alternative were to be implemented, no new oil wells would be constructed at the project site and the existing oil production facilities at the site would be removed. Therefore, the No Project Alternative is the environmentally superior alternative. The No Project Alternative, however, would not attain the objective of the project to increase oil production at the project site. CEQA Guidelines Section 15126.6(e)(2) states that *“if the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.”*

The Operate Existing Facilities Only Alternative would avoid the short-term oil well development impacts of the proposed project, and would reduce long-term project-related impacts associated with air quality, climate change, and water resources. The Operate Existing Facilities Only Alternative, however, would not achieve the objective of the proposed project to increase oil production.

The Reduced Project Intensity Alternative would reduce the short-term oil well development impacts of the proposed project related to air quality, traffic and circulation, climate change, and water resources. The Reduced Project Intensity Alternative would also reduce long-term project-related impacts associated with air quality, climate change, and water resources. The reduction in the number of oil wells developed at the project site under this alternative would reduce the amount of oil that may be produced by the proposed project, however, this alternative would partially implement the objective of the project to increase on-site oil production. Therefore, the Reduced Project Intensity Alternative would be environmentally superior to the proposed project. The implementation of this alternative, however, is not necessary to reduce the proposed project’s environmental impacts to a less than significant level.

**Table 6.5-1
Alternatives Impact Comparison Summary**

Environmental Issue Area	Air Quality		Traffic		Biological Resources		Climate Change		Water Resources		Noise	
	Short Term Impact	Long Term Impact	Short Term Impact	Long Term Impact	Short Term Impact	Long Term Impact	Short Term Impact	Long Term Impact	Short Term Impact	Long Term Impact	Short Term Impact	Long Term Impact
Alternative												
No Project	Avoided	Avoided	Avoided	Avoided	Avoided	Avoided	Avoided	Avoided	Avoided	Avoided	Avoided	Avoided
Operate Existing Facilities Only Alternative	Avoided	Reduced	Avoided	Similar	Avoided	Similar	Avoided	Reduced	Avoided	Reduced	Avoided	Similar
Reduced Project Intensity Alternative	Reduced	Reduced	Reduced	Similar	Similar	Similar	Reduced	Reduced	Reduced	Reduced	Similar	Similar

KEY

Avoided = The impacts associated with this impact evaluation criterion would not occur under this alternative.

Reduced = This alternative's impacts would be reduced when compared to the impacts of the proposed project.

Similar = This alternative would result in impacts similar to the impacts of the proposed project.

7.0 REFERENCES and PREPARERS

7.1 REFERENCES

Associated Transportation Engineers, October 2, 2019: Agnew Oil Lease Development Modified CUP, Ventura County, California, Traffic Study.

Associated Transportation Engineers, July 26, 2016: State Route 150 and Koenigstein Road Analysis, Ventura County, California.

California Department of Conservation, Division of Oil and Gas and Geothermal Resources, Well Finder website, Accessed October 1, 2018. <https://secure.conservation.ca.gov/WellSearch>.

County of Ventura, 1983: Final EIR for the Phoenix West Oil and Gas Company Project.

County of Ventura, March, 2016: Final Subsequent EIR for the Mirada Petroleum Oil and Gas Project, Agnew Lease.

County of Ventura, April 26, 2011: Initial Study Assessment Guidelines.

County of Ventura, March 24, 2015: Ventura County General Plan, Ojai Valley Area Plan.

County of Ventura, May 18, 2016: Board of Supervisors Public Hearing on June 21, 2016, Planning Division Staff Memorandum, Mirada Petroleum (Agnew) Project, PL13-1058.

County of Ventura, Resource Management Agency, Planning Division, Pending Projects as of October 01, 2018. Accessed October 1, 2018. www.vcrma.org/divisions/planning.

Los Angeles Regional Water Quality Control Board; Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, 2017-2019 Triennial Review.

South Coast Air Quality Management District, 2008, Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans.

State of California, 2018: California's Fourth Climate Change Assessment, California's Changing Climate 2018.

Sespe Consulting, Inc., May 29, 2019: Updated Air Quality Impact Assessment, Carbon California Company – Agnew Lease.

Sespe Consulting Inc., January 2, 2019: Air Quality Impact Assessment, Carbon California Company.

County of Ventura, November 21, 2019: Ventura County Public Works Agency transportation Department Memorandum.

Ventura County Public Works, March 2, 2018: *State Route (SR) 33 Traffic Impact Analysis*.

Ventura County Air Pollution Control District, October, 2003: Air Quality Assessment Guidelines.

Ventura County Non-Coastal Zoning Ordinance

Walters, Jeffrey, et. al, August 2008: *Status of the California Condor and Efforts to Achieve its Recovery*.

7.2 PREPARERS

This Revised Subsequent EIR was prepared by Rodriguez Consulting, Inc. The evaluation of potential air quality impacts is based on an assessment prepared by Sespe Consulting Inc. The assessment of potential traffic and circulation impacts is based on an evaluation prepared by Associated Transportation Engineers.

Appendix A

December 4, 2017 Writ of Mandate

VENTURA SUPERIOR COURT
FILED
DEC 04 2017
MICHAEL D. PLANET
Executive Officer and Clerk
By:  Deputy

**SUPERIOR COURT OF THE STATE OF CALIFORNIA
COUNTY OF VENTURA**

CITIZENS FOR RESPONSIBLE OIL & GAS ,

Petitioner,

v.

COUNTY OF VENTURA,

Respondent.

CARBON CALIFORNIA COMPANY, LLC,
and DOES 2 to 10,

Real Parties in Interest.

Case No. 56-2016-00484423-CU-WM-VTA

JUDGMENT

Assigned for All Purposes To Hon. Glen Reiser,
Dept. J6

Action Filed: July 21, 2016

Trial Date: September 1, 2017

TO ALL PARTIES AND THEIR ATTORNEYS OF RECORD:

On September 1, 2017, this matter came for hearing, the Honorable Glen M. Reiser presiding. Attorneys Amy C. Minter and Michelle N. Black were present for Petitioner Citizens for Responsible Oil & Gas ("Petitioner"). Attorney Jeffrey Barnes appeared on behalf of Respondent County of Ventura ("County"). Attorney Whitney G. McDonald appeared on behalf of Real Party in Interest Carbon California Company, LLC ("Real Party in Interest"). Argument was heard from all parties, and the Court took the matter under submission.

The Court having fully considered all of the briefs and arguments of the parties and the contents of the administrative record, and having issued an Order on Amended Petition for Writ of

1 Mandate granting the petition, now, therefore,

2 IT IS HEREBY ADJUDICATED, ORDERED, AND DECREED that:

- 3 1. The writ petition is granted for the reasons set forth in the Order on Amended
4 Petition for Writ of Mandate filed on November 14, 2017 ("Order"), a copy of
5 which is attached hereto as **Exhibit A**.
- 6 2. A Writ of Mandate shall issue commanding the County to set aside and vacate (a)
7 its June 21, 2016 certification of the Supplemental Environmental Impact Report,
8 State Clearinghouse No. 2015021045; (b) its Notice of Determination posted by
9 the Ventura County Clerk and Recorder on June 23, 2016; and (c) its June 21,
10 2016 approval of Modified Conditional Use Permit No. 3543 (Case No. PL13-
11 0158).
- 12 3. The Writ of Mandate shall further command that, should the project that was
13 challenged through this lawsuit, Modified Conditional Use Permit No. 3543
14 (Case No. PL13-0158), proceed, the County is directed to issue a revised
15 Supplemental Environmental Impact Report for the project that is consistent with
16 the California Environmental Quality Act and with the Court's Order.
- 17 4. This court recognizes that its judgment "shall include only those mandates which
18 are necessary to achieve compliance with [CEQA] and only those specific project
19 activities in noncompliance with [CEQA]." (Pub.Res.C. §21168.9(b). However,
20 the severance of a CEQA project into components on an order of mandate is
21 permissible only to the extent it "will not prejudice complete and full compliance
22 with [CEQA]." (*Id.*) Absent CEQA compliance in this case, there is no question
23 that the proposed drilling of new wells, plus all production, storage, flaring and
24 transport associated with those new wells for the proposed term of the CUP, must
25 be enjoined. While re-permitting the three previously existing production wells
26 and arguably the re-drilling of one of those wells under the 1983 EIR is not on its
27 face a CEQA violation, the proposed change of permit conditions to freely
28 authorize gas flaring for the length of the proposed permit, and real party's

1 claimed necessity of Koenigstein Road use for all oilfield activities associated
2 with the three existing wells does indeed prejudice "complete and full" CEQA
3 compliance. There is presently no valid CEQA authorization for any such
4 activities, including those activities previously authorized under expired permit
5 CUP-3543.

- 6 5. Accordingly, any and all activities proposed to be permitted under the pending
7 CUP-3543 application, including but not limited to oilfield drilling, re-drilling,
8 production, storage, flaring and/or transport, are hereby enjoined and restrained
9 until further order of this court. This injunction shall be stayed until December
10 14, 2017, at 9:00 AM, the sole purpose of allowing real party ten (10) days to
11 remove inventories of compressed gases, oil, and any other petrochemical
12 products, plus any other potentially flammable or hazardous materials, which are
13 currently being stored or maintained at the project site.
- 14 6. Petitioner, as the prevailing party, is entitled to costs pursuant to Code of Civil
15 Procedure Section 1033.5 in the sum of \$ _____ [to be determined].
- 16 7. Petitioner, as prevailing party, is entitled to apply for attorneys' fees through
17 appropriate noticed motions after entry of this Judgment. This Court retains
18 jurisdiction to hear such motions and determine the amount of such fees, if any,
19 pursuant to them. If such a motion is granted, this judgment will be amended to
20 award the amount of \$ _____ [to be determined] in attorneys' fees
21 pursuant to Code of Civil Procedure Section 1021.5.
- 22 8. The Court shall retain jurisdiction over this action to oversee compliance with the
23 writ of mandate. An initial return shall be filed no later than February 20, 2018.

24
25
26
27 Dated: Dec. 4, 2017

Glen M. Reiser
HON. GLEN M. REISER
JUDGE OF THE SUPERIOR COURT

VENTURA
SUPERIOR COURT
FILED

NOV 14 2017

BY: 
MICHAEL B. BENNETT
Executive Officer and Clerk
Deputy

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF VENTURA

CITIZENS FOR RESPONSIBLE OIL & GAS)

Petitioners,

v.

COUNTY OF VENTURA

Respondent.

Case No.: 56-2016-00484423-CU-MU-OXN

**ORDER ON AMENDED PETITION FOR
WRIT OF MANDATE**

**MIRADA PETROLEUM INC.; and DOES 1 to
10,**

Real Parties in Interest.

HISTORY OF CUP-3543

On June 27, 1975, an application for a conditional use permit ("CUP-3543") was submitted by Phoenix West Oil and Gas Corporation ("Phoenix") to respondent County of Ventura ("County"). *Whitman v. Board of Supervisors* ("Whitman") 88 Cal.App.3d 397, 402. The application requested permission for Phoenix to drill an exploratory oil and

gas well on 1.5 acres in the Sisar Creek area of the upper Ojai Valley in Ventura County. (*Id.*; Administrative Record [“AR”] 257-260 [maps]¹.)

Truck and vehicular traffic to the CUP-3543 site traverses State Highway 150, turning (depending upon direction of ingress) onto Koenigstein Road. *Whitman, supra*, at 403. State Highway 150 is a 24-foot wide, two-lane highway. (*Id.*) Koenigstein Road is a 14-foot wide county road. (*Id.*) The oil well site is approximately “one-fourth mile” from “scattered residences” to the north. [AR 261.]

The County of Ventura prepared a draft environmental impact report for the CUP-3543 application and, on January 13, 1976, the Ventura County Board of Supervisors found that the EIR for CUP-3543 was legally sufficient. *Whitman, supra*, at 403. A petition for writ of mandate was filed challenging the approval under the California Environmental Quality Act (“CEQA”). (*Id.*, at 404.) Judge Ben Ruffner denied the petition, which decision was appealed. (*Id.*)

While the *Whitman* case was pending appeal, Phoenix placed its exploratory well into production, immediately followed by a modified application from Phoenix to allow a total of six oil wells on the subject site. [AR 1, 252.] Using the existing EIR, the Board of Supervisors approved the additional drilling of five additional oil wells. [*Id.*]

After that approval, the Superior Court’s ruling in *Whitman* on the exploratory well was reversed by the Court of Appeal for failing to consider, *inter alia*, the cumulative impacts associated with CUP-3543. (*Id.*, at 406-419.)² As noted by the appellate court in *Whitman, supra*, at 410 [fn. 6]:

“Subsequent to the issuance of CUP-3543, the Board [of Supervisors] modified the CUP to permit the drilling of five additional wells without the preparation of a new or modified EIR... It is difficult to accept that an EIR prepared for single well adequately covered all the impacts associated with five additional wells.”

¹ The County has certified a 5633-page administrative record consisting of 570 electronically indexed documents, each of which is hyperlinked on a court-requested DVD. Each page of the digital administrative record is numbered sequentially, with the court’s citations to the administrative record identified as “AR [page]”. There is no paper record.

² *Whitman* remains a seminal decision on various interpretive CEQA principles. See, e.g., *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal. 3d 376, 398. *City of Irvine v. County of Orange* (2015) 238 Cal. App. 4th 526, 548.

After remand from the Court of Appeal, CUP-3543 returned to the Board of Supervisors. [AR 248-317.] In the absence of an injunction pending appeal, the ensuing 1980 EIR noted that two of the six authorized wells were then "currently under production." [AR 251, 252, 2324.] The County's rewritten EIR of June 18, 1980, proposed a 4000' pipeline to be built if oil production on the well site exceeded 350 barrels per day. [AR 256.]

The County's revised and subsequently approved 1980 EIR sets forth the following quantification of anticipated air quality impacts [AR 262]:

Air Quality Assessment¹

The drilling operation would require approximately 400 gallons of diesel fuel per day, according to the applicant. Emission factors for stationary diesel sources (Environmental Protection Agency publication #AP-42) follow:

Reactive Hydrocarbons = 37.5 lbs/1000 gal. fuel burned
 NO_x = 469 lbs/1000 gal. fuel burned

Daily emissions follows:

Reactive Hydrocarbons	$\frac{400 \text{ gal.}}{1000 \text{ gal.}} \times 37.5 \text{ lbs.} = .008 \text{ tons}$ $\frac{2000 \text{ lbs/tons}}$
NO_x	$\frac{400 \text{ gal.}}{1000 \text{ gal.}} \times 469 \text{ lbs.} = .094 \text{ tons}$ $\frac{2000 \text{ lbs/ton}}$

Impact: The project would result in a 0.016 per cent increase in reactive hydrocarbons and a 0.1 per cent increase in NO_x emissions countywide. These emissions, in addition to some associated with vehicle miles traveled by project vehicles, would have a slight impact on the County's oxidant problem.

The traffic assessment in the County's revised 1980 EIR [AR 266] concludes that flagmen would be physically required to allow for safe movement of large trucks at the intersection of State Highway 150 and Koenigstein Road:

Traffic Assessment⁵

Access to the site is via State Route 150 to Koenigstein Road. State Route 150 is a 24 foot wide paved road with graded shoulders. The current volume is 3000 average daily traffic (ADT) and the average speed is 45 mph. There are curves on State Route 150 both east and west of Koenigstein Road. Koenigstein Road is a 14 foot wide paved road with graded dirt shoulders. The road is in average condition. The current volume is approximately 50 ADT with no viable estimate of capacity available due to the surface width and seasonal variation of weather conditions. This road currently carries oil field related traffic. Access via Koenigstein Road is marginal with respect to the road width, the structural section, and the junction with State Route 150. There has been one recorded accident at the intersection of State Route 150 and Koenigstein Road during the last 12 months. This accident involved a car and a pickup; one driver was driving under the influence of alcohol.

The project would result in a traffic volume of 40 ADT during the drilling stage. If the well is successful, the traffic volume would be approximately 4 ADT after the pipeline is constructed for removal of oil from the site. Large truck-trailer equipment would be used at the beginning and end of the drilling phase of the project to move drilling equipment on and off the site. This activity would be limited to 3 or 4 large vehicles.

Impact: Both Bridge #326 on Koenigstein Road and the road itself are adequate to carry heavy equipment. Since the road is inadequate to accommodate two passing trucks, one truck would be required to pull over to the shoulder. This condition would create an inconvenience; however, it would not be characterized as unsafe due to the small volume of traffic currently occurring on the road.

The movement of large vehicles at the intersection of State Route 150 and Koenigstein Road could create unsafe conditions.

Mitigating Measures: The applicant proposes that the movements of large vehicles at the intersection of State Route 150 and Koenigstein Road be mitigated by the use of traffic control personnel furnished by the Sheriff's Department.

Staff Evaluation: The Public Works Agency indicates that the control of traffic is the responsibility of the applicant, not the Sheriff or California Highway Patrol, as required by a County Encroachment Permit for oversized/overweight loads. Flagmen should be required for movements of large vehicles at the intersection.

The revised 1980 EIR contains a significantly expanded analysis of project cumulative impacts [AR 278-312], with extensive discussion of cumulative air quality impacts. [AR 296-305.] The County's formal notice of determination approving the additional five oil wells did not issue until January 21, 1982. [AR 2.]

Phoenix subsequently drilled a third oil well on the subject site, and on March 25, 1982, Phoenix transferred its interest in CUP-3543 to Agoil Inc. ("Agoil"). [AR 2339.]

Agoil applied for and received an extension of time from the County to drill the remaining three permitted wells. [AR 9, 2339-2358.]

The County's environmental review associated with the 1983 drilling extension to drill the exact same three wells sought to be drilled under the current application found significant geologic impacts, significant hydrologic impacts, significant traffic impacts, significant noise impacts and significant visual resource impacts. The same environmental analysis also found significant impacts involving cumulative air quality for which a statement of overriding considerations was issued.³ [AR 2339-2340.]

The County's 1983 traffic analysis mitigated the significant traffic safety impact finding by precluding large oil trucks entirely from driving on Koenigstein Road and relocating them ½ mile to the east [AR 522, 526, 2341.]:

9. Traffic Circulation: Access to the drill site for small vehicles would be via Koenigstein Road, thence several hundred feet north along private access roads to the subject drill site. Truck traffic would access the site via Highway 150 one half mile west of Koenigstein Road, thence north and east along an unpaved private access road through the Ojai Oil Company property (CUP-293 A). Condition 52 would prohibit truck traffic (over 3/4 ton) on Koenigstein Road. This prohibition is necessary because of a narrow bridge on Koenigstein Road immediately adjacent to Highway 150 which results in poor turning radii for large vehicles.

Traffic to the site during drilling phase is estimated to average 26 trips per day. When the drilling phase is complete, traffic is expected to average three vehicles per day.

The nearest oil pipeline is the Arco Four Corners Pipeline located south of Highway 150. Condition 49 would require connection to an oil pipeline when production averages 350 barrels of oil per day (about two trucks per day).

³ Notably, while the County's 1983 EIR determined that there to be significant *cumulative* air quality impacts associated with the proposed new three CUP-3543 wells, the 1983 EIR did not find there to be significant stand-alone significant impacts associated with the proposed three additional oil wells. **It was not until 1995 that the Board of Supervisors adopted the Ojai Valley Area Plan ("OVAP"), which general plan component established a 5 pound ROC/NOx per day "threshold of [CEQA] significance" for projects within the OVAP boundaries.** So while the 1983 EIR found that three additional oil wells were consistent with associated land use and zoning [AR 2341], this was arguably not the case after adoption of the OVAP in 1995. The OVAP is discussed in greater detail, *infra*.

The significant cumulative air quality impacts associated with the three additional wells found in 1983 could not be mitigated, compelling issuance of a statement of overriding considerations. [AR 2340.]

County's final EIR on the CUP-3543 was approved on November 17, 1983. [AR 521.] The County issued a permit modification on March 31, 1987. The modified permit determined that CUP-3543 was to terminate on November 17, 2013. **Condition 77 of the modified permit prohibited the permit holder from using Koenigstein Road "as a primary access road with ¾-ton and over trucks, except for secondary emergency traffic.** [AR 76.]

The three additional oil wells authorized by the permit were not drilled prior to the expiration of the 25-year term of CUP-3543 on November 17, 2013. [AR 520.] At some point over the course of that permit, rights under CUP-3543 were acquired by Mirada Petroleum, Inc. ("Mirada").

THE 2013 EXTENSION/ MODIFICATION APPLICATION

On November 8, 2013, nine days prior to CUP-3543 expiration, an application was filed on behalf of Mirada to renew the permit for an additional 25 years, including re-drilling one of the three existing wells, and for authorization to drill the remaining three wells authorized under the original permit. [AR 533, 5217-5249.]

According to the County, the permitted access route for oil drilling and tanker trucks was destroyed by flooding in 1995. [AR 518, 528, 533, 540, 5289.] The record is substantially uncontradicted that from and after 1995, the successive permittees illegally and impermissibly used Koenigstein Road for all oil field-related truck trips. [AR 528, 529, 540, 3954 (per the County—"absolutely" a permit violation).]

Upon receipt of complaints, violation of CUP-3543 permit conditions prohibiting use of Koenigsten Road by oil trucks was raised by the County, but stalled by then-permittee Bentley-Simonson, Inc. on its claim that the County's ¾-ton truck trip prohibition on Koenigstein Road was limited only to oil field drilling (rather than all) operations.⁴ [AR 539, 5110-5113.] Mirada's current permit renewal application requests

⁴ The balance of the administrative record does not support the Bentley-Simonson contention, nor is it being advanced by either the County or the real party in interest on the permit renewal/

that all oil field-related trucks, drilling or otherwise, exclusively use Koenigstein Road to and from State Highway 150 for the duration of the proposed 25-year project extension. [*Id.*]

The Mirada application requests reduction in the number of permitted weekly truckloads traveling to/from the site from twelve (24 one-way trips) to eight (16 one-way trips), plus 14 weekly “maintenance” visits. [AR 520, 533-534.]

On April 19, 2015, the County circulated a draft subsequent EIR [“SEIR”] for the proposed CUP-3543 permit renewal, designed to augment the 1983 final EIR. [AR 515-581, 5449.] The SEIR concluded that the only material change in the project since the 1983 environmental approval involved the transfer of all oil trucks to Koenigstein Road. [AR 519, 3712.]

At the time of the renewal application, the “baseline” Mirada facilities at the site consisted of three oil wells, one water tank, two wastewater tanks, two storage tanks, one barrel tank, three assorted vertical tanks, a gas flare, electrical equipment and “several local pipelines.” [AR 533-535.] Because it was not part of the prior permit authorization, “baseline” truck trips on Koenigstein Road were deemed in the SEIR to be zero. [AR 535.]⁵

In considering contemporaneous “related” projects for purposes of determining further cumulative impacts under CEQA, the SEIR included a Mirada project authorizing the drilling of nine oil wells approximately one mile east of the subject site, and a pending Vintage Petroleum project proposing to drill 19 oil wells approximately two miles east of the subject site. [AR 536.]

modification application. (See, *e.g.*, AR 532 [SEIR]—“The use of Koenigstein Road by large oil-related trucks is prohibited by the current conditions of approval of CUP-3543.”)

⁵ The first commercial oil well in California, drilled nearly 150 years ago, is located approximately one mile from the subject site. [AR 535.] According to the County in 1977, “[a]pproximately 200 wells have been drilled in this area since 1868.” [AR 2326.] [See fn. 16, *post.*]

In consideration of anticipated air quality impacts of the proposed CUP-3543 permit renewal, the SEIR concludes that **“no new impacts or impacts different from what was evaluated in the 1983 EIR would occur with project implementation.”** [AR 538.] Mirada’s proposed reduction in weekly truck trips than previously permitted in 1983 would, according to the SEIR, result in “reduction of potential diesel exhaust emissions due to [oil field] fluid transport.” [AR 538.]

The specific air quality mitigation regimen required for Agoil’s oil field production equipment in the 1983 CUP was deemed in the SEIR to have been supplanted by regulations issued by the Ventura County Pollution Control District (“VCAPCD”). [AR 537.] According to the SEIR (contrary to the analysis in 1983), **oil wells, well tanks, gas flaring operations and local pipelines “are not considered [by VCAPCD] to have the potential to cause a project-specific or cumulative significant impact on air quality....”** [AR 537.] The SEIR quotes VCAPCD Guidelines to support this proposition:

“The Guidelines are not applicable to equipment or operations required to have Ventura County APCD permits (Authority to Construct or Permit to Operate).”

“Moreover, the emissions from equipment or operations requiring APCD permits are not counted towards the air quality thresholds. This is for two reasons. First, such equipment or processes are subject to the District’s New Source Review permit system, which is designed to produce a net air quality improvement. Second, facilities are required to mitigate emissions from equipment or processes subject to APCD permit by using emission offsets and by installing Best Available Control Technology (BACT) on the process or equipment.” [Emphasis added.] [AR 538.]

With respect to traffic circulation and safety, the SEIR notes the County’s 1983 finding that “the movement of large vehicles at the intersection of State Route 150 and Koenigstein Road could create unsafe conditions.” [AR 538.] As noted by the County in its 1977 analysis:

“The Public Works Agency states that ‘the intersection of Koenigstein Road and Highway 150 has a seriously deficient intersection configuration, partially due to the bridge on Koenigstein Road being immediately adjacent to Highway 150. Said bridge has a narrow width and no turning radii to facilitate turning movements. Most vehicles must come to a stop on Highway 150 to make the turn and if the vehicle is on the bridge, the condition

becomes significantly worse. Public Works states the trucks cannot make this turn without serious problems.

Koenigstein Road has varying widths of paving over the straight route to the subject site. One section of paving is only 14 feet wide, a situation which presents a potential hazard for vehicles driving in opposite directions. ...

The Public Works Agency states that the present road and bridge configurations are substantially below standard and create serious traffic safety problems... Also, Public Works states that **the adequacy of the bridge is not primarily related to numbers of vehicles but to basic minimum road geometrics**; that if the applicant chooses to use an alternate, approved access route, then this would ...solve the problem.” [Emphasis added.] [AR 2328-2329.]

While there is no suggestion in the administrative record that the construction, geometrics or breadth of Koenigstein Road or its bridge at the intersection of State Highway 150 was in any way changed or modified since 1977, the County concluded in the 2013 SEIR review that “Koenigstein Road (including the bridge over Sisar Creek) can be safely used by large trucks” operating under CUP-3543. [AR 540.] This revised finding is based upon the interim unpermitted use of Koenigstein Road where, between 2002 and 2013, “only two accidents occurred at the subject intersection and neither involved trucks.” [AR 541.]⁶

The SEIR calculates that between 2003 and 2013, tanker trucks made a turn at the intersection of Koenigstein and State Highway 150 (albeit in violation of CUP-3543) between 1603 and 2886 times. [AR 542-543.] As opined in the SEIR:

“No reported accidents involving these trucks occurred. Given this record, it can be concluded that there is no substantial evidence that the use of Koenigstein Road/State Highway 150 intersection by oil-related large trucks represents a significant impact on traffic safety.” [Emphasis added.] [AR 543.]

The SEIR notes that the proposed reduction in permitted traffic trips would reduce the number of “baseline” truck trips on State Highway 150. [AR 545.] With respect to Koenigstein Road, the SEIR determined that the additional vehicular load “is minimal and does not have the potential to cause a significant impact on traffic circulation or constitute a cumulatively considerable contribution to overall traffic volumes.” [*Id.*]

⁶ The “only two accidents” reported by the SEIR at the intersection during the referenced time frame were both injury accidents. [AR 902.]

The traffic safety findings are supported by a two-page memorandum from the County Public Works Agency dated December 4, 2014. [AR 872-873.]

Public comments were submitted in response to the draft SEIR. [AR 2027-2135.] Among the written comments included communications from petitioner Citizens For Responsible Oil & Gas ("petitioner"). The concerns expressed by petitioner included traffic safety at the Koenigstein Road/State Highway 150 intersection. [AR 1453-1456, 1460.]

On June 12, 2015, a letter was submitted by the branch chief of responsible agency Caltrans upon its review of the SEIR. According to the Caltrans letter, in pertinent part:

"Although the number of tanker truck trips would be minimal and there haven't been any accidents involving tanker trucks at the intersection of Koenigstein Road and State Route 150, Caltrans is concerned with sight distance along State 150. The turning radius may not be adequate to accommodate a right turn from SR-150 on Koenigstein Road without encroaching onto the opposite lane. Caltrans requests installation of warning flashing lights and signs in both directions approaching the Koenigstein Road intersection."

"Caltrans recommends widening of the Sisar Creek Bridge to improve tanker truck ingress and egress movements from State Route 150 to Koenigstein Rd. Please coordinate with Caltrans to determine the feasibility of the bridge widening⁷ and/or other mitigation alternatives." [Emphasis added.] [AR 5526-5527.]

Mirada's permit renewal application came to hearing before a subordinate employee of the Ventura County Planning Director on October 27, 2015. [AR 3710.] A supervisor's assistant questioned the consistency of the project with county zoning ordinances, and cited oil and gas guidelines directing oil and gas well production to be piped to a centralized processing location, rather than being trucked (oil) and flared (gas) as proposed under CUP-3543. [AR 3719.]

⁷ In support of the proposed permit modification to allow CUP-3543 oil trucks to use Koenigstein Road, the County submitted a videotape of a truck turning right at the Koenigstein Road/ State Highway 150 intersection. [AR 3935.] Because of the limited width of the bridge over Sisar Creek in close proximity to Highway 150, viewers described the video as showing the truck's inability to stay in its proper lane [AR 3936, 3975], hence Caltrans' concern with "turning radius." Further, the video also allegedly shows difficulties presented by such a turn to oncoming traffic on the state highway. [AR 3936.]

On November 16, 2015, the Planning Director, through his employee designee, granted the CUP-3543 modification/extension, certified the EIR, and made required CEQA findings. [AR 220-224.] There is no indication in the record that the County attempted to discuss the feasibility of traffic impact mitigation measures with Caltrans.

The decision of the Planning Director was appealed. [AR 5562-5563.] Petitioner at that point contended that the SEIR was inconsistent with the Ojai Valley Area Plan (“OVAP”) component of the county general plan. [AR 2782.] The Planning Director conceded that his case planner/hearing officer had “erred” in properly mapping OVAP boundaries, vacated the case planner’s earlier CEQA approval, and deferred project determination to a “*de novo*” hearing before the Ventura County Planning Commission (“Planning Commission”). [AR 3859.]

Petitioner followed with a letter to the Planning Commission dated April 4, 2016, raising a number of additional issues, and elaborating upon others. [AR 3260-3267.]

Petitioner asserted, *inter alia*, that site-specific air pollution emissions from the proposed oil wells and associated facilities were not addressed in the SEIR, as allegedly required by the Ojai Valley Area Plan (“OVAP”). [AR 3260-3262.] Petitioner noted that **“the three proposed oil wells would [individually] emit 2 pounds each day of ROC/NO_x for a total of 6 pounds per day of ROC/NO_x air pollution into the Ojai Valley air shed.”** [*Id.*] Under the OVAP portion of the Ventura County General Plan, discretionary development in the Ojai Valley “shall be found to have **a significant adverse impact on the regional air quality if daily emissions will be greater than 5 pounds per day** of Reactive Organic compounds (ROC) and/or greater than 5 pounds per day of Nitrogen Oxides (NO_x).” [Emphasis added.]

Petitioner contended that **“any claim by the County that the air pollution from the proposed oil wells would be mitigated below the level of significance (i.e. 5 pounds of ROC/NO_x) through the Air Pollution Control District ministerial permitting process must be scientifically quantified and otherwise documented within the publicly reviewable environmental impact report.”** [AR 3262.]

In addition to its earlier objections associated with the proposed tanker truck usage of Koenigstein Road, petitioner's letter to the planning commission cited the Ventura County Non-Coastal Zoning Ordinance (NCZO) oil development guidelines, which mandate the use of pipelines, not trucks, to transport petroleum products "whenever physically and economically feasible and practicable." [AR 3265.]. Petitioner noted that Mirada uses such transport pipelines on other permits locally, and criticized the SEIR's lack of discussion on its conclusory finding of "infeasibility," other than low production from existing wells. [*Id.*]

The Planning Commission hearing was conducted on April 7, 2016. [AR 3858-3923.] The earlier hearing officer, now advocating on behalf of the County, contended that **oil and gas operations within the County are exempt from numerical air quality "thresholds of significance"** identified as a "significant" environmental impact under its general plan, and are **instead subject to the ministerial permitting requirements** of the Ventura County Air Pollution Control District ("VCAPCD"). [AR 3861-3864.] The VCAPCD permitting requirements, as interpreted by the County, are by their very nature intended to mitigate local air quality impacts to levels of environmental insignificance. [AR 3823.]⁸

VCAPCD testified that as to all proposed new emissions in excess of County threshold standards, **VCAPCD requires "emission reduction credits" designed to offset the proposed emissions increase** through "banking" of existing emissions sources taken off line or subject to more stringent emissions controls. [AR 3866-3867.] A former UCLA professor of air pollution control and environmental health sciences took issue with that testimony, **characterizing the VCAPCD guidelines as "advisory only", and the "emissions credit" program limited to "[v]ery large pollution sources" with no direct trade-off to the Ojai Valley.** [AR 3893.]

⁸ Stated in what is now arguably "presidential" simplicity, rather than attempt to quantify site specific CUP-3543 air quality impacts as the County had done in 1983 [AR 262], the county hearing officer/project advocate summarily stated to the Planning Commission in 2016: "The [project's] air emissions are so small.... There's no concern whatsoever over the air emissions...." [AR 3864.]

The Planning Director's designated hearing officer testified that one-half of all ROC emissions in the immediate vicinity of CUP-3543 result from "natural oil and gas seeps occurring on Sulfur Mountain." [AR 3875.] The same county employee testified "there's no legal nexus to require a pipeline [for CUP-3543], because there's a public road available, and... we haven't identified any reason why [Mirada] can't use the public road." [Id.] While there are oil and gas pipelines in the immediate vicinity, the employee further testified that the nearby pipelines were "private and proprietary" to the company owning the lines. [Id.] Finally, though Mirada and its predecessors had been in violation of the roadway restrictions of CUP-3543 since 1995, the County's advocate found no issue "as long as [Mirada is] pursuing abatement of their violation through this permit [modification application]." [AR 3876.]⁹

The Planning Commission approved the renewal and modification of CUP-3543 by a 4-1 vote. [AR 2834.] Petitioner timely appealed the Planning Commission approval to the Ventura County Board of Supervisors ("Board of Supervisors"). [AR 2835.]

The Board of Supervisors hearing was conducted on June 21, 2016. [AR 3924.] The designated hearing officer on the nullified Planning Director decision [see fn. 9, below] once again advocated county planning staff's support of permit reissuance. [AR 3525-3529.] At this hearing, the employee contended that the county general plan redirects any air quality impacts from oil operations to VCAPCD's air quality assessment guidelines. [AR 3927-3928.] According to the county representative, *inter alia*, the guidelines state: "The [threshold ROC/NOx limits] are *not applicable* to equipment or operations required to have Ventura County APCD permits." [Id.]

The VCAPCD representative expanded upon his earlier testimony, conceding that while new sources of air pollution emissions must be offset by "emission reduction

⁹ The very same county department employee protectively advocating CUP-3543 permit reissuance before the Planning Commission [see, e.g. AR 3875-3876] and ultimately the Board of Supervisors [AR 3925-3929], was the "impartial" designated hearing officer previously conducting and deciding the initial hearing on the permit application. [AR 220-223, 3710-3729.] While it is not an issue on this writ application because the initial determination of CEQA compliance was ultimately vacated by the Planning Director with *de novo* consideration by the Planning Commission, the transcript of the initial hearing suggests considerable antipathy by that hearing officer toward both the CEQA process and the concerns of local residents. [Id.]

credits,” there is an **exemption from obtaining offset credits** for “small facilities” (such as Mirada). [AR 3929.] According to the VCAPCD, this lack of duty on behalf of Mirada is nevertheless compensated for by “larger sources” of pollution on other permits offsetting at a ratio of 1:1.1 [*Id.*] VCAPCD attempted to assure the Board of Supervisors on the wisdom of this countywide and largely opaque debit/credit ledger system by asserting that Ventura County is “on pace” to reduce ozone levels to maximum federal thresholds, and that “I think we have some of the best rules in place in the country.” [AR 3930.]

With respect to the proposed revised Koenigstein Road access, misrepresenting his own planning department files [AR 5110-5113], the county hearing officer/advocate testified to the Board of Supervisors that “no complaints have been filed and we didn’t get a complaint until the [modified] project was before us....” [AR 3932.] According to the county hearing officer/advocate, the alternate access requirement on Koenigstein Road evolved via consensus after “a lawsuit [and] a trip to the Supreme Court,”¹⁰ but that in the final analysis “the... minimal volume of [truck] traffic makes it very unlikely that you’re going to induce some kind of a severe safety hazard.” [AR 3932.]¹¹ The county’s assertion of lack of truck safety hazard was contradicted by residents of the area. [See, *e.g.*, AR 5571.]

Regarding testimony of feasibility of connecting CUP-3543 production to an oil pipeline, the county hearing officer/advocate responded that projected production from the proposed three additional oil wells “is not anything that Exxon would be interested in.” [AR 3940.] With respect to exceeding the 5 pound per day ROC/NO_x limit imposed by the OVAP for determining significant impacts in the Ojai Valley airshed, the county representative responded “the argument of air quality [sic] it really revolves around one additional pound per day ROC emissions as if we were at 4.99 in the general figure for

¹⁰ This court’s review of *Whitman* through multiple electronic sources has not suggested any subsequent case activity in either the state or federal Supreme Court.

¹¹ In actual fact, at the time of the January 13, 1976 approval of CUP-3543, specific permit conditions mandated “at least two flagmen to be stationed near the intersection of Koenigstein Road and Highway 150 during any time in which drilling rigs, tank trucks or other large trucks and equipment are being moved to or from the subject site.” [AR 20.] The alternate access allowance established post-*Whitman* alleviated this burden upon the permittee.

three oil wells [sic], then we'd be below the threshold, there wouldn't be any argument over air quality." [AR 3940.]

The air quality professor, Dr. Steven Colome, addressed the Board of Supervisors as to the vulnerability of Ojai Valley topography to excessive harmful emissions. [AR 3682-3693, 3955-3957.] Dr. Colome testified that the minimum amount of volatile hydrocarbon emissions from the three additional wells would be **six pounds per day "assuming best available control technology."** [AR 3955-3957.]

With respect to traffic impacts, petitioner requested that the County conduct a formal traffic study "by a licensed traffic engineer" evaluating the risk. [AR 3958-3959.] A retired petroleum engineer testified that installing a pipeline alternative down Koenigstein Road "would be a snap." [AR 3960.] The county's response was, **under the requirements of CEQA, "[y]ou're not required to look at alternatives** to a project which has no significant impacts." [AR 3969.]

By a 3-2 vote, the Board of Supervisors approved the CUP-3543 renewal/modification. The Board of Supervisors certified the Final SEIR, finding no significant impacts resulting from the project renewal/modification, including air quality and traffic safety. [AR 225-235.] Because of its findings of no significant impact, the Board of Supervisors did not consider project alternatives. [AR 231.]

The formal notice of determination ("NOD") was posted and delivered to the State Clearinghouse on June 23, 2016. [AR 14-16.] At some point after the June 21, 2016 project approval, Mirada transferred its interests in CUP-3543 to real party in interest Carbon California Company LLC ("real party").

STATEMENT OF THE CASE

Petitioner seeks writ of mandate under the Public Resources Code by a petition timely filed on July 21, 2016. The initiating petition was supplanted by an amended petition for writ of mandate ("FAP") filed on August 17, 2016. A verified answer filed by the County on March 20, 2017. A verified answer was filed by real party on March 21, 2017.

The FAP raises four issues under CEQA. First, petitioner alleges that the SEIR's discounting of significant ROC/NOx emission levels to undisclosed levels of insignificance in contemplation of subsequent VCAPCD facilities permitting contravenes the informational aspects of CEQA, as well as prohibitions against segmentation and deferred mitigation. (FAP, ¶¶66-79.) Second, petitioner alleges that conceded project emissions of a minimum of six pounds of ROC/NOx per day is *ipso facto* a significant impact under the OVAP portion of the county general plan, compelling discussion of reasonable air quality mitigation requirements in the environmental document. (FAP, ¶¶80-88.)

Third, petitioner contends that the County's 1983 CEQA findings of significance of traffic safety impacts on Koenigstein Road cannot be ignored, nor can the recommendations of Caltrans, because nothing has changed since 1983 other than the opinion of the Planning Department. (FAP, ¶¶ 89-113.) Petitioners claim that the lack of injury truck accidents while petitioner's predecessors have violated the terms of the previous CUP does not constitute sufficient "substantial evidence" upon which to base a finding of insignificance. (*Id.*) Finally, petitioner alleges that Miranda has more than one pending oil field permit application in close geographic proximity, running afoul of CEQA "piecemealing" concerns. (FAP, ¶¶114-119.)

The cause was fully briefed by petitioner and real party. Petitioner requests judicial notice of the OVAP, which land use document appears to have been inadvertently omitted from the certified administrative record. The request for judicial notice is granted.

The parties argued the issues at length before the court on September 1, 2017. The matter was taken under submission. This ruling follows.

I

THE COUNTY'S CLAIMED EXEMPTION OF ALL OIL AND GAS PROJECT EMISSIONS FROM CEQA AIR QUALITY IMPACT ANALYSIS CONTRAVENES STATE LAW

Under the CEQA Guidelines, “[e]ach public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects.” (14 Cal. Code Regs. §15064.7(a).) Consistent with state regulatory requirements, Ventura County adopts certain thresholds of significance in its general plan. Specifically, in its OVAP, which is a component part of the county general plan, the county’s air quality thresholds of significance in the Ojai Valley are as follows:

“Discretionary development in the Ojai Valley shall be found to have a significant adverse impact on the regional air quality if daily emissions would be greater than 5 pounds per day of Reactive Organic Compounds (ROC) and/or greater than 5 pounds per day of Nitrogen Oxides (NOx).” [Emphasis added; italics in original.] [Request For Judicial Notice (“RFJN”), at 15.]

In this case, county staff conceded that “[t]he proposed project would generate an estimated 6 pounds per day of new ROC emissions (i.e. 2 pounds per day for each new well.)” [AR 2807, see also AR 2138.] This estimate was confirmed by Professor Colome as a “minimum” “assuming best available control technology.” [AR 3955-3957.] As such, the proposed project should have been deemed a significant impact in terms of air quality, with concomitant CEQA-mandated discussions of mitigation and project alternatives.

The County, beyond its unpersuasive suggestions that its published air quality thresholds of significance in the Ojai Valley should be disregarded because 6 pounds per day is only slightly over an allowable 4.99 pounds per day ROC threshold [AR 2940] and because the project site is “just inside the [OVAP] boundary at the extreme eastern end” [AR 2925], relies principally upon its contention that the OVAP air quality thresholds of significance do not apply to oil and gas project emissions. [Real party’s brief, at 11-23.]

There is nothing in the OVAP itself exempting oil and gas projects from thresholds of air quality significance under CEQA. [RFJN 5-45.] OVAP makes direct reference to oil and gas exploration and production permits. [RFJN 16-17.]¹²

The County nevertheless reaches its conclusion of threshold of significance calculation exemption in light of a VCAPCD policy referenced only peripherally in its general plan. The linchpin of this position is the County's representation that the general plan "requires" compliance with the Air Quality Assessment Guidelines ("AQAGs") promulgated by VCAPCD. [Real party's brief, at 11-23.]¹³

The sole reference in the County's general plan to the AQAGs is arguably less definitive than suggested. According to the "Air Quality Management" provision of the County general plan:

"Another avenue of implementation of emission control measures is through the environmental review process (a standard step in the processing of discretionary entitlements). **The [VC]APCD has adopted the Guidelines for Preparation of Air Quality Analyses to enhance the effectiveness of the environmental review process. Adherence to the Guidelines will assist emission control efforts.**" [Emphasis added.] (County General Plan, at §1.2.2.)

The AQAGs were adopted in 2003. [AR 3011.]¹⁴ The introductory provisions of the AQAGs contain the following language, in pertinent part:

¹² Among other things, contrary to the proposed conditions of the reissued/modified CUP-3543, OVAP authorizes the "flaring" of gas "only in cases of emergency or for testing purposes." [RFJN 16.]

¹³ The administrative record does not contain the County general plan. Since the County and real party are relying upon the general plan as the basis for their argument that OVAP thresholds of significance are inapplicable to oil and gas projects, this court, on its own motion, judicially notices the content of the Ventura County General Plan. (Evid.C. §452(b).)

¹⁴ Taken to its logical conclusion, the County is contending that the CUP-3543 renewal/modification review would have been considered a CEQA "significant" impact for the three proposed new wells from 1995 when the OVAP was adopted, until 2003 when the AQAGs were adopted. Another logical extension of the County's argument is that on the day the AQAGs were adopted in 2003, reactive organic compounds emitted by the proposed three wells were somehow reduced from 6 pounds of ROC per day to zero pounds per day, or at least something less than 6 pounds per day, but no one is willing to say exactly how much.

“The Guidelines are not applicable to equipment or operations required to have Ventura County APCD permits (Authority to Construct or Permit to Operate). APCD permits are generally required for stationary and portable (non-vehicular) equipment or operations that may emit air pollutants. This permit system is separate from CEQA and involves reviewing equipment design, followed by inspections, to ensure that the equipment will be built and operated in compliance with APCD regulations. ...”

“Moreover, the emissions from equipment or operations requiring APCD permits are not counted towards the air quality significance thresholds. This is for two reasons. First, such equipment or processes are subject to the District's New Source Review permit system, which is designed to produce a net air quality improvement. Second, facilities are required to mitigate emissions from equipment or processes subject to APCD permit by using emission offsets and by installing Best Available Control Technology (BACT) on the process or equipment.”

“To determine whether or not the proposed equipment or operation requires an APCD Permit, contact the APCD Engineering Division at 805/645-1401. Table 1-1 lists examples of equipment and operations that may require an APCD permit pursuant to the APCD Rules and Regulations. See Appendix B, Common Equipment and Processes Requiring a Ventura County APCD Permit To Operate, for more a more detailed list of processes and equipment that require an APCD Permit to Operate” [AR 3022-3023.]

Referenced Table 1-1 identifies, *inter alia*, “gasoline tanks” as one of the items of equipment requiring VCAPCD permit. Appendix B to the AQAGs includes within its chart “[e]ngines which are 50 HP or greater including but not limited to... [o]il well and water well drilling rigs;... [w]aste gas flares; and “gasoline tanks” with a capacity of greater than 250 gallons. [AR 3127.]

Chapter 3 of the AQAGs, entitled “Air Quality Significance Thresholds,” states that **“a project will have a ‘potentially significant impact on air quality if it will:...[v]iolate any air quality standard.”** [AR 3050.] The county’s air quality standards are once again reiterated in the AQAGs:

“ Ozone (based on emission levels of reactive organic compounds and oxides of nitrogen)

The following are the reactive organic compounds (ROC) and nitrogen oxides (NOx) thresholds that the Ventura County Air Pollution Control Board has determined will individually and cumulatively jeopardize attainment of the federal one-hour ozone standard, and thus have a significant adverse impact on air

quality in Ventura County. Chapter 5, Estimating Ozone Precursor Emissions, presents procedures for estimating project emissions.

(a) Ojai Planning Area*

Reactive Organic Compounds: 5 pounds per day

Nitrogen Oxides: 5 pounds per day

(b) Remainder of Ventura County**

Reactive Organic Compounds: 25 pounds per day

Nitrogen Oxides: 25 pounds per day

* The Ojai Planning Area is the area defined as the ‘Ojai Valley’ in Ventura County Non-Coastal Zoning Ordinance, Article 12, Section 8112-2... .” [Emphasis added.][AR 3051-3052.]

Based upon its assumption that the undisputed 6 pounds of project-related ROC produced per day resulting from the additional three oil wells *are exempt by County policy* from otherwise mandatory findings of CEQA significance, the County here found project-related and cumulative air quality impacts of the CUP-3543 renewal/modification to be “less than significant.” [AR 519, 537-538.] In the absence of a finding of significance, as noted by the County, there is no duty under CEQA to consider project-related mitigation or alternatives. [AR 3969.]

Legal analysis typically begins with the CEQA “baseline,” which the litigants agree in this case should be the *de facto* physical condition of the land at the time of the CEQA analysis, as opposed to “allowable conditions defined by a [previously existing] plan or regulatory framework.” *Communities for a Better Environment v. South Coast Air Quality Management District* (2010) 48 Cal.4th 310, 320-321.

“The fundamental goal of an EIR is to inform decision makers and the public of any significant adverse effects a project is likely to have on the physical environment. *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal. 4th 439, 447 (“*Smart Rail*”); As stated by the California Supreme Court in *Smart Rail*:

“An omission in an EIR’s significant impacts analysis is deemed prejudicial if it deprived the public and decision makers of substantial relevant information about the project’s likely adverse impacts. ... “A prejudicial abuse of discretion occurs if the failure to include relevant information precludes informed decisionmaking

and informed public participation, thereby thwarting the statutory goals of the EIR process.” (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal. App. 3d 692, 712.)

The lead agency, in this case the County, is responsible for determining whether an adverse environmental effect identified in an EIR should be classified as “significant” or “less than significant.” (14 Cal. Code Regs. §15064(b).) In making that determination, the lead agency has the discretion to formulate standards of significance. *Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal. App. 4th 1059, 1068 (“*Save Cuyama Valley*”).

The County having unequivocally adopted quantitative air quality thresholds of significance in the Ojai Valley through the adoption of the OVAP (see 14 Cal. Code Regs. §15064.7), the issue becomes whether the County can fairly disregard the 6 lb./day OVAP threshold where, as here, there is a competing policy through VCAPCD to completely exempt oil and gas projects when calculating ROC/NOx emissions.

While the Board of Supervisors certainly has the discretion to raise (or lower) thresholds of significance across the Ojai Valley, the discretion to change boundary lines as to those lands located within the protected OVAP, and the discretion to apply its own judgment in determining an appropriate standard of significance where no threshold standard is set, the blanket VCAPCD exemption rule for all oil and gas project emissions effectively **avoids setting any standard of significance simply because the application involves oil and gas emissions, relying instead upon the ministerial permitting practices of VCAPCD to provide required mitigation.** This protocol, while expedient because it sidesteps project-specific CEQA mitigation and alternatives analysis on oil and gas permits, is an **abdication of the lead agency’s responsibility in the environmental document to consider and inform the public as to project-related health risks and the steps being taken, if any, to mitigate those risks.**

According to the California Supreme Court in *Banning Ranch Conservancy v. City of Newport Beach* (2017) 2 Cal. 5th 918, 935 (“*Banning Ranch*”):

“[A]n agency may abuse its discretion under CEQA either by failing to proceed in the manner CEQA provides or by reaching factual conclusions unsupported by substantial evidence. ([Pub. Res. C.] § 21168.5.) Judicial review of these two types

of error differs significantly: While we determine *de novo* whether the agency has employed the correct procedures, ‘scrupulously enforc[ing] all legislatively mandated CEQA requirements’ [citation]), we accord greater deference to the agency’s substantive factual conclusions. In reviewing for substantial evidence, the reviewing court ‘may not set aside an agency’s approval of an EIR on the ground that an opposite conclusion would have been equally or more reasonable,’ for, on factual questions, our task ‘is not to weigh conflicting evidence and determine who has the better argument.’ [Citations.]”

“Whether an EIR has omitted essential information is a procedural question subject to *de novo* review. [Citations.]” [Emphasis added.]

Within the topographical and epidemiological context of the Ojai Valley, the SEIR omits essential information regarding health risks associated with the additional 6 pounds/day in emissions from the proposed oil wells, without even considering emissions from the proposed flaring. As noted in the AQAGs, in pertinent part:

“Ventura County is a severe nonattainment area for the federal and state one-hour ozone standards, and has been recommended by the ARB as a nonattainment area for the federal eight-hour ozone standard. ... Although ozone levels have declined significantly in recent years, the county still experiences frequent violations of the state ozone standard. Inland areas ... exceed the ozone standard more frequently than the coastal areas.” [AR 3032.]

The uncontroverted health impacts of air pollution are recognized in the AQAGs:

“Ambient air pollution is a major public health concern....

“According to the ARB, 80,000 deaths that occur each year in California may be attributed to illnesses aggravated by air pollution. While air pollution affects everyone, some people are more susceptible to its effects than others. Research has established that air pollution:

- *Aggravates heart and lung illnesses.**
- *Adds stress to the cardiovascular system**, forcing the heart and lungs to work harder to provide oxygen to the body.
- *Speeds the aging process** of the lungs, accelerating the loss of lung capacity.
- *Damages respiratory system cells** even after symptoms of minor irritation disappear.
- *May cause immunological changes.**
- *Causes lung inflammation.**
- *Increases health care utilization** (hospitalization, physician, and emergency room visits).

***May contribute to the development of diseases such as asthma, bronchitis, emphysema, and cancer.**

***May cause a reduction in life span.**

“The federal government estimates that **between 10 and 12 percent of United States total health costs are attributable to air pollution-related illnesses.** Air pollution is thought to be responsible for a two percent loss in United States worker efficiency. If ozone pollution were reduced in urban areas, there would be approximately 49.9 million fewer cases of air pollution-related illnesses annually in the United States; asthma attacks alone would decrease by 1.9 million annually.” [AR 3037.]

The pollutants in question, ROC and NOx, are the principal constituents of ozone. [AR 3040.] According to the AQAGs, in relevant part:

“The major sources of ROC in Ventura County are motor vehicles, cleaning and coding operations, petroleum production and marketing operations, and solvent evaporation.

Ozone is a strong irritating gas that can **chemically burn and cause narrowing of airways,** forcing the lungs and heart to work harder to provide oxygen to the body. A powerful oxidant, **ozone is capable of destroying organic matter – including human lung and airway tissue; essentially burns through cell walls.** Ozone damages cells in the lungs, making the passages inflamed and swollen. **Ozone causes shortness of breath, nasal congestion, coughing, eye irritation, sore throat, headache, chest discomfort, breathing pain, throat dryness, wheezing, fatigue, and nausea....** Ozone has been associated with a decrease in resistance to infections. **People most likely to be affected by ozone include the elderly, children and athletes. Ozone may pose its worst health threat to people who already suffer from respiratory diseases** such as asthma, emphysema, and chronic bronchitis.” [AR 3040-3041.] [Emphasis added.]

According to the testimony of Dr. Colome, the permit area is **“extremely vulnerable to harmful [ROC/NOx] emissions** due to the topography of the Ojai Valley, within the unique context of its mountains, wind patterns, temperature inversions and other topographic/meteorological factors, all trapping harmful air contaminants to the detriment of its residents. [AR 3956.] As concluded by Dr. Colome before the Board of Supervisors:

“The emission factor that [VCAPCD] uses is 2 pounds per day per pump jack. That assumes we have the best available control technology. It assumes that the permittee is in compliance with all conditions. It assumes that there are no leaks or accidents that are occurring. The ... lease **will pump every 6 pounds of volatile hydrocarbons [each day] into the Upper Ojai-Koenigstein neighborhood. That’s simply a fact. ...The SEIR does not acknowledge these**

real emissions and passes them off for subsequent ministerial review by the APCD... So take home three messages; first, that there is a **topographical vulnerability to the Ojai Valley**; second, that the [Mirada] **proposal represents new and real omissions of reactive hydrocarbons that exceed 5 pounds per day** – please don’t be misled by convoluted explanations by staff to the contrary – third, the outdated 1983 EIR – 33 years old – [is] an incomplete and seriously inadequate EIR [which] does not satisfy the requirements of CEQA.” [AR 3956-3957.] [Emphasis added.]

The contention by the County that air emissions associated with oil and gas drilling in the Ojai Valley can be calculated and mitigated internally through VCAPCD permitting *after permitting approval* contravenes a basic principle of CEQA integration. As recently held by the Supreme Court in *Banning Ranch, supra*:

“CEQA sets out a fundamental policy requiring local agencies to “integrate the requirements of this division with planning and environmental review procedures otherwise required by law or by local practice so that all those procedures, to the maximum feasible extent, run concurrently, rather than consecutively.” (§ 21003, subd. (a).) The CEQA guidelines similarly specify that “[t]o the extent possible, the EIR process should be combined with the existing planning, review, and project approval process used by each public agency.” (*Guidelines*, § 15080.)” (2 Cal.5th at 936.)

The County’s error in failing to qualify and analyze air emissions from the proposed oil wells and the associated gas “flaring” in the SEIR document was prejudicial. **“Evaluation of project alternatives and mitigation measures is ‘[t]he core of an EIR’.”** (*Banning Ranch, supra*, 2 Cal.5th at 937.) By failing, if not outright refusing, to quantify what would otherwise be a significant site-specific air quality impact under its general plan, and then relying upon the mantra that “[y]ou’re not required to look at alternatives to a project which has no significant impacts [AR 3969],” the County deprived the public not only of information associated with critical of public health concerns, but stripped CEQA of its core objectives of analyzing project-specific mitigation and alternatives.

Beyond the project-specific significance of the air quality impacts of CUP-3543 extension/modification under the OVAP, the Board of Supervisors repeats history by again refusing to analyze the significant *cumulative air quality* impacts of CUP-3543 with other new oil and gas projects within the immediate airshed, including another

recent project of Mirada, PL 13-0158, involving nine new oil wells, and a Vintage Petroleum project, PL 13-0150, involving nineteen new oil wells. [AR 1558-1560.]¹⁵

As the Court of Appeal in 1978 was perplexed by the County's failure to address five additional oil wells in *Whitman*, *supra*, here there appears to be no less than 28 additional oil wells in the vicinity as to which the County again refuses to discuss in the context of cumulative impacts.¹⁶ The repeated but quantitatively vacant claim that the AQAGs *ipso facto* render all cumulative oil and gas emission calculations insignificant [AR 1558-1559] is unsupportable.¹⁷

II

GOOD FORTUNE IS NOT SUFFICIENT SUBSTANTIAL EVIDENCE TO CONVERT A SIGNIFICANT ENVIRONMENTAL TRAFFIC SAFETY IMPACT INTO AN "INSIGNIFICANT" ONE

This court is mindful that its task "is *not* to weigh conflicting evidence [before the administrative tribunal] and determine who has the better argument." (*Banning Ranch*,

¹⁵ A further casualty of the County's refusal to calculate oil and gas facility emissions as part of CEQA air quality thresholds of significance relates to the allowance in the new permit for gas flaring. The initial 1976 CUP-3543 permit conditions issued by the County had greatly restricted the right of the permittee to flare excess gas. According to initial permit condition 30: "[A] gas flare shall not be used unless there is no other possible method to get relief on the well, and then only in an emergency. For each flaring, a report detailing the emergency shall be provided to the Planning Director within one week of the subject emergency." [Emphasis added.] [AR 3700.] The reissued CUP-3543 permit proposes no such restriction, and further refuses to consider mitigation or alternatives associated with gas flaring because of its conclusion *ipse dixit* that any and all individual and cumulative air quality impacts are necessarily "insignificant."

¹⁶ The "drop in the bucket" argument used by the county representative here to the Board of Supervisors [AR 3931—"Just to put it again in sort of some perspective, the project ... would involve a six pounds per day of ROC relative to 9,000 pounds per day in the Ojai planning area and 4,500 pounds per day in the natural oil seeps that are right in the vicinity of the project. And remember, this is ... just so you can get some perspective as to how relative the size of this project is"] is an impact minimization tactic expressly disapproved by the Second Appellate District, Division Six, in *Save Cuyama Valley*, *supra*, 213 Cal. App. 4th at 1072.

¹⁷ The fact that Mirada is required by PL 13-0150 permit conditions to transport its oil and gas production by pipeline as opposed to truck consistent with OVAP policy [AR 1560], further highlights the deficiencies caused by the County's failure to analyze alternatives and mitigation with respect to air quality.

supra, 2 Cal. 5th at 935.) The issue on substantial evidence review is simply whether there is substantial evidence in the record to support the agency's decision.

“Under CEQA, ‘substantial evidence’ is defined to include ‘fact, a reasonable assumption predicated upon fact, or expert opinion supported by fact’([Pub.Res.C.]§ 21080, subd. (e)(1)), and ‘argument, speculation, unsubstantiated opinion or narrative, evidence that is clearly inaccurate or erroneous, or evidence of social or economic impacts that do not contribute to, or are not caused by, physical impacts on the environment.’ ([Pub.Res.C.]§ 21080, subd. (e)(2).) ‘Substantial evidence’ is ‘enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached.’ ([14 Cal.Code Regs.] § 15384, subd. (a).)” *Committee for Re-Evaluation of T-Line Loop v. San Francisco Municipal Transportation Agency* (2016) 6 Cal.App.5th 1237, 1245 [fn. 12].

The administrative record in this case consists almost entirely, if not entirely, of uncontradicted evidence:

In May of 1976, an oil truck “accident” at the Koenigstein Road bridge adjacent to State Highway 150 “jammed the bridge” and closed the road for a meaningful period. [AR 4454.]

By 1977, the Ventura County Public Works Agency concluded that the intersection of Koenigstein Road and Highway 150 had a “**seriously deficient intersection configuration.**” [AR 2277.] Among other things, the bridge on Koenigstein Road “immediately adjacent to Highway 150” “has a narrow width and no turning radii to facilitate turning movements.” [*Id.*] The difficulty, according to the County, “becomes significantly worse” when vehicles turning onto Koenigstein Road encounter a vehicle on the bridge. [*Id.*] According to the County, in 1977 at least, “**trucks cannot make this turn without serious problems.**” [*Id.*]

Beyond problems with the Koenigstein Road bridge, according to the County in 1977, one section of paving “is only 14 feet wide, a situation which presents potential hazard for vehicles driving opposite directions...” [AR 2277.]

At the time of the initial 1980 EIR in the aftermath of a *mandamus* order from the Court of Appeal, truck traffic safety dangers at the intersection of Koenigstein Road and State Highway 150 resulted in a County permit condition that “[f]lagmen should be

required for movements of large vehicles at the intersection.” [AR 266.] By the time of the EIR associated with the 1983 permit modification, that condition was further mitigated by the County in order **to forbid oil trucks on Koenigstein Road altogether.** [AR 522, 526, 2341—“Condition 52 would prohibit truck traffic (over 3/4 ton) on Koenigstein Road.”]

There is *no evidence* in the administrative record presented that *any* ameliorative improvements were ever made to the Koenigstein Road bridge, nor was Koenigstein Road widened or otherwise improved, since the initial permit application by Phoenix in 1975. The further uncontradicted evidence in the administrative record is as follows:

After severe flooding in 1995, the successive CUP-3543 permit assignees *illegally* drove oil field tank trucks over Koenigstein Road, with minimal pushback from the County. [AR 518, 528, 533, 540, 3954, 5110-5113, 5289.] At the time the Mirada CUP-3543 renewal/modification application was filed on November 8, 2013, the permittee continued to impermissibly use Koenigstein Road in violation of permit conditions. [*Id.*]

The responsible public agency with unique expertise in state highway traffic safety, Caltrans, in its letter of June 12, 2015, noted its concern with “**sight distance** along State Route 150,” and the **adequacy of the turning radius** from Highway 150 onto Koenigstein Road “without encroaching onto the opposite lane.” [AR 5526-5527.] Caltrans’ branch chief requested “**installation of warning flashing lights and signs in both directions approaching the Koenigstein Road intersection,**” and recommended “**widening of the Sisar Creek Bridge to improve tanker truck ingress and egress movements from State 150 to Koenigstein Road.**” [AR 5527.]

In its response to Caltrans’ comments, the County in its final SEIR replies as follows:

“From 1995 to 2014, trucks were driven southward on Koenigstein Road and turned onto State Highway 150 an estimated 2,746 to 4,943 times. There is no record or other evidence of any accidents involving oil-related trucks during this period.” [AR 2054.] [Emphasis added.]

With respect to Caltrans’ state highway sight distance concerns, the County responded that its own staff had “determined that the sight distance at this intersection

was adequate *given the posted speed limit* and that warning lights [on the state highway] are not required given this available sight distance.” [Italics added.] [AR 2055.] The posted speed limit on the relevant portion of State Highway 150 at Koenigstein Road is 35 miles per hour. [AR 1945.] Any vehicle traveling eastward on State Highway 150 over 45 miles per hour at that location would have **insufficient sight distance** to accommodate an oil truck attempting to navigate the turn.¹⁸ There was no evidence presented whatsoever in the environmental documents of the speed vehicles actually travel on the relevant portion of State Highway 150.

Finally, with respect to the Koenigstein Road bridge over Sisar Creek and the adjacent to State Highway 150, the County responded to Caltrans comments that the 22.1 foot bridge width is “consistent with the range of lane widths recommended by the American Association of State Highway and Transportation Officials (AASHTO).” [AR 2055.] While that conclusion sounds authoritative, the underlying documentation from the County’s public works agency discusses only bridge length and truck weight, not width. [AR 1944-1949.] Further, this County response to comments, intentionally or otherwise, misstates generic minimum roadway *lane* width standards as AASHTO minimum *bridge* width standards.

The AASHTO bridge width standard, confirmed through both federal and state AASHTO reference, is that “[t]he roadway width shall generally equal the width of the approach roadway section including shoulders.”¹⁹ Nowhere in the administrative record, at least that this court could locate, is there an analysis of the width of the

¹⁸ California Department of Transportation Highway Design Manual
<http://www.dot.ca.gov/design/manuals/hdm/chp0200.pdf>
The court takes judicial notice of what appears to be undisputed and nationally applied AASHTO road traffic “sight distance” standards. (Evid.C. §452(h)).

¹⁹ American Association of State Highway and Transportation Officials (17th ed. 2002)
http://bofddata.fire.ca.gov/regulations/regulations_file_library/regulation_files_301-350/347%20B_2%20of%204.pdf
Also, <http://www.dot.ca.gov/hq/esc/techpubs/manual/bridgemanuals/bridge-design-specifications/page/section2.pdf>
The court takes judicial notice of what appears to be undisputed and nationally applied AASHTO road traffic “bridge width” standards. (Evid.C. §452(h)).

approach roadways, including shoulders, on both sides of the Koenigstein Road bridge at its intersection with State Highway 150.

As noted by one member of the Board of Supervisors at the public hearing [AR 3933-3934], there was no testimony presented *by any traffic safety expert* that the intersection at Koenigstein Road and State Highway 150 would be safe to accommodate the proposed permit reassurance/modification uses in the absence of any mitigation. The county representative advocating the purported insignificance of traffic safety impacts before the Board of Supervisors was a self-represented geologist, not a civil engineer. [AR 3925.]

The issue boils down to whether 2,746 to 4,943 illegal truck turns without a reported injury accident between 1995 and 2014 [AR 2054] constitutes substantial evidence of an insignificant traffic impact under CEQA, despite the County's own prior expert opinion that it is a "seriously deficient intersection configuration " one where "trucks cannot make this turn without serious problems." [AR 2277.]

The County provided no modeling analysis of oil and drilling truck turns onto and off of the narrow Koenigstein Road bridge in light of the range of actual highway traffic speeds along that section of State Highway 150. The County offered up not one current expert from its public works agency to confirm its claimed lack of significant safety concerns over the intersection, despite availability of those employees and a request from the Board of Supervisors to have them testify. The County further completely ignored the mitigation recommendations of the state agency, Caltrans, which has responsibility for assuring state highway traffic safety.

While 2,476 to 4,943 truck trips sounds like a meaningful number, numbers mean nothing in the absence of context. The only reported accidents at the Koenigstein Road/ State Highway 150 intersection during the time frame in question from the database cited by the County involved *injury* accidents. [AR 902.] According to the National Highway Traffic Safety Administration, in its most recent statistics (2015), **for every 100 million**

motor vehicle miles driven, there are 4.47 people injured in truck and bus crashes.²⁰

Because such injuries from truck collisions are arguably *infrequent* over 100,000,000 motor vehicle miles driven [AR 902]²¹, the statistical value of 2,476 to 4,943 injury-free rural truck trips seems to have only tangential correlation, if any, to a concededly “seriously deficient intersection configuration.” What is relevant is how frequently, given this peculiar narrow bridge/State Highway configuration, an injury accident would be expected, and whether that frequency would be deemed a significant traffic safety impact under CEQA.

What the successive CUP-3543 permittees have enjoyed since 1995 by illegally driving oil trucks on Koenigstein Road is a lack of oil truck-related injury accidents. Good luck is not substantial evidence. The County’s CEQA findings as to “insignificant” traffic safety impacts due to the proposed project modification is without adequate evidentiary support.

III

THE SEIR MUST BE REVISED TO ANALYZE SIGNIFICANT AIR QUALITY AND TRAFFIC SAFETY IMPACTS, INCLUDING APPROPRIATE PROJECT MITIGATION AND ALTERNATIVES

The court is empathetic to the Board majority’s stated motivation in its CEQA deliberation that “[its] job is to try to drive economics, give jobs” [AR 3978]. The Board’s *obligation* under CEQA, however, is to fully inform the public as to the environmental impacts of proposed projects and, where significant public health and safety issues are implicated, to properly consider project mitigation and alternatives.

For reasons set forth in Section I above, the County failed to proceed in the manner required by law through its blanket exclusion of all oil and gas project emissions in determining significance of project impacts upon Ojai Valley air quality. The County further failed to proceed in the manner required by law by refusing to deem the project’s

²⁰ <https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/safety/data-and-statistics/Large-Truck-and-Bus-Crash-Facts-2015.pdf>

proposed increases from baseline emissions as significant in direct contravention of its own thresholds of significance under the OVAP component of the county general plan.


For reasons set forth in Section II above, substantial evidence in the record supports only a conclusion under CEQA of significant traffic safety impacts at the intersection of the Koenigstein Road bridge and State Highway 150, notwithstanding good fortune in not injuring people as they have violated permit conditions year in and year out.

The County is ordered to set aside its notice of determination filed June 23, 2016, and its associated project approval and findings, and is directed to issue a revised SEIR consistent with CEQA requirements and this ruling.

Petitioners are directed to prepare a judgment granting peremptory writ of mandate and injunction for this court's signature, to be delivered within ten days.

The clerk shall give notice.

Dated: November 14, 2017



GLEN M. REISER
Judge of the Superior Court

SUPERIOR COURT OF CALIFORNIA, COUNTY OF VENTURA
4353 East Vineyard Avenue
Oxnard CA 93036

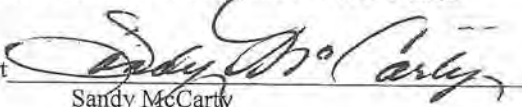
Citizens for Responsible Oil & Gas v. County of Ventura

Case No.: 56-2016-00484423

CLERK'S CERTIFICATE OF SERVICE BY MAIL

I certify that I am not a party to this cause. I certify that a true copy of the **ORDER ON AMENDED PETITION FOR WRIT OF MANDATE** was mailed following standard court practices in a sealed envelope with postage fully prepaid, addressed as indicated below. The mailing and this certification occurred at Oxnard, California, on 11/14/17.

Clerk of the Court


Sandy McCarty

Attorneys for Petitioner Citizens for Responsible Oil & Gas

DOUGLAS P CARSTENS
AMY MINTEER
MICHELLE BLACK
CHATTEN-BROWN & CARSTENS LLP
2200 PACIFIC COAST HIGHWAY 318
HERMOSA BEACH CA 90254
DPC@cbcearthlaw.com
JRCB@cbcearthlaw.com
MNB@cbcearthlaw.com

Attorney for Respondent, County of Ventura

LINDA K ASH
JEFFREY BARNES
OFFICE OF THE COUNTY COUNSEL
800 S VICTORIA AVENUE
VENTURA CA 93009
Linda.Ash@ventura.org
Jeffrey.Barnes@ventura.org

Attorneys for Real Party in Interest Carbon California Company, LLC

GINETTA L GIOVINCO
WHITNEY G MCDONALD
MARVIN E BONILLA
RICHARDS WATSON GERSHON
847 MONTEREY STREET 201
SAN LUIS OBISPO CA 93401
ggiovinco@rwglaw.com
wmcdonald@rwglaw.com
mbonilla@rwglaw.com

SUPERIOR COURT OF CALIFORNIA, COUNTY OF VENTURA
4353 East Vineyard Avenue
Oxnard CA 93036

Citizens for Responsible Oil & Gas v. County of Ventura

Case No.: 56-2016-00484423

CLERK'S CERTIFICATE OF SERVICE BY MAIL

I certify that I am not a party to this cause. I certify that a true copy of the **JUDGMENT** was mailed following standard court practices in a sealed envelope with postage fully prepaid, addressed as indicated below. The mailing and this certification occurred at Oxnard, California, on 12/4/17.

Clerk of the Court


Sandy McCarty

Attorneys for Petitioner Citizens for Responsible Oil & Gas

DOUGLAS P CARSTENS
AMY MINTEER
MICHELLE BLACK
CHATTEN-BROWN & CARSTENS LLP
2200 PACIFIC COAST HIGHWAY 318
HERMOSA BEACH CA 90254
DPC@cbcearthlaw.com
JRCB@cbcearthlaw.com
MNB@cbcearthlaw.com

Attorney for Respondent, County of Ventura

LINDA K ASH
JEFFREY BARNES
OFFICE OF THE COUNTY COUNSEL
800 S VICTORIA AVENUE
VENTURA CA 93009
Linda.Ash@ventura.org
Jeffrey.Barnes@ventura.org

Attorneys for Real Party in Interest Carbon California Company, LLC

GINETTA L GIOVINCO
WHITNEY G MCDONALD
MARVIN E BONILLA
RICHARDS WATSON GERSHON
847 MONTEREY STREET 201
SAN LUIS OBISPO CA 93401
ggiovinco@rwglaw.com
wmcdonald@rwglaw.com
mbonilla@rwglaw.com

Appendix B

Air Quality Impact Assessment

Updated Air Quality Impact Assessment, May 29, 2019

Air Quality Impact Assessment, January 2, 2019

Sespe Consulting, Inc.

May 29, 2019

Jane Farkas
Director of Land and Regulatory Affairs
Carbon California Company
270 Quail Ct., Suite B
Santa Paula, CA 93060

**Re: Updated Air Quality Impact Assessment
Carbon California Company – Agnew Lease**

Dear Ms. Farkas:

This Updated Air Quality Impact Assessment (AQIA) has been prepared to update a previous AQIA dated January 2, 2019 and prepared by Sespe Consulting, Inc. (Sespe) for the Agnew Lease (Facility) operations. The previous AQIA quantified and determined the significance of air quality impacts associated with the following Facility operations:

- The continued operation and production of the three (3) existing wells, including the proposed re-drill of one of the existing wells,
- The drilling (construction) and operation of three (3) new oil wells and associated production activities,
- The vehicle miles traveled (VMT) off-site and on-site for the transport of oil and wastewater,
- The vehicle miles traveled (VMT) off-site and on-site for the transport of drilling equipment during construction.

Since the preparation of the January 2, 2019 AQIA, the project applicant revised the proposed project description such that only two (2) new oil wells are proposed to be drilled and operated at the project site. This AQIA provides revised emissions estimates for the operation and associated production activities of two (2) new oil wells (Project).

1.0 SIGNIFICANCE THRESHOLDS

The VCAPCD's Ventura County Air Quality Assessment Guidelines (VCAPCD Guidelines) form the basis of this AQIA. Table 1 presents the criteria pollutant significance thresholds from the Guidelines. As the proposed project is located in the Ojai Planning Area, significance thresholds for that area were used.

Table 1 Ojai Planning Area Criteria Pollutant Significance Thresholds

Source	ROC (lbs/day)	NO _x (lbs/day)
Ojai Planning Area CEQA Threshold	5	5

2.0 EMISSIONS SUMMARY

Attachment A contains emissions calculations and assumptions used. Operational criteria pollutant emissions associated with the two new wells and associated activities/equipment were estimated. This includes:

- The additional 4 pounds/day in ROC emissions from the two new proposed oil wells.
- Emissions from the proposed gas flaring from the two new wells. Historic production records from the three existing wells was used to estimate oil and gas production for the new wells over the life of the CUP.
- Emissions from processing and storage of crude oil for new wells using the existing on-site equipment.
- Emissions from transport of oil and water from the new and existing wells.

Emissions for the proposed Project are shown in Table 2.

Table 2: Project-Related and Total Criteria Pollutant Emissions (lb./day)

PHASE	ROC (lb./day)	NOx (lb./day)	CO (lb./day)	PM10 (lb./day)	SOx (lb./day)
Project-Related Emissions:					
Flare	0.3460	0.4845	2.5609	0.0692	0.4845
Tanks	0.1896	--	--	--	--
Loading Facilities	0.0221	--	--	--	--
Oil Wells ¹	4.0000	--	--	--	--
Vehicle Miles (transport oil and wastewater)	0.0002	0.0083	0.0008	0.0000	0.0000
Project Total:	4.5579	0.4928	2.5617	0.0692	0.4845
Ojai Planning Area CEQA Threshold	5	5			

1 – Includes 2 lb./day ROC emissions for each new well

The revised Project results in less than significant impacts from operation phase criteria pollutant emissions.

3.0 HEALTH RISK IMPACTS

The previous AQIA evaluated the health risks of the previously proposed Project including the drilling of three new wells and the re-drilling of one existing oil well over the period of four years (one well drilled per year). The previous AQIA showed the project did not exceed the cancer risk significance threshold of 10 cancer cases per million exposed nor the chronic hazard index of 1.0. Since the new Project removes one of the proposed new oil wells, the cancer risk would be lower and the chronic hazard index would be either unchanged or lower. Because of this, health risk impacts were not re-evaluated in this AQIA.

Respectfully,



Rob Dal Farra, P.E.
Vice President
Sespe Consulting, Inc.

Attachments: Emissions Calculations and Assumptions

ATTACHMENT A

Emissions Calculations

Project - Emission Calculation Summary

Summary of Estimated Criteria Emissions

Source	Calculated Emissions (tons/year)				
	ROC	NOx	PM10	SOx	CO
Flares	0.0632	0.0884	0.0126	0.0884	0.4673
Tanks	0.0346				
Loading Facilities	0.0040				
Oil Wells	0.7300				
VMT	0.0000	0.0009	0.0000	0.0000	0.0001
Diesel Engines (construction)	0.0657	1.3828	0.0363	0.0017	0.3565
TOTAL	0.8975	1.4722	0.0489	0.0901	0.8240

Source	Calculated Emissions (lbs/year)				
	ROC	NOx	PM10	SOx	CO
Flares	126.3079	176.8310	25.2616	176.8310	934.6784
Tanks	69.2020				
Loading Facilities	8.0746				
Oil Wells	1460.0000				
VMT	0.0485	1.8877	0.0095	0.0056	0.2058
Diesel Engines (construction)	131.3441	2765.6110	72.6022	3.3904	713.0758
TOTAL	1794.9771	2944.3297	97.8733	180.2270	1647.9600

Source	Calculated Emissions (lbs/hr)				
	ROC	NOx	PM10	SOx	CO
Flares	0.0144	0.0202	0.0029	0.0202	0.1067
Tanks	0.0079				
Loading Facilities	0.0009				
Oil Wells	0.1667				
VMT	0.0004	0.0146	0.0001	0.0000	0.0017
Diesel Engines (construction)	0.9224	18.7828	0.5026	0.0241	5.0737
TOTAL	1.1126	18.8175	0.5056	0.0443	5.1821

Source	Calculated Emissions (lbs/day)				
	ROC	NOx	PM10	SOx	CO
Flares	0.3460	0.4845	0.0692	0.4845	2.5608
Tanks	0.1896				
Loading Facilities	0.0221				
Oil Wells	4.0000				
VMT	0.0002	0.0083	0.0000	0.0000	0.0008
TOTAL	4.5580	0.4928	0.0693	0.4845	2.5616

Project - Flares

Usage Data

Unit ID#		
^D District Toxic Profile ID	9	
Operating Hours Per Day	24	hours/day
^A Operating Days Per year	365	days/year
^E Heating Value	861.9	BTU/scf
^A Flare Max Hourly Throughput	0.8	MMBtu/hr
	800,000	Btu/hr
	928.18	scf/hr
Flare Production	2	Wells
	5.27	Historic ave. crude oil bbl/day/well
	10.53	Total project ave. crude bbl/day
	3,845	Crude oil bbl per year
	762	Historic average gas/oil ratio (scf/bbl)
	2,930,918	scf/year for all wells
	2.93	MMCF / year

^C Criteria Emission Factors

Unit	ROC	NOx	PM	SOx	CO
Ib/MMBTU	0.0500	0.0700	0.0100	0.0700	0.3700

Criteria Emissions

Unit	ROC	NOx	PM	SOx	CO
Ib/MMcf	43.0950	60.3330	8.6190	60.3330	318.9030
Ib/year	126.3079	176.8310	25.2616	176.8310	934.6784
tons/year	0.0632	0.0884	0.0126	0.0884	0.4673
Ib/hr	0.0144	0.0202	0.0029	0.0202	0.1067
Ib/day	0.3460	0.4845	0.0692	0.4845	2.5608

Assumptions and Sources

- A) Information from Permit #00004 engineering file Public Record Request. Received from Ventura County APCD Manager, Kerby Zozula, on August 29, 2018.
- C) Criteria pollutant emission factors for a non-BACT flare from AP-42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources, Section 5: Industrial Flares.
- D) Speciation for Natural Gas Flare External Combustion ROC emissions from the San Joaquin Valley APCD AB-2588 Hot Spots Air Toxics Profiles from table, "Natural Gas Fired External Combustion Equipment" in the May 2001 update of VCAPCD AB 2588 Combustion Emission Factors. Received from Ventura County APCD Manager, Kerby Zozula, on September 24, 2018.
- E) Heatling value from Gas Analysis by Chromatography report on Agnew Oil Well No. 2 from Pacific Gas Technology (PGT), ASTM D 1945/D 3588, sampled and analyzed on September 25, 2018.

Project - Tanks**Usage Data**

Unit ID #		
^A Emission Control Factor	90.00%	(vapor recovery and flare)
^A Operating Days Per Year	365	days/year
Operating Hours Per Day	24	hours/day
^A Crude Oil Vapor Pressure	1.5	psi
Number of Wells	2	Wells
Oil Production		
Oil Production Per Well	5.27	bbl/day/well
Total Oil Production	10.5	bbl/day
Crude Oil Storage Tank (Oil Production Tank 1)	1,922	bbl/year
Wash Tank (Oil Production Tank 2)	1,922	bbl/year
^A Crude Oil Storage Tank (Oil Production Tank 1)	500	bbl
^A Wash Tank (Oil Production Tank 2)	500	bbl
Number of Oil Tanks	2	tanks
Water Production		
Water Production Per Well	2	bbl/day/well
Total Water Production	4	bbl/day
Produced Water Tank 1		bbl/year
Produced Water Tank 2		bbl/year
^A Produced Water Tank 1 Capacity	250	bbl
^A Produced Water Tank 2 Capacity	250	bbl
Number of PW Tanks	2	tanks

90% control used by APCD in permitting

^C Criteria Emission Factors: Breathing and Working

Unit Description	Breathing	Working
	Uncontrolled ROC EF ¹ (lb/bbl-yr)	Uncontrolled ROC EF ¹ (lb/Mbbl)
Crude Oil Storage Tank (Oil Production Tank 1)	0.43	12.23
Wash Tank (Oil Production Tank 2)	0.43	12.23
^D Produced Water Tank 1	0.43	
^D Produced Water Tank 2	0.43	

Criteria Emissions: Breathing and Working

Unit Description	Breathing		
	Controlled ROC (tons/year)	Controlled ROC (lbs/hr)	Controlled ROC (lbs/day)
Crude Oil Storage Tank (Oil Production Tank 1)	0.0108	0.0025	0.0589
Wash Tank (Oil Production Tank 2)	0.0108	0.0025	0.0589
^D Produced Water Tank 1	0.0054	0.0012	0.0295
^D Produced Water Tank 2	0.0054	0.0012	0.0295
TOTAL	0.0323	0.0074	0.1767

Unit Description	Working		
	Controlled ROC (tons/year)	Controlled ROC (lbs/hr)	Uncontrolled ROC (lbs/day)
Crude Oil Storage Tank (Oil Production Tank 1)	0.0012	0.0003	0.0064
Wash Tank (Oil Production Tank 2)	0.0012	0.0003	0.0064
^D Produced Water Tank 1			
^D Produced Water Tank 2			
TOTAL	0.0024	0.0005	0.0129

Assumptions and Sources

A) Information from Permit #00004 engineering file Public Record Request. Received from Ventura County APCD Manager, Kerby Zozula, on August 29, 2018.

C) Ventura County APCD criteria pollutant default emission factors.

D) In the Ventura County APCD, it is assumed that working emissions are not produced from process water tanks or diluent tanks, which is the reason for no emission factors or emission calculations.

Project - Loading Facilities

Usage Data

Unit ID#		
Number of Wells	2	Wells
Oil Production Per Well	5.27	bbl/day/well
Total Oil Production	10.5	bbl/day
Operating Days/year	365	days
^A Control Efficiency	90%	
Operating Hours/day	24	hours
Total Fluid	3,845	bbl/year
^A Rated Capacity	200	bbl/hr

90% control used by APCD in permitting

^C Criteria Emission Factors

Unit	ROC
lbs/Mgal	2.7400

Criteria Emissions

Unit	ROC Emissions
lbs/day	0.0221
lbs/hour	0.0009
lbs/year	8.0746
Tons/year	0.00404

^E True Vapor Pressure Calculation

True vapor pressure (psia) can also be assumed from AP42 Table 7.1-2

True Vapor Pressure = $RVP \cdot e^{[C_0(IRTEMP-ITEMP)]}$

RVP =	Reid Vapor Pressure =	0.45
Co=	Constant =	-6622.5
ITEMP =	Inverse of RVP temperature (559.69°R) =	0.001786703
IRTEMP=	Inverse of holding temperature =	0.001667528
TVP=		0.99

Assumptions and Sources

- A) Information from Permit #00004 engineering file Public Record Request. Received from Ventura County APCD Manager, Kerby Zozula, on August 29, 2018.
- C) Ventura County APCD criteria pollutant default uncontrolled emission factors.
- D) Criteria emission factors from AP-42, Section 5.2.
- E) True Vapor Pressure equation from SBCAPCD Rule 325.

Project - Oil Wells

Usage Data

1 barrell oil (bbl)	5.61	cubic feet
Number of wells	2	Wells
^A Average operational Days Per Well	365	Days
^A Average operational Hours Per Day	24	Hours
Number of Well Days Operated	730	Days
Oil Well Production Estimation Per Well	5.27	bbl/day/well
# Wells	2	wells
Oil Well Production Estimation	10.53	bbl/day
	59.092	scf/day
	2.462166667	scf/hr

^A Criteria Emission Factors

Unit	^CROC
lb/well-day	2.0

Criteria Emissions

ROC (tons/year)	ROC (lbs/hr)	ROC (lb/year)	ROC (lb/day)
0.7300	0.1667	1460.0000	4.0000

Assumptions and Sources

A) Information from Permit #00004 engineering file Public Record Request. Received from Ventura County APCD Manager, Kerby Zozula, on August 29, 2018.

C) APCD emission factor.

Project - Construction-Specific VMTs (years 1-4)

Usage Data

Hours per trucking day	8	hours
Days per week	5	day/wk
Employees transporting oil and wastewater days per year	260.5	days
Additional construction employees days per year	10	days
Construction equipment transportation days per year	4	days
Weeks per year	52.1	weeks/yr

Employees Transporting Oil and Wastewater

On-Site, On-Road Truck, Unpaved

^A Vehicle Classification:	HHD Fleet Truck, Diesel, T7 Tractor	
^J Total number of trucks	2	trucks
Trips/ week /truck	2	trips / wk / truck
Trips/week for all trucks	4	trips / wk
^B On Site Road Length (One Way)	700	feet
On Site Road Length	0.1326	miles
VMT per week for all trucks	0.5303	VMT/week for all trucks
VMT per year for one truck	13.8144	VMT/year for one truck
VMT per year for all trucks	27.6288	VMT/ year for all trucks
VMT per day for all trucks	0.1061	VMT/day for all trucks
VMT per hour for all trucks	0.0133	VMT/ hour for all trucks

Additional Construction Employees

On-Site, On-Road Truck, Unpaved

^A Vehicle Classification	LDT2, Gas	
^L Total number of shifts per day	2	shifts / day
^L Hours per shift	12	hours / shift
^L Employees per shift	10	Employees / shift
^L Trips per day per truck	2	Trips / day / truck
^L Total days with additional employees	10	days/year
^K Total number of trips all vehicles all days	400	trips/well drilled
^B On Site Road Length (one-way)	700	feet/trip
On Site Road Length (one-way)	0.1326	miles/trip
VMT per year for one truck	5.3030	mile / yr / truck
VMT per year for all trucks	53.0303	miles/ year for all trucks
VMT per day for all trucks	0.2036	VMT/ day for all trucks
VMT per hour for all trucks	0.0254	VMT/ hour for all trucks

Off-Site, On-Road Truck, Paved

^A Vehicle Classification	HHD Fleet Truck, Diesel, T7 Tractor	
^C Total number of trucks	2	trucks
Trips/ week /truck	2	trips / wk / truck
Trips/week for all trucks	4	trips / wk
^B Off Site Road Length (One Way)	2500	feet
Off Site Road Length	0.4735	miles
VMT per week for all trucks	1.8939	VMT/week for all trucks
VMT per year for one truck	49.3371	VMT/year for one truck
VMT per year for all trucks	98.6743	VMT/ year for all trucks
VMT per day for all trucks	0.3788	VMT/day for all trucks
VMT per hour for all trucks	0.0473	VMT/ hour for all trucks

Off-Site, On-Road Truck, Paved

^A Vehicle Classification	LDT2, Gas	
^L Total number of shifts per day	2	shifts / day
^L Hours per shift	12	hours / shift
^L Employees per shift	10	Employees / shift
^L Trips per day per truck	2	Trips / day / truck
^L Total days with additional employees	10	days
^K Total number of trips all vehicles all days	400	trips/well drilled
^B On Site Road Length (one-way)	2500	feet/trip
On Site Road Length (one-way)	0.4735	miles/trip
VMT per year for one truck	18.9394	mile / yr / truck
VMT per year for all trucks	189.3940	miles/ year for all trucks
VMT per day for all trucks	0.7270	VMT/ day for all trucks
VMT per hour for all trucks	0.0909	VMT/ hour for all trucks

Project - Construction-Specific VMTs (years 1-4)
Construction Equipment Transportation

On-Site, On-Road Truck, Unpaved

^A Vehicle Classification:	HHD Fleet Truck, Diesel, T7 Tractor	
^{C,J} Total number of trucks	8	trucks
Trips per day per truck	2	trips / day / truck
Trips per day for all trucks	16	trips / day / truck
Days needed to transport equipment	2	days/well
Total days for construction equip. Transport	4	days/year
Total number of trips all vehicles all days	64	trips/well
^B On Site Road Length (one-way)	700	feet/trip
On Site Road Length (one-way)	0.1326	miles/trip
VMT per year for one truck	1.0606	miles/year for one truck
VMT per year for all trucks	8.4849	VMT/ year for all trucks
VMT per day for all trucks	2.1212	miles/day for all trucks
VMT per hour for all trucks	0.2652	VMT/ hour for all trucks

Off-Site, On-Road Truck, Paved

^A Vehicle Classification:	HHD Fleet Truck, Diesel, T7 Tractor	
^{C,J} Total number of trucks	8	trucks
Trips per day per truck	2	trips / day / truck
Trips per day for all trucks	16	trips / day / truck
Days needed to transport equipment	2	days/well
Total days for construction equip. Transport	4	days/year
Total number of trips all vehicles all days	32	trips/well
^B On Site Road Length (one-way)	2500	feet/trip
On Site Road Length (one-way)	0.4735	miles/trip
VMT per year for one truck	1.8939	miles/year for one truck
VMT per year for all trucks	15.1515	VMT/ year for all trucks
VMT per day for all trucks	7.5758	miles/day for all trucks
VMT per hour for all trucks	0.9470	VMT/ hour for all trucks

VMT Totals

		On-Site	Off-Site
Gas and Diesel Engine Total (Employees Transporting Oil and Wastewater + Additional Construction Employees + Equipment Transportation):	VMT per day for all trucks	2.4308	8.6816
	VMT per hour for all trucks	0.3039	1.0852
	VMT per year for all trucks	89.1440	303.2198

Fugitive PM10 and PM2.5 Emission Factors and Total (Employees Transporting Oil and Wastewater + Additional Construction Employees + Equipment Transportation) Emissions

^DUnpaved Road Emission Factors (On Site VMTs, On Road Truck, Unpaved Road):

	PM10	PM2.5
S = silt content (%)	4.8	
W _l = loaded truck wt (tons)	40	
W _u = unloaded truck wt (tons)	15	
W = avg truck weight	27.5	
Uncontrolled EF (lb/VMT)	1.7821	0.3778
Control Efficiency	80%	80%
Emission Factor (lb/VMT)	0.3564	0.0756
Daily Emissions (lb/day)	0.8664	0.1837
Hourly Emissions (lb/hour)	0.1083	0.0230
Annual Emissions (lb/year)	225.7020	47.8488

EF (lb/VMT)= 4.9 * (S/12)^{0.7} * (W/3)^{0.45}
Silt content based on mean Sand and Gravel Processing from AP-42 Table 13.2.2-1.
Control efficiency for unpaved roads in baseline is 80% for watering.
Control efficiency for unpaved roads in baseline is 80% for watering.

Project - Construction-Specific VMTs (years 1-4)

^E Paved Road Emission Factors (Off Site VMTs, On Road Truck, Paved Road):

	PM10	PM2.5
k= particle size multiplier (lb/vmt)	0.0022	0.00054
sL = road surface silt loading (g/m ²)	0.2	0.2
W _l = loaded truck wt (tons)	40	40
W _u = unloaded truck wt (tons)	15	15
W = avge truck weight	27.50	27.50
Uncontrolled EF (lb/VMT)	0.0149	0.0037
Control Efficiency	80%	80%
Emission Factor (lb/VMT)	0.0030	0.0007
Daily Emissions (lb/day)	0.0259	0.0064
Hourly Emissions (lb/hour)	0.0032	0.0008
Annual Emissions (lb/year)	6.7595	1.6592

EF (lb/VMT)= k * (sL)^{0.91} * (W)^{1.02}
Particle size multiplier based on AP-42 Table 13.2.1-1.
Silt Loading based on ADT of 500 - 5000 from AP-42 Table 13.1-2.
Control efficiency for unpaved roads in baseline is 80% for watering.

Particulate Matter Totals from On Site and Off Site, Unpaved and Paved Roads:

	Off-road Trucks		On-road Trucks	
	PM10	PM2.5	PM10	PM2.5
Hourly Emissions (lb/hour)			0.1115	0.0238
Annual Emissions (lb/year)			232.4615	49.5080

^I Speciated Fugitive DUST PM10 Emission Factors and Total (Employees Transporting Oil and Wastewater + Equip. Transposport + Additional Construction Employees) Emissions (On and Off Site VMTs, On Road, Paved Road)

Pollutant Name	Emission factor (ppmw)	CAS #	Emissions (lbs/year)	Emissions (lbs/hour)
ARSENIC	20	7440382	4.65E-03	2.23E-06
BERYLLIUM	1	7440417	2.32E-04	1.12E-07
CADMIUM	1	7440439	2.32E-04	1.12E-07
CHROMIUM HEXAVALENT	0	18540299	0.00E+00	0.00E+00
CHROMIUM NONHEXAVALENT	50	7440473	1.16E-02	5.58E-06
COPPER	100	7440508	2.32E-02	1.12E-05
LEAD	50	1128	1.16E-02	5.58E-06
MANGANESE	500	7439965	1.16E-01	5.58E-05
MERCURY	0	7439976	0.00E+00	0.00E+00
NICKEL	20	7440020	4.65E-03	2.23E-06
SELENIUM	5	7782492	1.16E-03	5.58E-07
SILICA, CRYSTALLINE	100000	1175	2.32E+01	1.12E-02
ZINC	200	7440666	4.65E-02	2.23E-05

EMFAC2014 Emission Factors for Criteria Emissions

^FEMFAC2014 Emission Rates for Gas Pick-Up Truck (LDT2, On Site, On Road, Paved)

2018 Emission Factors (g/VMT)							
ROC	CO	NOx	SOx	PM10	PM2.5	CO2	^H CO2e
0.0213	0.9929	0.1148	0.0040	0.0017	0.0016	394.1230	413.8291

^G EMFAC2014 Emission Rates for Diesel HHD Fleet Truck (T7 Tractor, Off Site, On Road, Paved)

2018 Emission Factors (g/VMT)							
ROC	CO	NOx	SOx	PM10	PM2.5	CO2	^H CO2e
0.1321	0.5100	5.1846	0.0151	0.0260	0.0249	1579.2033	1658.1635

Project - Construction-Specific VMTs (years 1-4)

Criteria Emissions

Employees Transporting Oil and Wastewater

On-Site, On-Road Truck, Unpaved

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0012	0.0001	0.0000	0.0000	0.0000
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0002	0.0000	0.0000	0.0000	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0080	0.3155	0.0310	0.0016	0.0015	0.0009
					CO2e (MT/y)
					0.0458

Off-Site, On-Road, Paved

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0001	0.0043	0.0004	0.0000	0.0000	0.0000
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0005	0.0001	0.0000	0.0000	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0287	1.1268	0.1108	0.0056	0.0054	0.0033
					CO2e (MT/y)
					0.1635

Total of Off- and On- Site Employee Oil and Wastewater Transport Emissions

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0001	0.0055	0.0005	0.0000	0.0000	0.0000
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0007	0.0001	0.0000	0.0000	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0367	1.4424	0.1419	0.0072	0.0069	0.0042
					CO2e (MT/y)
					0.2092

Additional Construction Employees

On-Site, On-Road Truck, Unpaved

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0001	0.0004	0.0000	0.0000	0.0000
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0000	0.0001	0.0000	0.0000	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0001	0.0005	0.0045	0.0000	0.0000	0.0000
					CO2e (MT/y)
					0.0000

Project - Construction-Specific VMTs (years 1-4)
Off-Site, On-Road Truck, Paved

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0002	0.0016	0.0000	0.0000	0.0000
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0000	0.0002	0.0000	0.0000	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0003	0.0018	0.0159	0.0000	0.0000	0.0001
					CO2e (MT/y)
					0.0000

Total of Off- and On- Site Additional Construction Employee Transport Emissions

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0002	0.0020	0.0000	0.0000	0.0000
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0000	0.0003	0.0000	0.0000	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0004	0.0024	0.0204	0.0000	0.0000	0.0001
					CO2e (MT/y)
					0.0000

Construction Equipment Transportation

On-Site, On-Road Truck, Unpaved

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0006	0.0242	0.0024	0.0001	0.0001	0.0001
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0001	0.0030	0.0003	0.0000	0.0000	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0025	0.0969	0.0095	0.0005	0.0005	0.0003
					CO2e (MT/y)
					0.0141

Off-Site, On-Road Truck, Paved

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0022	0.0865	0.0085	0.0004	0.0004	0.0003
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0003	0.0108	0.0011	0.0001	0.0001	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0088	0.3461	0.0340	0.0017	0.0017	0.0010
					CO2e (MT/y)
					0.0251

Total of Off- and On- Site Construction Equipment Transport Emissions

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0028	0.1107	0.0109	0.0006	0.0005	0.0003
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0004	0.0138	0.0014	0.0001	0.0001	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0113	0.4430	0.0436	0.0022	0.0021	0.0013
					CO2e (MT/y)
					0.0392

Project - Construction-Specific VMTs (years 1-4)
Diesel Engine Total (Employees Transporting Oil and Wastewater + Equipment Transportation) Criteria Emissions

	ROC	CO	NOx	SOx	PM10 ^M	PM2.5	CO2e (MT/year)
Hourly (lb/hour)	0.0004	0.0014	0.0145	0.0000	0.0001	0.0001	0.2484
Annual (lb/year)	0.0480	0.1854	1.8853	0.0055	9.45E-03	0.0090	

Diesel + Gas Engine Total (Employees Transporting Oil and Wastewater + Additional Construction Employees + Equipment Transportation) Criteria Emissions

	ROC	CO	NOx	SOx	PM10	PM2.5	CO2e (MT/year)
Hourly (lb/hour)	0.0004	0.0017	0.0146	0.0000	0.0001	0.0001	0.2484
Annual (lb/year)	0.0485	0.2058	1.8877	0.0056	0.0095	0.0091	

Assumptions and Sources

- A) Assume T7 Tractor vehicle classification used for the transport of Rig #4 and associated well drilling equipment and assume LDT2 vehicle classification used for the transport of additional well-drilling employees to and from the Agnew Oilfield.
- B) Google Earth software was used to measure the VMTs on site and off site. The on-site VMT distance was assumed to include the 350 foot site unpaved driveway. The off-site VMT distance was assumed to extend from the bottom of the on-site driveway to the intersection of Koenigstein Road and California State Route 150.
- C) Total number of truck trips per week estimate provided by Kenai Drilling Company representative, Carl Hathaway.
- D) Unpaved Road emissions factor from AP42 Section 13.2.2.
- E) Paved Road emissions factor from AP42 Section 13.2.1.
- F) Emission Rates from California Air Resources Board EMFAC2014 (v1.0.7) Web Base, Source: <https://www.arb.ca.gov/emfac/2014/>. Rates based on the following parameters: Region Type: Air District, Region: Ventura County APCD, Calendar Year: 2018, Vehicle Class: LDT2, Model Year: Aggregated, Speed: Aggregated, Fuel: Gas, Season: Annual, and Vehicle Category: EMFAC2011 Categories.
- G) Emission Rates from California Air Resources Board EMFAC2014 (v1.0.7) Web Base, Source: <https://www.arb.ca.gov/emfac/2014/>. Rates based on the following parameters: Region Type: Air District, Region: Ventura County APCD, Calendar Year: 2018, Vehicle Class: T7 Tractor, Model Year: Aggregated, Speed: Aggregated, Fuel: Diesel, Season: Annual, and Vehicle Category: EMFAC2011 Categories.
- H) CO2e emissions factor determined by scaling CO2 factor up by 5%, per the methodologies found in the BAAQMD GHG Model (BGM). This accounts for emissions of CH4, N2O, and air conditioner evaporative loss.
- I) San Diego County APCD, H01 - Haul Roads, General, Paved, & Unpaved, Default Trace Metal Composition.
- J) Assume that the number of on-site truck trips is the same as the number of off-site truck trips.
- K) Assume the same number of total days with additional well-drilling employees necessary for both on site and off site trucks.
- L) Values used to account for the increase in well-drilling employee traffic volume to and from the Agnew Oilfield from page 4 of the Superior Court of the State of California, County of Ventura, Writ of Mandate court decision made by Judge Glen Reiser on September 1, 2017. The Mandate states, "The project would result in a traffic volume of 40 ADT during the drilling stage."
- M) Assume PM10 emissions produced by diesel engines are equal to the amount of diesel engine exhaust produced. Diesel engines used here for the transport of oil and wastewater and for the transport of construction equipment.

Project - VMTs (years 5-30)

Usage Data

Hours per trucking day	8	hours
Days per week	5	day/wk
Trucking days per year	260.5	days
Weeks per year	52.1	weeks/yr

Employees Transporting Oil and Wastewater

On-Site, On-Road Truck, Unpaved

^A Vehicle Classification	HHD Fleet Truck, Diesel, T7 Tractor	
^{K J} Total number of trucks	3	trucks
Trips per week per truck	2	trips / wk / truck
Trips per week for all trucks	6	trips / wk
^B On Site Road Length (One Way)	700	feet
On Site Road Length	0.1326	miles
VMT per week for all trucks	0.7955	VMT/week for all trucks
VMT per day for all trucks	0.1591	VMT/day for all trucks
VMT per hour for all trucks	0.0199	VMT/ hour for all trucks
VMT per year for all trucks	41.4432	VMT/ year for all trucks

Off-Site, On-Road Truck, Paved

^A Vehicle Classification	HHD Fleet Truck, Diesel, T7 Tractor	
^{K C} Total number of trucks	3	trucks
Trips per week per truck	2	trips / wk / truck
Trips per week for all trucks	6	trips / wk
^B Off Site Road Length (One Way)	2500	feet
Off Site Road Length	0.4735	miles
VMT per week for all trucks	2.8409	VMT/week for all trucks
VMT per day for all trucks	0.5682	VMT/day for all trucks
VMT per hour for all trucks	0.0710	VMT/ hour for all trucks
VMT per year for all trucks	148.0114	VMT/ year for all trucks

Fugitive PM10 and PM2.5 Emission Factors and Emissions

^DUnpaved Road Emission Factor (On Site VMTs, On Road Truck, Unpaved Road):

	On-road Trucks	
	PM10	PM2.5
S = silt content (%)	4.8	
W _l = loaded truck wt (tons)	40	
W _u = unloaded truck wt (tons)	15	
W = avg truck weight	27.5	
Uncontrolled EF (lb/VMT)	1.7821	0.3778
Control Efficiency	80%	80%
Emission Factor (lb/VMT)	0.3564	0.0756
Daily Emissions (lb/day)	0.0567	0.0120
Hourly Emissions (lb/hour)	0.0071	0.0015
Annual Emissions (lb/year)	14.7715	3.1316

EF (lb/VMT)= 4.9 * (S/12)^{0.7} * (W/3)^{0.45}
Silt content based on mean Sand and Gravel Processing from AP-42 Table 13.2.2-1.
Control efficiency for unpaved roads in baseline is 80% for watering.
PM2.5 emissions are 21.2% of PM10 for unpaved roads (SCAQMD *Updated CEIDARS Table*).

Project - VMTs (years 5-30)

^EPaved Road Emission Factors (Off Site VMTs, On Road Truck, Paved Road):

	On-road Trucks	
	PM10	PM2.5
k= particle size multiplier (lb/vmt)	0.0022	0.00054
sL = road surface silt loading (g/m²)	0.2	0.2
W _l = loaded truck wt (tons)	40	40
W _u = unloaded truck wt (tons)	15	15
W = avge truck weight	27.50	27.50
Uncontrolled EF (lb/VMT)	0.0149	0.0037
Control Efficiency	80%	80%
Emission Factor (lb/VMT)	0.0030	0.0007
Daily Emissions (lb/day)	0.0017	0.0004
Hourly Emissions (lb/hour)	0.0002	0.0001
Annual Emissions (lb/year)	0.4424	0.1086

EF (lb/VMT)= k * (sL)^{0.91} * (W)^{1.02}

Particle size multiplier based on AP-42 Table 13.2.1-1

Silt Loading based on ADT of 500 - 5000 from AP-42 Table 13.1-2

Control efficiency for unpaved roads in baseline is 80% for watering.

Particulate Matter Totals from On Site and Off Site, Unpaved and Paved Roads:

	Off-road Trucks		On-road Trucks	
	PM10	PM2.5	PM10	PM2.5
Hourly Emissions (lb/hour)			0.0073	0.0016
Annual Emissions (lb/year)			15.2139	3.2401

^ISpeciated Fugitive PM10 Emission Factors and Emissions (On and Off Site VMTs, On Road, Paved Road)

Pollutant Name	Emission factor (ppmw)	Emissions (lbs/year)	Emissions (lbs/hour)
ARSENIC	20	3.04E-04	1.46E-07
BERYLLIUM	1	1.52E-05	7.30E-09
CADMIUM	1	1.52E-05	7.30E-09
CHROMIUM HEXAVALENT	0	0.00E+00	0.00E+00
CHROMIUM NONHEXAVALENT	50	7.61E-04	3.65E-07
COPPER	100	1.52E-03	7.30E-07
LEAD	50	7.61E-04	3.65E-07
MANGANESE	500	7.61E-03	3.65E-06
MERCURY	0	0.00E+00	0.00E+00
NICKEL	20	3.04E-04	1.46E-07
SELENIUM	5	7.61E-05	3.65E-08
SILICA, CRYSTALLINE	100000	1.52E+00	7.30E-04
ZINC	200	3.04E-03	1.46E-06

EMFAC2014 Emission Factors for Criteria Emissions

^GEMFAC2014 Emission Rates for Diesel T7 Tractor (Off Site, On Road, Paved)

2018 Emission Factors (g/VMT)							
ROC	CO	NOx	SOx	PM10	PM2.5	CO2	^H CO2e
0.1321	0.5100	5.1846	0.0151	0.0260	0.0249	1579.2033	1658.1635

Project - VMTs (years 5-30)

Criteria Emissions

On-Site, On-Road, Unpaved

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0018	0.0002	0.0000	0.0000	0.0000
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0002	0.0000	0.0000	0.0000	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0121	0.4733	0.0466	0.0024	0.0023	0.0014
					CO2e (MT/y)
					0.0687

Off-Site, On-Road, Paved

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0002	0.0065	0.0006	0.0000	0.0000	0.0000
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0008	0.0001	0.0000	0.0000	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0431	1.6903	0.1663	0.0085	0.0081	0.0049
					CO2e (MT/y)
					0.2452

Total Criteria Emissions

	ROC	CO	NOx	SOx	^F PM10	PM2.5	CO2e (MT/year)
Hourly (lb/hour)	0.00003	0.0001	0.0010	0.0000	0.0000	0.0000	0.3139
Annual (lb/year)	0.0551	0.2128	2.1635	0.0063	0.0108	0.0104	

Project - VMTs (years 5-30)
Assumptions and Sources

- A) Assume T7 Tractor EMFAC2014 vehicle category used for the transport of oil and wastewater on and off site.
- B) Google Earth software was used to measure the VMTed on site and off site. The on site VMT distance was assumed to include the 350 foot site unpaved driveway. The off site VMT distance was assumed to extend from the bottom of the on site driveway to the intersection of Koenigstein Road and California State Route 150.
- C) The baseline setting for overall heavy duty truck traffic reflects the maximum weekly fluid production established in 1989 - the CEQA baseline for traffic volume on Highway 150 is a weekly average of 6.6 to 11.8 one-way truck trips per week. Emissions calculated using 5 trucks to remain conservative.
- D) Unpaved Road emissions factor from AP42 Section 13.2.2.
- E) Paved Road emissions factor from AP42 Section 13.2.1.
- F) Assume PM10 emissions produced by diesel engines are equal to the amount of diesel engine exhaust produced. Diesel engines used here for the transport of oil and wastewater.
- G) Emission Rates from California Air Resources Board EMFAC2014 (v1.0.7) Web Base, Source: <https://www.arb.ca.gov/emfac/2014/>. Rates based on the following parameters: Region Type: Air District, Region: Ventura County APCD, Calendar Year: 2018, Vehicle Class: T7 Tractor, Model Year: Aggregated, Speed: Aggregated, Fuel: Diesel, Season: Annual, and Vehicle Category: EMFAC2011 Categories.
- H) CO2e emissions factor determined by scaling CO2 factor up by 5%, per the methodologies found in the BAAQMD GHG Model (BGM). This accounts for emissions of CH4, N2O, and air conditioner evaporative loss.
- I) San Diego County APCD, H01 - Haul Roads, General, Paved, & Unpaved, Default Trace Metal Composition.
- J) Assume that the number of on site truck trips is the same as the number of off site truck trips.
- K) Assume no construction in years 5 through 30. The number of trucks used for the transport of oil and wastewater used to calculate the VMT emissions in years 5 to 30 was assumed to remain consistant with the number of trucks used for the transport of oil and wastewater in years 1 to 4.



AIR QUALITY IMPACT ASSESSMENT

Carbon California Company
Agnew Oilfield Lease
270 Quail Ct., Suite B
Santa Paul, CA 93060

January 2, 2019

Prepared for: Carbon California Company
270 Quail Ct., Suite B
Santa Paula, CA 93060

Prepared by: Sespe Consulting, Inc.
374 Poli Street, Suite 200
Ventura, CA 93001
(805) 275-1515

AIR QUALITY IMPACT ASSESSMENT

Agnew Oilfield Lease
Carbon California Company

January 2, 2019

EXECUTIVE SUMMARY

This Air Quality Impact Assessment (AQIA) has been prepared to quantify and determine the significance of air quality impacts associated with the proposed drilling of three new oil wells at the Carbon California Company (Carbon) Agnew Lease (Facility) located north of Highway 150 between the City of Ojai and the City of Santa Paula in Ventura County, California. This AQIA follows methodologies and guidance presented in the Ventura County Air Pollution Control District's (VCAPCD) *Ventura County Air Quality Assessment Guidelines*.

All analyzed air quality impacts associated with this Project are less than significant. This AQIA has the following findings:

- The Project results in less than significant Construction phase emissions impacts, however, standard construction emission reduction measures recommended by the VCAPCD are identified.
- Less than significant impacts from operation phase criteria pollutant emissions;
- Less than significant GHG emission impacts.
- The Project results in less than significant localized health risk impacts.
- The Project is consistent with the Ventura County Air Quality Management Plan.

AIR QUALITY IMPACT ASSESSMENT

Agnew Oilfield Lease
Carbon California, LLC
January 2, 2019

1.0	INTRODUCTION	1
2.0	PROJECT DESCRIPTION	3
2.1	Existing Setting/Baseline	3
2.2	Project Operation Phase	4
2.3	Construction Phase.....	4
3.0	SIGNIFICANCE THRESHOLDS	5
4.0	CONSTRUCTION PHASE EMISSIONS	6
5.0	OPERATION PHASE EMISSIONS.....	6
5.1	Criteria Pollutant Emissions.....	6
5.2	Greenhouse Gas Emissions	7
6.0	TOXIC AIR EMISSIONS AND HEALTH RISK IMPACTS	8
7.0	CONSISTENCY WITH THE VENTURA COUNTY AIR QUALITY MANAGEMENT PLAN	10
8.0	CUMMULATIVE AIR QUALITY IMPACT ASSESSMENT	11
9.0	MITIGATIONS.....	12
9.1	Construction Phase Recommended Measures	12
9.2	Operation Phase Mitigations	13
10.0	CONCLUSION	13

APPENDICES

Appendix A	Construction Phase Emissions
Appendix B	Operational Phase Emissions
	- Baseline
	- Project
	- Total
Appendix C	Health Risk Assessment
Appendix D	2016 SEIR GHG Analysis

AIR QUALITY IMPACT ASSESSMENT

Carbon California Company
270 Quail Ct., Suite B
Santa Paula, CA 93060

January 2, 2019

1.0 INTRODUCTION

Carbon California Company (Carbon) is proposing to drill and operate three (3) new oil and gas wells and re-drill an existing oil and gas well at their Agnew Lease (Facility) located north of Highway 150 between the City of Ojai and the City of Santa Paula in Ventura County, California (see Figure 1). This Air Quality Impact Assessment (AQIA) has been prepared to quantify and determine the significance of air quality impacts associated with the Facility operations. Operations and sources of air emissions considered in this AQIA include:

- The continued operation and production of the three (3) existing wells, including the proposed re-drill of one of the existing wells,
- The drilling (construction) and operation of three (3) new oil wells and associated production activities,
- The vehicle miles traveled (VMT) off-site and on-site for the transport of oil and wastewater,
- The vehicle miles traveled (VMT) off-site and on-site for the transport of drilling equipment during construction,

Basis for this AQIA: Historically the Facility operated under Conditional Use Permit (CUP) 3543. In 2013, the operator at that time applied to the County of Ventura to renew the permit for an additional 25 years, including re-drilling one of the three existing wells, and for authorization to drill the remaining three wells authorized under the original permit. Since that time the CUP renewal has been approved and appealed numerous times resulting in a Subsequent Environmental Impact Report (SEIR) being prepared by the County of Ventura in March 2016 and ending finally in the Superior Court of California, County of Ventura. In a 2017 decision rendered by Judge Glen Reiser, the applicant (now Carbon) was ordered to conduct additional analysis to evaluate impacts from the proposed drilling of new wells, plus all production, storage, flaring and transport associated with those new wells and identify appropriate project mitigations.

This AQIA has been prepared in response to that court order and is limited in scope to address the requirements of that judgement.

This AQIA follows methodologies and guidance presented in the Ventura County Air Pollution Control District's (VCAPCD) October 2003 *Ventura County Air Quality Assessment Guidelines*. These Guidelines provide a framework and uniform methods for preparing air quality evaluations for environmental documents and recommend specific criteria and threshold levels for determining whether a proposed project may have a significant adverse air quality impact.

There are various principles within the Guidelines that are important to this AQIA:

- *The Guidelines are not applicable to equipment or operations required to have Ventura County APCD permits (Authority to Construct or Permit to Operate). APCD permits are generally required for stationary and portable (non-vehicular) equipment or operations that may emit air pollutants. This permit system is*

separate from CEQA and involves reviewing equipment design, followed by inspections, to ensure that the equipment will be built and operated in compliance with APCD regulations.

- *The emissions from equipment or operations requiring APCD permits are not counted towards the air quality significance thresholds. This is for two reasons. First, such equipment or processes are subject to the District's New Source Review permit system, which is designed to produce a net air quality improvement. Second, facilities are required to mitigate emissions from equipment or processes subject to APCD permit by using emission offsets and by installing Best Available Control Technology (BACT) on the process or equipment.*
- *Construction-related emissions (including portable engines and portable engine-driven equipment subject to the ARB's Statewide Portable Equipment Registration Program, and used for construction operations or repair and maintenance activities) of ROC and NOx are not counted towards the two significance thresholds, since these emissions are temporary. However, construction-related emissions should be mitigated if estimates of ROC and NOx emissions from the heavy-duty construction equipment anticipated to be used for a particular project exceed the 5 pounds per day threshold in the Ojai Planning Area, or the 25 pounds per day threshold in the remainder of the county.*

Based on these principles, the following table compares the proposed Carbon operations and their applicability to the VCAPCD's CEQA air quality significance thresholds (see Section 2.0 for project description details).

Table 1 Emissions Sources vs CEQA Significance

Emission Source	Emission Type	Requires APCD Permit?	Do APCD CEQA Significance Thresholds Apply?
Continued production of the 3 existing wells including flaring of produced gas	Long Term	Yes	No
Production of the 3 new wells including flaring of produced gas and additional 2 lb./day of ROC emissions per well	Long Term	Yes	No
Vehicle travel for the offsite transport of oil and wastewater (additional trips for new well oil production)	Long Term	No	Yes
Drilling 3 new wells	Short term construction	No	No
Re-drilling 1 well	Short term construction	No	No
Vehicle travel for the transport of drilling equipment	Short term construction	No	No
Vehicle travel for the transport of additional driller employees	Short term construction	No	No

It is evident based on the VCAPCD Guidelines that only the impact from additional truck trips due to offsite hauling of increased produced fluids (oil, water) would be counted towards the air quality significance thresholds. However, Judge Reiser's order required Carbon to evaluate impacts from the proposed drilling of new wells, plus all production, storage, flaring and transport associated with those new wells even though the majority of those emissions would fall under VCAPCD's permitting authority.

In order to follow the VCAPCD Guidelines and attempt to satisfy the requirements of Judge Reiser's order, the following scenarios were considered in this AQIA when evaluating impacts:

- **For Evaluation of Health Risk:**

- *Analysis per VCAPCD's Guidelines:* This scenario includes emissions and associated health risk impacts from all vehicle travel for the offsite transport of oil and wastewater. All vehicle travel is being considered instead of considering only the incremental vehicle travel due to increased production from the 3 new wells for the following reasons:
 - The original CUP prohibited the use of Koenigstein Road by heavy trucks for Agnew operations. For the segment of Koenigstein Road proposed to be used, the baseline condition is assumed to be zero truck trips per week.
 - Evaluating impacts from all vehicle travel for the offsite transport of oil and wastewater would be considered the most impactful analysis.
- *Existing + Proposed Project Analysis:* This scenario included emissions and associated health risk impacts from all sources including existing and Project proposed VCAPCD permitted sources, temporary construction, transportation, etc.

- **For Comparison to CEQA Significance Thresholds:**

- *Analysis per VCAPCD's Guidelines:* Again, this scenario includes emissions from all vehicle travel for the offsite transport of oil and wastewater.
- *Temporary Construction Emissions:* Although temporary construction-related emissions are not counted towards the VCAPCD's CEQA significance thresholds they still need to be compared to the thresholds to determine if construction mitigation measures should be identified to reduce such emissions.

2.0 PROJECT DESCRIPTION

The existing Facility contains three (3) wells that are used for oil and gas production. The Project includes continuing oil and gas exploration and production and associated truck trips to transport the oil and wastewater on and off site for the next 25 years. The project also includes the re-drilling of one (1) of the existing three (3) wells, as well as the drilling of three (3) new wells on the Agnew well pad. The construction of the three (3) additional wells will require the transport of drilling equipment to and from the site. Once constructed, the new oil wells will require the Facility to transport additional oil and wastewater to and from the site. Once construction is complete, a total of six (6) wells will be operational on the approximately 1.7-acre Agnew Lease.

2.1 Existing Setting/Baseline

The operation of existing oil and gas production facilities are considered to be baseline sources of emissions. There are currently three (3) operational oil wells located at the Agnew oilfield. Emissions associated with oil production operations from these wells were estimated using historical oil, water, and gas production data from the Division of Oil, Gas, and Geothermal Resources (DOGGR) well finder online data tool for Agnew Wells No. 1, 2, and 3. Existing on-site equipment that will continue to be used over the next 25 years includes:

- Three (3) oil wells (Agnew Wells No. 1, 2, and 3),
- One (1) 200-barrel crude oil storage tank,
- One (1) 500-barrel wash tank,
- Two (2) 250 barrel produced water tanks,

- One (1) oil loading facility, and
- One (1) 0.8 MMBTU/hour Agnew Lease Flare.

Also baseline employee vehicle trips to operate the wells were assumed at two visits per day (4 trips/day, 28 trips per week).

2.2 Project Operation Phase

Operational criteria and toxic air contaminant (TAC) emissions associated with the Project were calculated for new Project sources related to the three new wells and associated activities/equipment. This includes:

- The additional 6 pounds/day in ROC emissions from the three new proposed oil wells.
- Emissions from the proposed gas flaring from the new wells.
- Emissions from processing and storage of crude oil for new wells using the existing on-site equipment.
- Emissions from transport of oil and water from the new and existing wells. This analysis assumes all emissions related to offsite hauling of fluids is Project related. The Project includes a maximum of 8 tanker truck loads (16 one-way trips) per week for fluids transport, occurring during daylight hours Monday through Saturday, between 7:30 am and 6:30 pm.

Emissions from employee vehicle trips to operate the wells are not considered Project related as they are not expected to change with the addition of the 3 new wells.

2.3 Construction Phase

The activities required to drill the three new oil wells and re-drill one existing well were considered in calculating construction phase emissions for the Project. These activities include:

- Transportation of a diesel-powered drilling rig and support equipment to and from site.
- Drilling of new oil well(s). It was assumed that it would take 10 days to drill each new well.
- Traffic from temporary drilling personnel. The analysis assumed during drilling, two x 12 hour shifts with 10 employees each shift driving light duty gasoline powered trucks (pickups) for 10 days of drilling. Total of 40 trips per day, 400 trips per well drilled.

Based on direction from Carbon, it was assumed that one well per year would be drilled over 4 consecutive years (3 new wells, one re-drill). Other assumptions used in the construction phase emissions analysis included:

- Kenai Rig 4 would be used to drill the wells (rig used by Carbon to drill its most recent new oil well). A total of 16 heavy heavy-duty trucks, 8 trucks per day for 2 days would be required to bring the rig on-site during daylight hours (1 truck per hour). The same assumption would apply to taking the rig away.
- Kenai Rig 4 on average uses 400 gal/day of diesel fuel. To yield the most impactful analysis it was assumed this fuel was burned in the highest emitting engine for each pollutant emitted.

3.0 SIGNIFICANCE THRESHOLDS

The VCAPCD's Ventura County Air Quality Assessment Guidelines (VCAPCD Guidelines) form the basis of this AQIA. Table 2 presents the criteria pollutant significance thresholds from the Guidelines. As the proposed project is located in the Ojai Planning Area, significance thresholds for that area were used.

Table 2 Ojai Planning Area Criteria Pollutant Significance Thresholds

Source	ROC (lbs/day)	NO _x (lbs/day)
Sources Not Requiring Permit	5	5

The VCAPCD Guidelines only include thresholds for the ozone precursors oxides of nitrogen (NO_x) and reactive organic compounds (ROC). According to the VCAPCD Guidelines, these thresholds are only applied to unpermitted sources of emissions. Emissions from equipment requiring VCAPCD permits, specifically stationary equipment, are not counted towards these air quality significance thresholds. Significance thresholds are meant to be applied to the impacts associated with the Project only. However, emissions from stationary sources are still quantified within this AQIA for informational purposes.

Impacts from toxic air contaminant (TAC) emissions are estimated by conducting a health risk assessment (HRA). Table 3 presents the significance thresholds for health risk impacts, which are from the VCAPCD Guidelines.

Table 3 Health Risk Significance Thresholds

Source	Cancer Risk	Chronic Risk	Acute Risk
All Project Sources	10 cases in a million	1.0 hazard index	1.0 hazard index

The VCAPCD Guidelines have not yet been updated to include a threshold for greenhouse gasses (GHGs). The VCAPCD has historically utilized the South Coast Air Quality Management District's (SCAQMD) threshold for GHG impacts from industrial projects, as presented in Table 4.

Table 4 GHG Significance Thresholds

Source	CO ₂ e (MT/yr.) ¹
All Project Sources	10,000

1 – Metric tonnes per year of carbon dioxide equivalent emissions

This AQIA does not calculate GHG emissions from the proposed Project and instead relies upon a GHG emission evaluation conducted by the VCAPCD and presented by the County in their 2016 SEIR (see Appendix D).

In addition to the criteria pollutant, GHG, and TAC quantitative thresholds presented above, the VCAPCD Guidelines also requires that consistency with the Ventura County Air Quality Management Plan (AQMP) be evaluated. A project is consistent with the AQMP if it does not cause population growth beyond the population forecasts in the most recent AQMP.

4.0 CONSTRUCTION PHASE EMISSIONS

This section presents the results of the construction phase impact assessment. For construction emission calculations and additional detail regarding the calculation methodologies and assumptions, see Appendix A. Table 5 below presents the Project construction short-term emissions on a pounds per day basis and compares them to the OVPA threshold to determine if mitigation techniques should be implemented during construction activities.

Table 5 Maximum Day Construction Phase (Short-Term) Emissions

PHASE ¹	ROC (lb./day)	NOx (lb./day)	CO (lb./day)	PM10 (lb./day)	PM2.5 (lb./day)	SOx (lb./day)
Drilling	3.7897	112.4274	22.7381	2.1475	1.6093	0.1016
Vehicle Travel for the Transport of Additional Driller Employees	0.0000	0.0002	0.0020	0.0000	0.0000	0.0000
Total	3.7897	112.4276	22.7402	2.1475	1.6093	0.1016
Significance Threshold ²	5	5	--	--	--	--
Emission Reduction Measures Recommended?	No	Yes	--	--	--	--

1 – Rig transport and drilling do not occur on the same day so emissions from vehicle travel for transport of drilling equipment is not included in the maximum day calculation. Max day emissions were during drilling days

2 – Significance thresholds from Section 3.3.1a, Ojai Planning Area ROC and NOx Criteria Pollutants, from the Ventura County Air Quality Assessment Guidelines.

5.0 OPERATION PHASE EMISSIONS

5.1 Criteria Pollutant Emissions

This section presents the results of the operation phase impact assessment. Significance of the impacts are determined by comparison to the appropriate significance threshold presented in Section 3. For operation emission calculations and additional detail regarding the calculation methodologies and assumptions, see Appendix B.

The following emission evaluations are presented:

- Baseline, Project-related and total criteria pollutant emissions for informational purposes.
- Emissions from all vehicle travel for the offsite transport of oil and wastewater for comparison to CEQA significance thresholds.

Table 6 Baseline, Project-Related and Total Criteria Pollutant Emissions (lb./day)

PHASE	ROC (lb./day)	NOx (lb./day)	CO (lb./day)	PM10 (lb./day)	SOx (lb./day)
Project-Related Emissions:					
Flare	1.2929	1.8100	9.5671	0.2586	0.0700
Tanks	0.2501	--	--	--	--
Loading Facilities	0.1260	--	--	--	--
Oil Wells ¹	6.0000	--	--	--	--
Vehicle Miles (transport oil and wastewater)	0.0002	0.0083	0.0008	0.0000	0.0000
Project Total:	7.6692	1.8183	9.5679	0.2586	0.0700
Baseline Emissions:					
Flare	0.0425	0.0595	0.3144	0.0085	0.0595
Tanks	0.1826	--	--	--	--
Loading Facilities	0.0101	--	--	--	--
Oil Wells	6.0000	--	--	--	--
Vehicle Miles (transport oil and wastewater)	0.0004	0.0138	0.0014	0.0001	0.0000
Employee vehicle trips to operate wells	0.0000	0.0000	0.0002	0.0000	0.0000
Baseline Total:	6.2355	0.0733	0.3160	0.0086	0.0595
Total (Project + Baseline):	13.9046	1.8916	9.8839	0.2672	0.1296

1 – Includes 2 lb./day ROC emissions for each new well

Table 7 CEQA Project-Related Criteria Pollutant Emissions vs Thresholds (lb./day)

PHASE	ROC (lb./day)	NOx (lb./day)	CO (lb./day)	PM10 (lb./day)	PM2.5 (lb./day)	SOx (lb./day)
Transport of oil and wastewater off of the site ¹	0.0006	0.0097	0.0147	0.0001	0.0001	0.0001
Significance Threshold ²	5	5	--	--	--	--
Significant?	No	No	--	--	--	--

1 – Assumes 8 trucks per week (16 trips per week)

2 – Significance thresholds from Section 3.3.1a, Ojai Planning Area ROC and NOx Criteria Pollutants, from the Ventura County Air Quality Assessment Guidelines.

The Project results in less than significant impacts from criteria pollutant emissions

5.2 Greenhouse Gas Emissions

An evaluation of GHG emissions was conducted by the County of Ventura, Planning Division during their preparation of the March 2016 SEIR. Their evaluation utilized a 2015 VCAPCD evaluation of GHG emissions for another oilfield project that proposed drilling 19 new oil wells (see Appendix D). The County Planning evaluation determined:

- A project has a cumulatively considerable impact on global climate change if it would cause an increase in GHG emissions in excess of 10,000 metric tonnes of CO_{2e} (MTCO_{2e}) per year.
- This Project (Carbon) would result in annual direct and indirect GHG emissions of 1,196 MTCO_{2e} per year which is well below the 10,000 metric tonnes of CO_{2e} per year threshold.

6.0 TOXIC AIR EMISSIONS AND HEALTH RISK IMPACTS

Toxic air contaminants (TACs) are pollutants that cause a health risk impact to exposed populations. TAC emissions from Project sources are calculated in Appendix C.

Air dispersion modeling is conducted to determine offsite concentrations of TAC emissions. For this Project, dispersion modeling was conducted using the Lakes AERMOD View implementation of the industry standard AERMOD dispersion model. After determining offsite TAC concentrations, health risk impacts were calculated using California Air Resources Board's (CARB) Hotspots Analysis and Reporting Program 2 (HARP 2). Residential cancer, chronic, and acute risk levels were calculated based on 30-year exposure (per HRA protocols) and the "OEHA Derived Method" intake rate percentile; worker risk levels were calculated based on 25-year exposure and the "OEHHA Derived Method" intake rate percentile; and cancer burden was calculated based on a 70 -year exposure, using the "OEHHA Derived Method" intake rate percentile. Additional information regarding the dispersion modeling parameters used is provided in Appendix C. Health risk modeling files are included in a link provided with this AQIA (<https://bit.ly/2V3J51i>).

The VCAPCD does not provide meteorological data in reasonable vicinity to the Project. Meteorological data was purchased from Lakes Environmental. Lakes generated prognostic meteorological data for the five-year period of 2013 through 2017 based on coordinates within the Project area.

The following scenarios were modeled in this AQIA when evaluating impacts for health risk:

- *Analysis per VCAPCD's Guidelines:* This scenario includes emissions and associated health risk impacts from all vehicle travel for the offsite transport of oil and wastewater, including:
 - o Fugitive dust emissions from on-site and local off-site truck travel, and,
 - o Diesel particulate matter from on-road truck engines during onsite travel and local off-site travel.
- *Existing + Proposed Project Analysis:* This scenario includes emissions and associated health risk impacts from all emission sources, including:
 - o Existing and Project proposed VCAPCD permitted sources such as:
 - combustion products from oil well flaring, and
 - fugitive volatile emissions from wells, piping, flanges, tanks, and loading racks.
 - o Temporary construction emissions from diesel engines associated with well drilling.
 - o Transportation emissions associated with both existing Project processes and temporary construction processes, including:
 - fugitive dust emissions from on-site and local off-site truck travel, and,
 - diesel particulate matter from on-road truck engines during onsite travel and local off-site travel.

The Existing + Proposed Project Analysis is broken into two (2) periods. The first period modeled emissions for years 1 – 4, of the project, and assumes one new well will be drilled per year. The second period modeled emissions for years 5 – 30 of the project, and does not contain construction related emissions sources. Construction based emissions were calculated using information from Kenai drilling, assumed Kenai Rig 4 was utilized, and that the rig used 400 gallons of diesel fuel per day. For more information regarding the quantification of emissions, see Appendices B and C.

A total of 200 grid receptors, 77 fence-line receptors, and 13 discreet residential receptors were modeled. Modeled Receptors and sources are illustrated on Figures 1 and 2 respectively found in Appendix C. Health risk

results at local residential receptors, and at the Acute Hazard Point of Maximum Impact (PMI) are presented in Table 8 and Table 9 for the VCAPCD based Analysis and the Existing + Proposed Project Analysis respectively.

Table 8 Risk per VCAPCD Guidelines Analysis

Receptor ID	Receptor Type	UTM Location (m East)	UTM Location (m North)	Cancer Cases per Million Exposed	Chronic Hazard Index	Acute Hazard Index
201	Residential	305181	3813150	0.014	0.0010	0.000018
202	Residential	305175	3813184	0.011	0.00081	0.000011
203	Residential	304931	3812926	0.015	0.0011	0.000074
204	Residential	304812	3812740	0.006	0.00045	0.000035
205	Residential	304596	3812860	0.011	0.00083	0.000028
206	Residential	304653	3813041	0.019	0.0014	0.000030
207	Residential	304658	3813202	0.010	0.00076	0.000032
208	Residential	304641	3812566	0.0039	0.00028	0.000021
209	Residential	304590	3812613	0.0047	0.00034	0.000021
210	Residential	305548	3813385	0.00049	0.000036	0.0000016
211	Residential	304971	3813575	0.00032	0.000023	0.0000037
212	Residential	304670	3813774	0.00021	0.000015	0.0000034
213	Residential	304345	3813766	0.000077	0.0000056	0.0000026
224	Off-Site PMI	304899	3813053	N/A	N/A	0.00017
Sig. Threshold	N/A	N/A	N/A	10	1	1
Significant?	N/A	N/A	N/A	No	No	No

MEIR: Maximum Exposed Individual Receptor

Table 9 Risk per Existing + Proposed Project Analysis

Receptor ID	Receptor Type	UTM Location (m East)	UTM Location (m North)	Cancer Cases per Million Exposed	Chronic Hazard Index	Acute Hazard Index
201	Residential	305181	3813150	4.7	0.021	0.014
202	Residential	305175	3813184	4.1	0.017	0.0083
203	Residential	304931	3812926	2.2	0.020	0.0099
204	Residential	304812	3812740	1.1	0.0085	0.0068
205	Residential	304596	3812860	2.4	0.016	0.0071
206	Residential	304653	3813041	4.9	0.027	0.0087
207	Residential	304658	3813202	2.7	0.015	0.010
208	Residential	304641	3812566	0.8	0.0055	0.0050
209	Residential	304590	3812613	1.0	0.0066	0.0050
210	Residential	305548	3813385	0.15	0.00074	0.00057
211	Residential	304971	3813575	0.10	0.00048	0.0013
212	Residential	304670	3813774	0.06	0.00030	0.00090
213	Residential	304345	3813766	0.02	0.00011	0.00053
275	Off-Site PMI	304873	3813298	N/A	N/A	0.038
Sig. Threshold	N/A	N/A	N/A	10	1	1
Significant?	N/A	N/A	N/A	No	No	No

MEIR: Maximum Exposed Individual Receptor

To evaluate cancer burden, a 70-year cancer risk model was run and the geographical bounds of the 1 in one million cancer risk isopleth was determined. Based on modeling results, the isopleth was conservatively represented as a circle with a radius of 1 km, and the census receptor module of HARP2 was utilized to determine that the population within the bounds of the circle was 208. The cancer MEIR for the 70-year run demonstrated a risk level of 0.00000523, which was multiplied by the population of 208, resulting in a cancer burden result of 0.0011, well below the ARB Health Risk Assessment Guidelines threshold of 1.0

Worker health risk was also evaluated. In order to conservatively represent possible worker receptor locations, residential receptors were assumed to be possible locations for work to take place and were incorporated into the worker risk model, which also determined the facility posed less than significant health risk.

Cancer burden and Worker health risk modeling files and results can be found with the rest of the HRA modeling files at the link provided (<https://bit.ly/2V3J51i>).

7.0 CONSISTENCY WITH THE VENTURA COUNTY AIR QUALITY MANAGEMENT PLAN

In order to demonstrate consistency with the AQMP, a Project must demonstrate consistency with the population forecasts contained therein. Due to its industrial/commercial nature, this Project is not expected to cause an increase in population. Since this Project is not growth inducing, it is consistent with the AQMP population forecasts. Furthermore, the Project will remain consistent with the control strategies outlined in the AQMP by complying with stationary source regulations and BACT requirements.

8.0 CUMMULATIVE AIR QUALITY IMPACT ASSESSMENT

The Ventura County Air Quality Assessment Guidelines (2003) state:

“A project with emissions of two pounds per day or greater of ROC, or two pounds per day or greater of NOx that is found to be inconsistent with the AQMP will have a significant cumulative adverse air quality impact. A project with emissions below two pounds per day of ROC, and below two pounds per day of NOx, is not required to assess consistency with the AQMP. Inconsistent projects are usually those that cause the existing population to exceed the population forecasts contained in the most recently adopted AQMP.”

These thresholds would apply to the Project emissions under the “Analysis per VCAPCD’s Guidelines” scenario (emissions associated with vehicle travel for the offsite transport of oil and wastewater). Since those Project emissions of NOx and ROC are well below 2 pounds per day and the Project is consistent with the AQMP the Project’s cumulative impact would be less than significant.

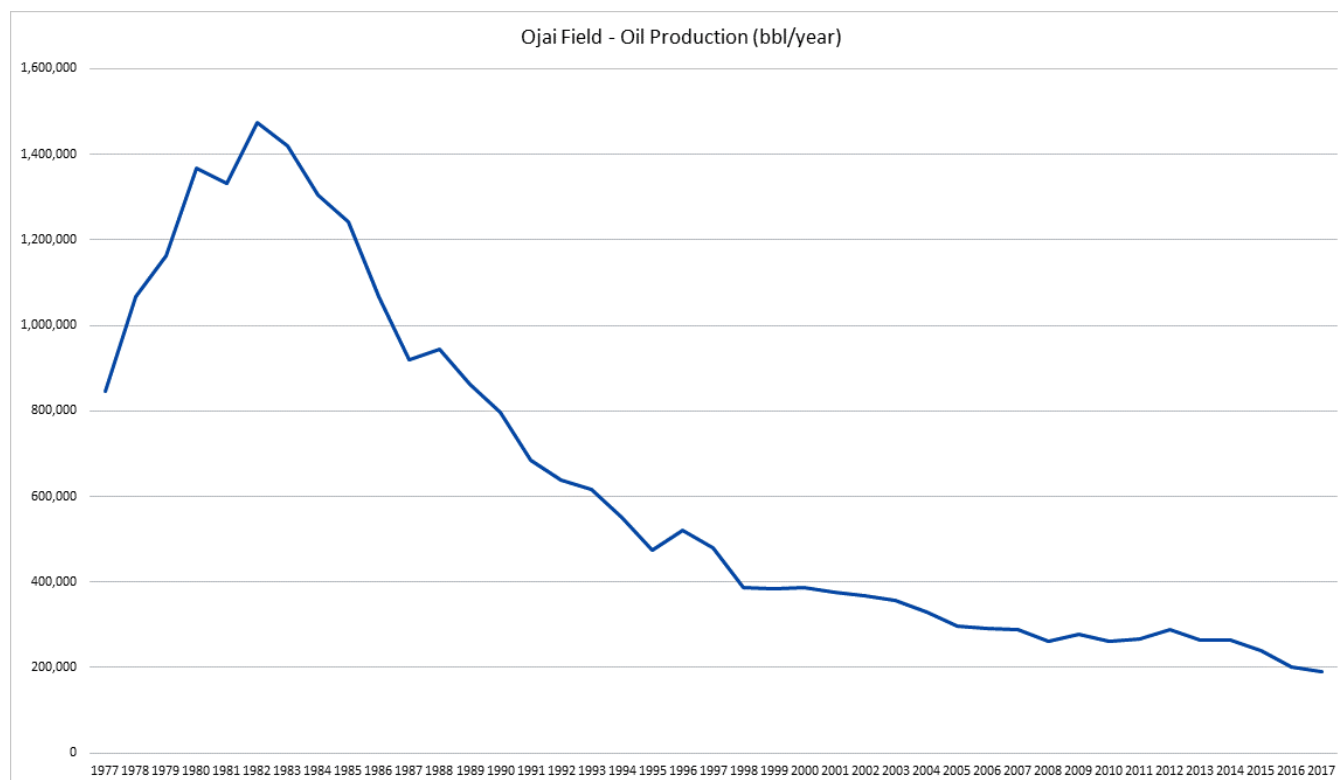
Also, Policy 1.1.2.1 of the Ojai Valley Area Plan establishes a 5 pound per day emissions Threshold of Significance for the Ojai Planning Area. Policy 1.1.2.1 of the Ojai Valley Area Plan states:

Discretionary development in the Ojai Valley shall be found to have a significant adverse impact on the regional air quality if daily emissions would be greater than 5 pounds per day of Reactive Organic Compounds (ROC) and/or greater than 5 pounds per day of Nitrogen Oxides (NOx).

The above policy of the Ojai Valley Area Plan does not address how the emissions of a project are to be evaluated or calculated. General Plan Policy 1.2.2.2 specifies that they are to be evaluated in accordance with the Ventura County Air Quality Assessment Guidelines. Thus, the 5 pounds per day Threshold of Significance listed in this Area Plan policy applies only to emissions from facilities or uses that are not required to have a permit from the VCAPCD. The majority of the facility emissions reviewed in the AQIA would operate under permits issued from the VCAPCD. Thus, the proposed project would not result in a significant impact on air quality pursuant to the County General Plan and adopted Air Quality Assessment Guidelines.

Judge Reiser’s decision also suggested that the significant cumulative air quality impacts of CUP-3543 with other new oil and gas projects within the immediate airshed was not properly analyzed. Recent contact with County Planning reveals the Bentley Oil and Gas Project, Case No. PL15-0187 as the only new oil and gas project within the immediate airshed. In that project, the applicant is requesting a modification to allow full time flaring of all produced natural gas due to the loss of access to a gas sales pipeline. As with the Carbon Project, emissions from the Bentley project would require a permit from the VCAPCD and not count towards significance thresholds. As a result, the cumulative impact of the two projects would also be insignificant.

Lastly, the increased production of oil from the proposed three new wells will bring overall oil production in the Ojai Oil Field back to conditions that existed in the 2015-2016 timeframe which is at the Project’s baseline year condition (baseline conditions are those that existed at the time the notice of preparation is published – in this case February 20, 2015). The following figure shows the Ojai Oil Field production from 1977 through 2017 based on DOGGR production records:



This AQIA assumed 20 barrels/day of oil production per well for new wells. This equals 2,190 barrels/year by the time all three wells are drilled and producing. In 2015 the Ojai Field produced 238,334 barrels of oil. By 2017 production was 190,154 barrels. Assuming field production levels remain steady after 2017, addition of the Project oil production will result in annual field oil production of 212,054 barrels which is below 2015 levels suggesting that addition of the new wells will not cause a significant increase in area production and the project's additional emissions would not result in a cumulatively considerable increase.

9.0 MITIGATIONS

9.1 Construction Phase Recommended Measures

As discussed in the VCAPCD Guidelines, ozone precursor emissions from mobile construction equipment are not counted against the significance thresholds (VCAPCD CEQA Guidelines, page 7-5). However, an effort should be made to reduce construction emissions if the emissions exceed the thresholds presented in Table 2 of this AQIA. Construction NOx (ozone precursor) emissions exceed the 5 lb./day Ojai Planning Area Criteria Pollutant Significance Threshold. Note that construction activities for this Project are expected to be relatively short in duration (i.e., two weeks per year over a period of approximately four years). It is recommended that the Project implement the following measures to reduce ozone precursors during construction to the extent possible:

- AQ-1. *Minimize equipment idling time.*
- AQ-2. *Maintain equipment engines in good condition and in proper tune as per manufacturers' specifications.*
- AQ-3. *Use alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), or electric, if feasible.*

Measures AQ-1, 2 and 3 are standard measures recommended by the VCAPCD Guidelines (Section 7.4.3, page 7-8).

A drilling rig equipped with newer Tier 4 diesel engines, if available at the time of drilling, should be considered to reduce emissions of NOx. Discussions with Kenai Drilling personnel indicated that rigs utilizing cleaner Tier 4 engines are currently not available. The use of a drilling rig equipped with newer Tier 4 diesel engines would also significantly reduce the emissions of diesel particulates which was the primary source of the potential cancer risk identified during health risk modeling.

9.2 Operation Phase Mitigations

All operation phase impacts are less than the applicable significance threshold without mitigation. Therefore, mitigation is not required.

10.0 CONCLUSION

All analyzed air quality impacts associated with this Project are less than significant without mitigation. This AQIA has the following findings:

- The Project results in less than significant Construction phase emissions impacts, however, standard construction emission reduction measures recommended by the VCAPCD are identified.
- Less than significant impacts from operation phase criteria pollutant emissions;
- Less than significant GHG emission impacts.
- The Project results in less than significant localized health risk impacts.
- The Project is consistent with the Ventura County Air Quality Management Plan.



Photo Date: 4/12/18



SESPE
CONSULTING, INC.

FIGURE

1

SITE LOCATION

Carbon California Agnew Facility
11 S, 304915 m E, 3813190 m N
Ventura County, CA

PROJECT #:	CA19.18.05	DATE:	12/21/18
SCALE:		DRAWN BY:	RDF

APPENDIX A

Construction Phase Emissions

Project - Construction Engines

							^A Emission Factors (g/kw-hr)									Operating Hrs Max Year
Engine Use	Engine Family	Registration #	HP	Load Factor	Equipment Type Assumed	Year Used	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4	
Drawworks	WDDXH12.7EGD	133815	370	0.74	Generator Sets	2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	72
Drawworks	WDDXH12.7EGD	133815	370	0.74	Generator Sets	2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	72
Mud Pump	8MDDL31.8XRR	145700	850	0.74	Generator Sets	2018	N/A	0.26	1.6	4.85	N/A	0.16	N/A	N/A	N/A	192
Mud Pump	3DDXL31.8XRE	120083	850	0.74	Generator Sets	2018	N/A	0.3	1.2	8.9	N/A	0.17	N/A	N/A	N/A	192
Marathon Genset	7PKXL06.6PJ1	141014	203	0.74	Generator Sets	2018	N/A	0.18	1.8	3.42	N/A	0.15	N/A	N/A	N/A	240
Marathon Genset	7PKXL06.6PJ1	141696	225	0.74	Generator Sets	2018	N/A	0.18	1.8	3.42	N/A	0.15	N/A	N/A	N/A	240

							Emissions g/hp-hr									^B Operating Hrs Max Year
Engine Use	Engine Family	Registration #	HP	Load Factor	Equipment Type	Year Used	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4	
Drawworks	WDDXH12.7EGD	133815	370	0.74	Generator Sets	2018	18.52	0.211	1.028	2.31	0.005	0.069	0.069	568.3	0.019	120
Drawworks	WDDXH12.7EGD	133815	370	0.74	Generator Sets	2018	18.52	0.211	1.028	2.31	0.005	0.069	0.069	568.3	0.019	120
Mud Pump	8MDDL31.8XRR	145700	850	0.74	Generator Sets	2018	76.62	0.190	1.193	3.613	0.005	0.119	0.095	568.3	0.025	156
Mud Pump	3DDXL31.8XRE	120083	850	0.74	Generator Sets	2018	76.62	0.224	0.895	6.637	0.005	0.127	0.095	568.3	0.025	156
Marathon Genset	7PKXL06.6PJ1	141014	203	0.74	Generator Sets	2018	12.55	0.134	1.342	2.550	0.006	0.112	0.072	568.3	0.02	120
Marathon Genset	7PKXL06.6PJ1	141696	225	0.74	Generator Sets	2018	12.55	0.134	1.342	2.550	0.006	0.112	0.072	568.3	0.02	120

Load Factors based on CalEEMod Appendix D Table 3.3 factor for Generator Sets
Emissions Factors based on CalEEMod Appendix D Table 3.4 factor for Generator Sets

Shaded Cells Represent CalEEMod Emissions Factors

Un-shaded cells represent factors based on CARB certification

A) California Code of Regulations (13 CCR), Section 2423, exhaust certification standards (STD) and certification levels (CERT) per engine family (https://www.arb.ca.gov/msprog/offroad/cert/cert.php?eng_id=OFCI&year=2007)

B) Operating hours max year reduced to account for idling and working time while in operation. Working and idling specifications gathered from Kenai Drilling Company employee Carl Hathaway on November 19, 2018.

Combined emissions factors of NMCH+NOx are assumed to be 95% NOx and 5% NMHC based on Carl Moyer Program Guidelines

Fuel Based Construction EMS

Data Type/Units	Data	Source
BSFC (lbs fuel/hp-hr):	0.367	(based on offroad 2011)
Density of Diesel Fuel (lb/gal):	7.05	(based on AP-42 App A)
Daily Fuel Use (gal/day)	400	kenai drilling
Daily Fuel Use (lb/day)	2820	calculation
Daily HpHrs	7683.9	calculation
Annual Days of Operation	10.0	kenai drilling
PM10 emission rate (g/hphr)	0.126769176	Project Construction Engine Sheet
Daily grams PM10 Emissions	974.0846743	calculation
Daily lb PM10 Emissions	2.147489109	calculation
Annual lb PM10 Emissions	21.47489109	calculation
Conservative Hrs/Day Estimate	8	estimate
Hourly PM10 Emissions (lbs)	0.268436139	calculation
Conservative Hrs/Day Estimate	24	actual project
Hourly PM10 Emissions (lbs)	0.089478713	calculation

	Emissions								
	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
Maximum Device Rate g/hp-hr	76.62	0.22	1.34	6.64	0.01	0.13	0.10	568.30	0.03
Maximum Daily Emissions (grams)	588,742.23	1,718.97	10,313.84	50,996.20	46.10	974.08	729.97	4,366,766.16	192.10
Maximum Annual Emission (grams)	5,887,422.34	17,189.73	103,138.38	509,961.98	461.04	9,740.85	7,299.73	43,667,661.58	1,920.98
Maximum Daily Emissions (lbs)	1,297.95	3.79	22.74	112.43	0.10	2.15	1.61	9,627.07	0.42
Maximum Annual Emissions (lbs)	12,979.54	37.90	227.38	1,124.27	1.02	21.47	16.09	96,270.71	4.24

APPENDIX B

Operational Phase Emissions

- Baseline
- Project
- Total

Baseline - Emission Calculation Summary**Summary of Estimated Criteria Emissions**

Source	Calculated Emissions (tons/year)				
	ROC	NOx	PM10	SOx	CO
Flares	0.0078	0.0109	0.0016	0.0109	0.0574
Tanks	0.0333				
Loading Facilities	0.0018				
Oil Wells	1.0950				
VMT	0.0000	0.0002	0.0018	0.0000	0.0000
Diesel Engines (construction)	0	0	0	0	0
TOTAL	1.1380	0.0110	0.0034	0.0109	0.0574

Source	Calculated Emissions (lbs/year)				
	ROC	NOx	PM10	SOx	CO
Flares	15.5095	21.7132	3.1019	21.7132	114.7700
Tanks	66.6390				
Loading Facilities	3.6733				
Oil Wells	2190.0000				
VMT	0.0919	0.3547	3.6059	0.0105	0.0181
Diesel Engines (construction)	0	0	0	0	0
TOTAL	2275.9136	22.0679	6.7078	21.7237	114.7881

Source	Calculated Emissions (lbs/hr)				
	ROC	NOx	PM10	SOx	CO
Flares	0.0018	0.0025	0.0004	0.0025	0.0131
Tanks	0.0076				
Loading Facilities	0.0004				
Oil Wells	0.2500				
VMT	0.0000	0.0002	0.0017	0.0000	0.0000
Diesel Engines (construction)	0	0	0	0	0
TOTAL	0.2598	0.0026	0.0021	0.0025	0.0131

^A Speciated ROC Emission Factors and Emissions

Sum of ROC fugitive emissions from wells, piping, flanges, tanks, and loading rack:	0.2580	lb/hour
---	---------------	---------

Pollutant Name	CAS#	Emission Factor (lbs/lb VOC)	Emissions (lbs/day)	Emissions (lbs/year)	Emissions (lbs/hour)
Benzene	71432	0.0035	0.0217	7.9111	0.0009
Hydrogen sulfide	7783064	0.0143	0.0886	32.3225	0.0037
Toluene	108883	0.0034	0.0211	7.6851	0.0009
Xylenes (mixed)	1330207	0.0070	0.0433	15.8222	0.0018

Assumptions and Sources

A) Speciation for oilfield equipment fugitive ROC emissions from the San Joaquin Valley APCD AB-2588 Hot Spots Air Toxics Profiles for district approved toxic emission factors. District Policy based on Actual ST in the valley. District Toxic Profile ID #204. Received from Ventura County APCD Manager, Kerby Zozula, on September 24, 2018.

Baseline - Flares**Usage Data**

Unit ID#		
^D District Toxic Profile ID	9	
Operating Hours Per Day	24	hours/day
^A Operating Days Per year	365	days/year
^E Heating Value	861.9	BTU/scf
^A Flare Max Hourly Throughput	0.8	MMBtu/hr
	800,000	Btu/hr
	928.18	scf/hr
	0.0411	MCF / hr
^B Flare Production	0.9860	Mscf/day for all wells
	986.00	scf/day for all wells
	41.0959	scf/hr for all wells
	359,890.00	scf/year for all wells
	0.3599	MMCF / year

^C Criteria Emission Factors

Unit	ROC	NOx	PM	SOx	CO
lb/MMBTU	0.0500	0.0700	0.0100	0.0700	0.3700

Criteria Emissions

Unit	ROC	NOx	PM	SOx	CO
lb/MMcf	43.0950	60.3330	8.6190	60.3330	318.9030
lb/year	15.5095	21.7132	3.1019	21.7132	114.7700
tons/year	0.0078	0.0109	0.0016	0.0109	0.0574
lb/hr	0.0018	0.0025	0.0004	0.0025	0.0131
lb/day	0.0425	0.0595	0.0085	0.0595	0.3144

^D Speciated ROC Emission Factors and Emissions

Pollutant Name	CAS#	Emission Factor (lb/mmcf)	Emissions (lb/day)	Emissions (lb/year)	Emissions (lb/hr)
Acetaldehyde	75070	4.30E-02	4.24E-05	1.55E-02	1.77E-06
Acrolein	107028	1.00E-02	9.86E-06	3.60E-03	4.11E-07
Benzene	71432	1.59E-01	1.57E-04	5.72E-02	6.53E-06
Ethyl benzene	100414	1.44E+00	1.42E-03	5.18E-01	5.92E-05
Formaldehyde	50000	1.17E+00	1.15E-03	4.21E-01	4.81E-05
Hexane	110543	2.90E-02	2.86E-05	1.04E-02	1.19E-06
Naphthalene	91203	1.10E-02	1.08E-05	3.96E-03	4.52E-07
PAHs, total, w/o individ. components reported	1151	3.00E-03	2.96E-06	1.08E-03	1.23E-07
Propylene	115071	2.44E+00	2.41E-03	8.78E-01	1.00E-04
Toluene	108883	5.80E-02	5.72E-05	2.09E-02	2.38E-06
Xylenes (mixed)	1330207	2.90E-02	2.86E-05	1.04E-02	1.19E-06

Baseline - Flares**Assumptions and Sources**

- A) Information from Permit #00004 engineering file Public Record Request. Received from Ventura County APCD Manager, Kerby Zozula, on August 29, 2018.
- B) Historic Agnew Oil Well No. 1, 2, and 3 gas production data from the Department of Oil, Gas, and Geothermal Resources (DOGGR) Online Data website. Production values based on the year 2015 because 2017 data was not produced each day of a 365 day year, and because 2016 DOGGR data displayed a gas production value of 0. Because of these reasons, oil, gas, and water baseline production values from 2015 were chosen to be most representative.
- C) Criteria pollutant emission factors for a non-BACT flare from AP-42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources, Section 5: Industrial Flares.
- D) Speciation for Natural Gas Flare External Combustion ROC emissions from the San Joaquin Valley APCD AB-2588 Hot Spots Air Toxics Profiles from table, "Natural Gas Fired External Combustion Equipment" in the May 2001 update of VCAPCD AB 2588 Combustion Emission Factors. Received from Ventura County APCD Manager, Kerby Zozula, on September 24, 2018.
- E) Heating value from Gas Analysis by Chromatography report on Agnew Oil Well No. 2 from Pacific Gas Technology (PGT), ASTM D 1945/D 3588, sampled and analyzed on September 25, 2018.

Baseline - Tanks**Usage Data**

Unit ID #		
^A Emission Control Factor	90.00%	(vapor recovery and flare)
^A Operating Days Per Year	365	days/year
Operating Hours Per Day	24	hours/day
^A Crude Oil Vapor Pressure	1.5	psi
Number of Wells	3	Wells

2015 Oil Production (Oil Production Tanks)

^B Oil Production Per Well	1.5973	bbl/day/well
^B Total Oil Production	4.7918	bbl/day
Crude Oil Storage Tank	875	bbl/year
Wash Tank	875	bbl/year
^A Crude Oil Storage Tank Capacity	500	bbl
^A Wash Tank Capacity	500	bbl
Number of Oil Tanks	2	tanks

2015 Water Production (Water Production Tanks)

	Well 1	Well 2	Well 3
Days Well Produced:	365	365	365
Water Produced (bbl/yr):	302	603	1013
Average Per Well (bbl/year/ well):	302	603	1013
Average Water Production Per Well	639	bbl/year/well	
^B Average Water Production Per Well:	1.7516	bbl/day/well	
^B Total Water Production	5.2548	bbl/day	
Produced Water Tank 1		bbl/year	
Produced Water Tank 2		bbl/year	
^A Produced Water Tank 1 Capacity	250	bbl	
^A Produced Water Tank 2 Capacity	250	bbl	
Number of PW Tanks	2	tanks	

Criteria Emission Factors: Breathing and Working

Unit Description	Breathing	Working
	Uncontrolled ROC EF¹ (lb/ bbl-yr)	Uncontrolled ROC EF¹ (lb/Mbbl)
Crude Oil Storage Tank	0.43	12.23
Wash Tank	0.43	12.23
^D Produced Water Tank 1	0.43	
^D Produced Water Tank 2	0.43	

Baseline - Tanks**Criteria Emissions: Breathing and Working**

Unit Description	Breathing		
	Controlled ROC (tons/year)	Controlled ROC (lbs/hr)	Controlled ROC (lbs/day)
Crude Oil Storage Tank (Oil Production Tank 1)	0.0108	0.0025	0.0589
Wash Tank (Oil Production Tank 2)	0.0108	0.0025	0.0589
^D Produced Water Tank 1	0.0054	0.0012	0.0295
^D Produced Water Tank 2	0.0054	0.0012	0.0295
TOTAL	0.0323	0.0074	0.1767

Unit Description	Working		
	Controlled ROC (tons/year)	Controlled ROC (lbs/hr)	Uncontrolled ROC (lbs/day)
Crude Oil Storage Tank (Oil Production Tank 1)	0.0005	0.0001	0.0029
Wash Tank (Oil Production Tank 2)	0.0005	0.0001	0.0029
^D Produced Water Tank 1			
^D Produced Water Tank 2			
TOTAL	0.0011	0.0002	0.0059

Assumptions and Sources

- A) Information from Permit #00004 engineering file Public Record Request. Received from Ventura County APCD Manager, Kerby Zozula, on August 29,
- B) Historic Agnew Oil Well No. 1, 2, and 3 production data from the Department of Oil, Gas, and Geothermal Resources (DOGGR) Online Data webbase. Production values based on the year 2015 because 2017 data was not produced each day of a 365 day year, and because 2016 DOGGR data displayed a gas production value of 0. Because of these reasons, oil, gas, and water baseline production values from 2015 were chosen to be most representative.
- C) Ventura County APCD criteria pollutant default emission factors.
- D) In the Ventura County APCD, it is assumed that working emissions are not produced from process water tanks or diluent tanks, which is the reason for no emission factors or emission calculations.
- E) For year 2017, production was scaled-up to determine production over a 365 day year for all three (3) wells.

Baseline - Loading Facilities

Usage Data

Number of Wells	3	Wells
^B Oil Production Per Well (2015)	1.5973	bbl/day/well
Total Oil Production	5	bbl/day
Operating Days/year	365	days
^A Control Efficiency	90%	
Operating Hours/day	24	hours
Total Fluid	1,749	bbl/year
^A Rated Capacity	200	bbl/hr

^C Criteria Emission Factors

Unit	ROC
lbs/Mgal	2.7400

Criteria Emissions

Unit	ROC Emissions
lbs/day	0.0101
lbs/hour	0.0004
lbs/year	3.6733
Tons/year	0.00184

^E True Vapor Pressure Calculation

True vapor pressure (psia) can also be assumed from AP42 Table 7.1-2

$$\text{True Vapor Pressure} = \text{RVP} \cdot e^{[C_0(\text{IRTEMP}-\text{ITEMP})]}$$

RVP =	Reid Vapor Pressure =	0.45
Co =	Constant =	-6622.5
ITEMP =	Inverse of RVP temperature (559.69°R) =	0.001786703
IRTEMP =	Inverse of holding temperature =	0.001667528
	TVP =	0.99

Assumptions and Sources

A) Information from Permit #00004 engineering file Public Record Request. Received from Ventura County APCD Manager, Kerby Zozula, on August 29, 2018.

B) Historic Agnew Oil Well No. 1, 2, and 3 production data from the Department of Oil, Gas, and Geothermal Resources (DOGGR) Online Data website. Production values based on the year 2015 because 2017 data was not produced each day of a 365 day year, and because 2016 DOGGR data displayed a gas production value of 0. Because of these reasons, oil, gas, and water baseline production values from 2015 were chosen to be most representative.

C) Ventura County APCD criteria pollutant default uncontrolled emission factors.

D) Criteria emission factors from AP-42, Section 5.2.

E) True Vapor Pressure equation from SBCAPCD Rule 325.

Baseline - Oil Wells**Usage Data**

Number of wells	3	Wells
Average operational Days Per Well	365	Days
Average operational Hours Per Day	24	Hours
Number of Well Days Operated	1,095	Days
1 barrell oil (bbl) conversion	5.61	cubic feet

^B 2015 Well Oil Production

	Well 1	Well 2	Well 3
Days Well Produced	365	365	365
Oil Produced (bbl/yr)	330	526	893
Average Per Well (bbl/year/ well)	330	526	893

Average Production of All 3 Wells:	583.0000	bbl/year/well
Average Production of All 3 Wells:	1.5973	bbl/day/well
Sum of All 3 Wells:	1,749.0000	bbl/ yr
	4.7918	bbl/ day
	360,000.0000	scf/ yr
	986.3014	scf/ day
	0.9863	Mscf/ day
	41.0959	scf/hr
	0.3600	MMCF / year
	4.11E-05	MMCF / hour
	4.11E-02	MCF / hour

^A Criteria Emission Factors

Unit	^CROC
lb/well-day	2.0

Criteria Emissions

ROC (tons/year)	ROC (lbs/hr)	ROC (lb/year)	ROC (lb/day)
1.0950	0.2500	2190.0000	6.0000

Assumptions and Sources

A) Information from Permit #00004 engineering file Public Record Request. Received from Ventura County APCD Manager, Kerby Zozula, on August 29, 2018.

B) Historic Agnew Oil Well No. 1, 2, and 3 production data from the Department of Oil, Gas, and Geothermal Resources (DOGGR) Online Data webase. Production values based on the year 2015 because 2017 data was not produced each day of a 365 day year, and because 2016 DOGGR data displayed a gas production value of 0. Because of these reasons, oil, gas, and water baseline production values from 2015 were choosen to be most representative.

C) APCD emission factor.

D) For year 2017, production was scaled-up to determine production over a 365 day year for all three (3) wells.

Baseline - VMTs

Usage Data

Hours per trucking day	8	hours
Days per week	5	day/wk
Trucking days per year	260.5	days
Weeks per year	52.1	weeks/yr

Employees Transporting Oil and Wastewater

On-Site, On-Road Truck, Unpaved

^A Vehicle Classification	HHD Fleet Truck, Diesel, T7 Tractor	
^J Total number of trucks	5	trucks
Trips per week per truck	2	trips / wk / truck
Trips per week for all trucks	10	trips / wk
^B On Site Road Length (One Way)	700	feet
On Site Road Length	0.1326	miles
VMT per week for all trucks	1.3258	VMT/week for all trucks
VMT per day for all trucks	0.2652	VMT/day for all trucks
VMT per hour for all trucks	0.0331	VMT/ hour for all trucks
VMT per year for all trucks	69.0720	VMT/ year for all trucks

Off-Site, On-Road Truck, Paved

^A Vehicle Classification	HHD Fleet Truck, Diesel, T7 Tractor	
^C Total number of trucks	5	trucks
Trips per week per truck	2	trips / wk / truck
Trips per week for all trucks	10	trips / wk
^B Off Site Road Length (One Way)	2500	feet
Off Site Road Length	0.4735	miles
VMT per week for all trucks	4.7349	VMT/week for all trucks
VMT per day for all trucks	0.9470	VMT/day for all trucks
VMT per hour for all trucks	0.1184	VMT/ hour for all trucks
VMT per year for all trucks	246.6857	VMT/ year for all trucks

Fugitive PM10 and PM2.5 Emission Factors and Emissions

^DUnpaved Road Emission Factors (On Site VMTs, On Road Truck, Unpaved Road):

	On-road Trucks	
	PM10	PM2.5
S = silt content (%)	4.8	
W _l = loaded truck wt (tons)	40	
W _u = unloaded truck wt (tons)	15	
W = avg truck weight	27.5	
Uncontrolled EF (lb/VMT)	1.7821	0.3778
Control Efficiency	80%	80%
Emission Factor (lb/VMT)	0.3564	0.0756
Daily Emissions (lb/day)	0.0945	0.0200
Hourly Emissions (lb/hour)	0.0118	0.0025
Annual Emissions (lb/year)	24.6191	5.2193

EF (lb/VMT)= 4.9 * (S/12)^{0.7} * (W/3)^{0.45}
Silt content based on mean Sand and Gravel Processing from AP-42 Table 13.2.2-1.
Control efficiency for unpaved roads in baseline is 80% for watering.
PM2.5 emissions are 21.2% of PM10 for unpaved roads (SCAQMD *Updated CEIDARS Table*).

Baseline - VMTs

Paved Road Emission Factors (Off Site VMTs, On Road Truck, Paved Road):

	On-road Trucks	
	PM10	PM2.5
k= particle size multiplier (lb/vmt)	0.0022	0.00054
sL = road surface silt loading (g/m ²)	0.2	0.2
W _l = loaded truck wt (tons)	40	40
W _u = unloaded truck wt (tons)	15	15
W = avge truck weight	27.50	27.50
Uncontrolled EF (lb/VMT)	0.0149	0.0037
Control Efficiency	80%	80%
Emission Factor (lb/VMT)	0.0030	0.0007
Daily Emissions (lb/day)	0.0028	0.0007
Hourly Emissions (lb/hour)	0.0004	0.0001
Annual Emissions (lb/year)	0.7373	0.1810

EF (lb/VMT)= k * (sL)^{0.91} * (W)^{1.02}
Particle size multiplier based on AP-42 Table 13.2.1-1
Silt Loading based on ADT of 500 - 5000 from AP-42 Table 13.1-2
Control efficiency for unpaved roads in baseline is 80% for watering.

Particulate Matter Totals from On Site and Off Site, Unpaved and Paved Roads:

	Off-road Trucks		On-road Trucks	
	PM10	PM2.5	PM10	PM2.5
Hourly Emissions (lb/hour)			0.0122	0.0026
Annual Emissions (lb/year)			25.3564	5.4002

Speciated Fugitive PM10 Emission Factors and Emissions (On and Off Site VMTs, On Road, Paved Road)

Pollutant Name	Emission factor (ppmw)	Emissions (lbs/year)	Emissions (lbs/hour)
ARSENIC	20	5.07E-04	2.43E-07
BERYLLIUM	1	2.54E-05	1.22E-08
CADMIUM	1	2.54E-05	1.22E-08
CHROMIUM HEXAVALENT	0	0.00E+00	0.00E+00
CHROMIUM NONHEXAVALENT	50	1.27E-03	6.08E-07
COPPER	100	2.54E-03	1.22E-06
LEAD	50	1.27E-03	6.08E-07
MANGANESE	500	1.27E-02	6.08E-06
MERCURY	0	0.00E+00	0.00E+00
NICKEL	20	5.07E-04	2.43E-07
SELENIUM	5	1.27E-04	6.08E-08
SILICA, CRYSTALLINE	100000	2.54E+00	1.22E-03
ZINC	200	5.07E-03	2.43E-06

Baseline - VMTs
EMFAC2014 Emission Factors for Criteria Emissions

^GEMFAC2014 Emission Rates for T7 Tractor (Off Site, On Road, Paved)

2018 Emission Factors (g/VMT)							
ROC	CO	NOx	SOx	PM10	PM2.5	CO2	^H CO2e
0.1321	0.5100	5.1846	0.0151	0.0260	0.0249	1579.2033	1658.1635

Criteria Emissions

On-Site, On-Road, Unpaved

Daily Emissions (lb/day)						
ROC	NOx	CO	PM10	PM2.5	SOx	
0.0001	0.0030	0.0003	0.0000	0.0000	0.0000	
Hourly Emissions (lb/hour)						
ROC	NOx	CO	PM10	PM2.5	SOx	
0.0000	0.0004	0.0000	0.0000	0.0000	0.0000	
Annual Emissions (lb/year)						
ROC	NOx	CO	PM10	PM2.5	SOx	CO2e (MT/y)
0.0201	0.7888	0.0776	0.0040	0.0038	0.0023	0.1144

Off-Site, On-Road, Paved

Daily Emissions (lb/day)						
ROC	NOx	CO	PM10	PM2.5	SOx	
0.0003	0.0108	0.0011	0.0001	0.0001	0.0000	
Hourly Emissions (lb/hour)						
ROC	NOx	CO	PM10	PM2.5	SOx	
0.0000	0.0014	0.0001	0.0000	0.0000	0.0000	
Annual Emissions (lb/year)						
ROC	NOx	CO	PM10	PM2.5	SOx	CO2e (MT/y)
0.0718	2.8171	0.2771	0.0141	0.0135	0.0082	0.4087

Total Criteria Emissions

	ROC	CO	NOx	SOx	^F PM10	PM2.5	CO2e (MT/year)
Hourly (lb/hour)	0.0000	0.0002	0.0017	0.0000	0.0000	0.0000	0.5231
Annual (lb/year)	0.0919	0.3547	3.6059	0.0105	0.0181	0.0173	
Daily (lb/day)	0.0004	0.0014	0.0138	0.0000	0.0001	0.0001	

Baseline - VMTs
Assumptions and Sources

- A) Assume T7 Tractor EMFAC2014 vehicle category used for the transport of oil and wastewater on and off site.
- B) Google Earth software was used to measure the VMTed on site and off site. The on site VMT distance was assumed to include the 350 foot site unpaved driveway. The off site VMT distance was assumed to extend from the bottom of the on site driveway to the intersection of Koenigstein Road and California State Route 150.
- C) The baseline setting for overall heavy duty truck traffic reflects the maximum weekly fluid production established in 1989 - the CEQA baseline for traffic volume on Highway 150 is a weekly average of 6.6 to 11.8 one-way truck trips per week. Emissions calculated using 5 trucks to remain conservative.
- D) Unpaved Road emissions factor from AP42 Section 13.2.2.
- E) Paved Road emissions factor from AP42 Section 13.2.1.
- F) Assume PM10 emissions produced by diesel engines are equal to the amount of diesel engine exhaust produced. Diesel engines are used here for the transport of oil and wastewater.
- G) Emission Rates from California Air Resources Board EMFAC2014 (v1.0.7) Web Base, Source: <https://www.arb.ca.gov/emfac/2014/>. Rates based on the following parameters: Region Type: Air District, Region: Ventura County APCD, Calendar Year: 2018, Vehicle Class: T7 Tractor, Model Year: Aggregated, Speed: Aggregated, Fuel: Diesel, Season: Annual, and Vehicle Category: EMFAC2011 Categories.
- H) CO2e emissions factor determined by scaling CO2 factor up by 5%, per the methodologies found in the BAAQMD GHG Model (BGM). This accounts for emissions of CH4, N2O, and air conditioner evaporative loss.
- I) San Diego County APCD, H01 - Haul Roads, General, Paved, & Unpaved, Default Trace Metal Composition.
- J) Assume that the number of on site truck trips is the same as the number of off site truck trips.

Project - Emission Calculation Summary**Summary of Estimated Criteria Emissions**

Source	Calculated Emissions (tons/year)				
	ROC	NOx	PM10	SOx	CO
Flares	0.2359	0.3303	0.0472	0.3303	1.7460
Tanks	0.0456				
Loading Facilities	0.0230				
Oil Wells	1.0950				
VMT	0.0000	0.0013	0.0000	0.0000	0.0001
Diesel Engines (construction)	0.0657	1.3828	0.0363	0.0017	0.3565
TOTAL	1.4653	1.7144	0.0835	0.3320	2.1027

Source	Calculated Emissions (lbs/year)				
	ROC	NOx	PM10	SOx	CO
Flares	471.8903	660.6464	94.3781	660.6464	3491.9879
Tanks	91.2837				
Loading Facilities	45.9946				
Oil Wells	2190.0000				
VMT	0.0668	2.6088	0.0131	0.0077	0.2767
Diesel Engines (construction)	131.3441	2765.6110	72.6022	3.3904	713.0758
TOTAL	2930.5795	3428.8662	166.9934	664.0444	4205.3404

Source	Calculated Emissions (lbs/hr)				
	ROC	NOx	PM10	SOx	CO
Flares	0.0539	0.0754	0.0108	0.0754	0.3986
Tanks	0.0104				
Loading Facilities	0.0053				
Oil Wells	0.2500				
VMT	0.0004	0.0149	0.0001	0.0000	0.0017
Diesel Engines (construction)	0.9224	18.7828	0.5026	0.0241	5.0737
TOTAL	1.2423	18.8731	0.5135	0.0996	5.4740

^A Speciated ROC Emission Factors and Emissions

Sum of ROC fugitive emissions from wells, piping, flanges, tanks, and loading rack:	0.2657	lb/hour
---	---------------	---------

Pollutant Name	CAS#	Emission Factor (lbs/lb VOC)	Emissions (lbs/day)	Emissions (lbs/year)	Emissions (lbs/hour)
Benzene	71432	0.0035	0.0223	8.1455	0.0009
Hydrogen sulfide	7783064	0.0143	0.0912	33.2801	0.0038
Toluene	108883	0.0034	0.0217	7.9127	0.0009
Xylenes (mixed)	1330207	0.0070	0.0446	16.2909	0.0019

Assumptions and Sources

A) Speciation for oilfield equipment fugitive ROC emissions from the San Joaquin Valley APCD AB-2588 Hot Spots Air Toxics Profiles for district approved toxic emission factors. District Policy based on Actual ST in the valley. District Toxic Profile ID #204. Received from Ventura County APCD Manager, Kerby Zozula, on September 24, 2018.

Project - Flares**Usage Data**

Unit ID#		
^D District Toxic Profile ID	9	
Operating Hours Per Day	24	hours/day
^A Operating Days Per year	365	days/year
^E Heating Value	861.9	BTU/scf
^A Flare Max Hourly Throughput	0.8	MMBtu/hr
	800,000	Btu/hr
	928.18	scf/hr
	1.2500	MCF / hr
^B Flare Production	7,008	MMBtu/yr
	10	Mscf gas/day/well
	3	Wells
	30	Mscf gas/day for all wells
	30,000	scf/day for all wells
	1,250	scf/hr for all wells
	10,950,000	scf/year for all wells
	10.95	MMCF / year

^C Criteria Emission Factors

Unit	ROC	NOx	PM	SOx	CO
lb/MMBTU	0.0500	0.0700	0.0100	0.0700	0.3700

Criteria Emissions

Unit	ROC	NOx	PM	SOx	CO
lb/MMcf	43.0950	60.3330	8.6190	60.3330	318.9030
lb/year	471.8903	660.6464	94.3781	660.6464	3491.9879
tons/year	0.2359	0.3303	0.0472	0.3303	1.7460
lb/hr	0.0539	0.0754	0.0108	0.0754	0.3986
lb/day	1.2929	1.8100	0.2586	1.8100	9.5671

^D Speciated ROC Emission Factors and Emissions

Pollutant Name	CAS#	Emission Factor (lb/mmcf)	Emissions (lb/day)	Emissions (lb/year)	Emissions (lb/hr)
Acetaldehyde	75070	4.30E-02	1.29E-03	4.71E-01	5.38E-05
Acrolein	107028	1.00E-02	3.00E-04	1.10E-01	1.25E-05
Benzene	71432	1.59E-01	4.77E-03	1.74E+00	1.99E-04
Ethyl benzene	100414	1.44E+00	4.32E-02	1.58E+01	1.80E-03
Formaldehyde	50000	1.17E+00	3.51E-02	1.28E+01	1.46E-03
Hexane	110543	2.90E-02	8.70E-04	3.18E-01	3.63E-05
Naphthalene	91203	1.10E-02	3.30E-04	1.20E-01	1.38E-05
PAHs, total, w/o individ. components reported	1151	3.00E-03	9.00E-05	3.29E-02	3.75E-06
Propylene	115071	2.44E+00	7.32E-02	2.67E+01	3.05E-03
Toluene	108883	5.80E-02	1.74E-03	6.35E-01	7.25E-05
Xylenes (mixed)	1330207	2.90E-02	8.70E-04	3.18E-01	3.63E-05

Project - Flares**Assumptions and Sources**

- A) Information from Permit #00004 engineering file Public Record Request. Received from Ventura County APCD Manager, Kerby Zozula, on August 29, 2018.
- B) Email response from Jane Farkas regarding answers to questions about the Agnew Oil Field Health Risk Assessment; received August 17, 2018.
- C) Criteria pollutant emission factors for a non-BACT flare from AP-42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources, Section 5: Industrial Flares.
- D) Speciation for Natural Gas Flare External Combustion ROC emissions from the San Joaquin Valley APCD AB-2588 Hot Spots Air Toxics Profiles from table, "Natural Gas Fired External Combustion Equipment" in the May 2001 update of VCAPCD AB 2588 Combustion Emission Factors. Received from Ventura County APCD Manager, Kerby Zozula, on September 24, 2018.
- E) Heatling value from Gas Analysis by Chromatography report on Agnew Oil Well No. 2 from Pacific Gas Technology (PGT), ASTM D 1945/D 3588, sampled and analyzed on September 25, 2018.

Project - Tanks**Usage Data**

Unit ID #		
^A Emission Control Factor	90.00%	(vapor recovery and flare)
^A Operating Days Per Year	365	days/year
Operating Hours Per Day	24	hours/day
^A Crude Oil Vapor Pressure	1.5	psi
Number of Wells	3	Wells
Oil Production		
^B Oil Production Per Well	20	bbl/day/well
Total Oil Production	60	bbl/day
Crude Oil Storage Tank (Oil Production Tank 1)	10,950	bbl/year
Wash Tank (Oil Production Tank 2)	10,950	bbl/year
^A Crude Oil Storage Tank (Oil Production Tank 1)	500	bbl
^A Wash Tank (Oil Production Tank 2)	500	bbl
Number of Oil Tanks	2	tanks
Water Production		
^B Water Production Per Well	2	bbl/day/well
Total Water Production	6	bbl/day
Produced Water Tank 1		bbl/year
Produced Water Tank 2		bbl/year
^A Produced Water Tank 1 Capacity	250	bbl
^A Produced Water Tank 2 Capacity	250	bbl
Number of PW Tanks	2	tanks

^C Criteria Emission Factors: Breathing and Working

Unit Description	Breathing	Working
	Uncontrolled ROC EF ¹ (lb/bbl-yr)	Uncontrolled ROC EF ¹ (lb/Mbbl)
Crude Oil Storage Tank (Oil Production Tank 1)	0.43	12.23
Wash Tank (Oil Production Tank 2)	0.43	12.23
^D Produced Water Tank 1	0.43	
^D Produced Water Tank 2	0.43	

Project - Tanks**Criteria Emissions: Breathing and Working**

Unit Description	Breathing		
	Controlled ROC (tons/year)	Controlled ROC (lbs/hr)	Controlled ROC (lbs/day)
Crude Oil Storage Tank (Oil Production Tank 1)	0.0108	0.0025	0.0589
Wash Tank (Oil Production Tank 2)	0.0108	0.0025	0.0589
^D Produced Water Tank 1	0.0054	0.0012	0.0295
^D Produced Water Tank 2	0.0054	0.0012	0.0295
TOTAL	0.0323	0.0074	0.1767

Unit Description	Working		
	Controlled ROC (tons/year)	Controlled ROC (lbs/hr)	Uncontrolled ROC (lbs/day)
Crude Oil Storage Tank (Oil Production Tank 1)	0.0067	0.0015	0.0367
Wash Tank (Oil Production Tank 2)	0.0067	0.0015	0.0367
^D Produced Water Tank 1			
^D Produced Water Tank 2			
TOTAL	0.0134	0.0031	0.0734

Assumptions and Sources

- A) Information from Permit #00004 engineering file Public Record Request. Received from Ventura County APCD Manager, Kerby Zozula, on August 29, 2018.
- B) Email response from Jane Farkas regarding answers to questions about the Agnew Oil Field Health Risk Assessment; received August 17, 2018.
- C) Ventura County APCD criteria pollutant default emission factors.
- D) In the Ventura County APCD, it is assumed that working emissions are not produced from process water tanks or diluent tanks, which is the reason for no emission factors or emission calculations.

Project - Loading Facilities**Usage Data**

Unit ID#		
Number of Wells	3	Wells
^B Oil Production Per Well	20	bbl/day/well
Total Oil Production	60	bbl/day
Operating Days/year	365	days
^A Control Efficiency	90%	
Operating Hours/day	24	hours
Total Fluid	21,900	bbl/year
^A Rated Capacity	200	bbl/hr

^C Criteria Emission Factors

Unit	ROC
lbs/Mgal	2.7400

Criteria Emissions

Unit	ROC Emissions
lbs/day	0.1260
lbs/hour	0.0053
lbs/year	45.9946
Tons/year	0.02300

^E True Vapor Pressure Calculation

True vapor pressure (psia) can also be assumed from AP42 Table 7.1-2

$$\text{True Vapor Pressure} = \text{RVP} \cdot e^{C_0(\text{IRTEMP}-\text{ITEMP})}$$

RVP =	Reid Vapor Pressure =	0.45
Co=	Constant =	-6622.5
ITEMP =	Inverse of RVP temperature (559.69°R) =	0.001786703
IRTEMP=	Inverse of holding temperature =	0.001667528
	TVP=	0.99

Assumptions and Sources

A) Information from Permit #00004 engineering file Public Record Request. Received from Ventura County APCD Manager, Kerby Zozula, on August 29, 2018.

B) Email response from Jane Farkas regarding answers to questions about the Agnew Oil Field Health Risk Assessment; received August 17, 2018.

C) Ventura County APCD criteria pollutant default uncontrolled emission factors.

D) Criteria emission factors from AP-42, Section 5.2.

E) True Vapor Pressure equation from SBCAPCD Rule 325.

Project - Oil Wells**Usage Data**

1 barrell oil (bbl)	5.61	cubic feet
Number of wells	3	Wells
^A Average operational Days Per Well	365	Days
^A Average operational Hours Per Day	24	Hours
Number of Well Days Operated	1,095	Days
^B Oil Well Production Estimation Per Well	20	bbl/day/well
# Wells	3	wells
Oil Well Production Estimation	60	bbl/day
	336.6	scf/day
	14.025	scf/hr

^A Criteria Emission Factors

Unit	^CROC
lb/well-day	2.0

Criteria Emissions

ROC (tons/year)	ROC (lbs/hr)	ROC (lb/year)	ROC (lb/day)
1.0950	0.2500	2190.0000	6.0000

Assumptions and Sources

A) Information from Permit #00004 engineering file Public Record Request. Received from Ventura County APCD Manager, Kerby Zozula, on August 29, 2018.

B) Email response from Jane Farkas regarding answers to questions about the Agnew Oil Field Health Risk Assessment; received August 17, 2018.

C) APCD emission factor.

Project - Construction-Specific VMTs (years 1-4)

Usage Data

Hours per trucking day	8	hours
Days per week	5	day/wk
Employees transporting oil and wastewater days per year	260.5	days
Additional construction employees days per year	10	days
Construction equipment transportation days per year	4	days
Weeks per year	52.1	weeks/yr

Employees Transporting Oil and Wastewater

On-Site, On-Road Truck, Unpaved

^A Vehicle Classification:	HHD Fleet Truck, Diesel, T7 Tractor	
^L Total number of trucks	3	trucks
Trips/ week /truck	2	trips / wk / truck
Trips/week for all trucks	6	trips / wk
^B On Site Road Length (One Way)	700	feet
On Site Road Length	0.1326	miles
VMT per week for all trucks	0.7955	VMT/week for all trucks
VMT per year for one truck	13.8144	VMT/year for one truck
VMT per year for all trucks	41.4432	VMT/ year for all trucks
VMT per day for all trucks	0.1591	VMT/day for all trucks
VMT per hour for all trucks	0.0199	VMT/ hour for all trucks

Additional Construction Employees

On-Site, On-Road Truck, Unpaved

^A Vehicle Classification	LDT2, Gas	
^L Total number of shifts per day	2	shifts / day
^L Hours per shift	12	hours / shift
^L Employees per shift	10	Employees / shift
^L Trips per day per truck	2	Trips / day / truck
^L Total days with additional employees	10	days/year
^K Total number of trips all vehicles all days	400	trips/well drilled
^B On Site Road Length (one-way)	700	feet/trip
On Site Road Length (one-way)	0.1326	miles/trip
VMT per year for one truck	5.3030	mile / yr / truck
VMT per year for all trucks	53.0303	miles/ year for all trucks
VMT per day for all trucks	0.2036	VMT/ day for all trucks
VMT per hour for all trucks	0.0254	VMT/ hour for all trucks

Off-Site, On-Road Truck, Paved

^A Vehicle Classification	HHD Fleet Truck, Diesel, T7 Tractor	
^C Total number of trucks	3	trucks
Trips/ week /truck	2	trips / wk / truck
Trips/week for all trucks	6	trips / wk
^B Off Site Road Length (One Way)	2500	feet
Off Site Road Length	0.4735	miles
VMT per week for all trucks	2.8409	VMT/week for all trucks
VMT per year for one truck	49.3371	VMT/year for one truck
VMT per year for all trucks	148.0114	VMT/ year for all trucks
VMT per day for all trucks	0.5682	VMT/day for all trucks
VMT per hour for all trucks	0.0710	VMT/ hour for all trucks

Off-Site, On-Road Truck, Paved

^A Vehicle Classification	LDT2, Gas	
^L Total number of shifts per day	2	shifts / day
^L Hours per shift	12	hours / shift
^L Employees per shift	10	Employees / shift
^L Trips per day per truck	2	Trips / day / truck
^L Total days with additional employees	10	days
^K Total number of trips all vehicles all days	400	trips/well drilled
^B On Site Road Length (one-way)	2500	feet/trip
On Site Road Length (one-way)	0.4735	miles/trip
VMT per year for one truck	18.9394	mile / yr / truck
VMT per year for all trucks	189.3940	miles/ year for all trucks
VMT per day for all trucks	0.7270	VMT/ day for all trucks
VMT per hour for all trucks	0.0909	VMT/ hour for all trucks

Project - Construction-Specific VMTs (years 1-4)

Construction Equipment Transportation

On-Site, On-Road Truck, Unpaved

^A Vehicle Classification:	HHD Fleet Truck, Diesel, T7 Tractor	
^{C,J} Total number of trucks	8	trucks
Trips per day per truck	2	trips / day / truck
Trips per day for all trucks	16	trips / day / truck
Days needed to transport equipment	2	days/well
Total days for construction equip. Transport	4	days/year
Total number of trips all vehicles all days	64	trips/well
^B On Site Road Length (one-way)	700	feet/trip
On Site Road Length (one-way)	0.1326	miles/trip
VMT per year for one truck	1.0606	miles/year for one truck
VMT per year for all trucks	8.4849	VMT/ year for all trucks
VMT per day for all trucks	2.1212	miles/day for all trucks
VMT per hour for all trucks	0.2652	VMT/ hour for all trucks

Off-Site, On-Road Truck, Paved

^A Vehicle Classification:	HHD Fleet Truck, Diesel, T7 Tractor	
^{C,J} Total number of trucks	8	trucks
Trips per day per truck	2	trips / day / truck
Trips per day for all trucks	16	trips / day / truck
Days needed to transport equipment	2	days/well
Total days for construction equip. Transport	4	days/year
Total number of trips all vehicles all days	32	trips/well
^B On Site Road Length (one-way)	2500	feet/trip
On Site Road Length (one-way)	0.4735	miles/trip
VMT per year for one truck	1.8939	miles/year for one truck
VMT per year for all trucks	15.1515	VMT/ year for all trucks
VMT per day for all trucks	7.5758	miles/day for all trucks
VMT per hour for all trucks	0.9470	VMT/ hour for all trucks

VMT Totals

		On-Site	Off-Site
Gas and Diesel Engine Total (Employees Transporting Oil and Wastewater + Additional Construction Employees + Equipment Transportation):	VMT per day for all trucks	2.4839	8.8710
	VMT per hour for all trucks	0.3105	1.1089
	VMT per year for all trucks	102.9584	352.5569

Fugitive PM10 and PM2.5 Emission Factors and Total (Employees Transporting Oil and Wastewater + Additional Construction Employees + Equipment Transportation) Emissions

^DUnpaved Road Emission Factors (On Site VMTs, On Road Truck, Unpaved Road):

	PM10	PM2.5
S = silt content (%)	4.8	
W _l = loaded truck wt (tons)	40	
W _u = unloaded truck wt (tons)	15	
W = avg truck weight	27.5	
Uncontrolled EF (lb/VMT)	1.7821	0.3778
Control Efficiency	80%	80%
Emission Factor (lb/VMT)	0.3564	0.0756
Daily Emissions (lb/day)	0.8853	0.1877
Hourly Emissions (lb/hour)	0.1107	0.0235
Annual Emissions (lb/year)	230.6258	48.8927

EF (lb/VMT)= 4.9 * (S/12)^{0.7} * (W/3)^{0.45}
Silt content based on mean Sand and Gravel Processing from AP-42 Table 13.2.2-1.
Control efficiency for unpaved roads in baseline is 80% for watering.
Control efficiency for unpaved roads in baseline is 80% for watering.

Project - Construction-Specific VMTs (years 1-4)

^E Paved Road Emission Factors (Off Site VMTs, On Road Truck, Paved Road):

	PM10	PM2.5
k= particle size multiplier (lb/vmt)	0.0022	0.00054
sL = road surface silt loading (g/m ²)	0.2	0.2
W _l = loaded truck wt (tons)	40	40
W _u = unloaded truck wt (tons)	15	15
W = avge truck weight	27.50	27.50
Uncontrolled EF (lb/VMT)	0.0149	0.0037
Control Efficiency	80%	80%
Emission Factor (lb/VMT)	0.0030	0.0007
Daily Emissions (lb/day)	0.0265	0.0065
Hourly Emissions (lb/hour)	0.0033	0.0008
Annual Emissions (lb/year)	6.9070	1.6954

EF (lb/VMT)= k * (sL)^{0.91} * (W)^{1.02}
Particle size multiplier based on AP-42 Table 13.2.1-1.
Silt Loading based on ADT of 500 - 5000 from AP-42 Table 13.1-2.
Control efficiency for unpaved roads in baseline is 80% for watering.

Particulate Matter Totals from On Site and Off Site, Unpaved and Paved Roads:

	Off-road Trucks		On-road Trucks	
	PM10	PM2.5	PM10	PM2.5
Hourly Emissions (lb/hour)			0.1140	0.0243
Annual Emissions (lb/year)			237.5328	50.5880

^I Speciated Fugitive DUST PM10 Emission Factors and Total (Employees Transporting Oil and Wastewater + Equip. Transposport + Additional Construction Employees) Emissions (On and Off Site VMTs, On Road, Paved Road)

Pollutant Name	Emission factor (ppmw)	CAS #	Emissions (lbs/year)	Emissions (lbs/hour)
ARSENIC	20	7440382	4.75E-03	2.28E-06
BERYLLIUM	1	7440417	2.38E-04	1.14E-07
CADMIUM	1	7440439	2.38E-04	1.14E-07
CHROMIUM HEXAVALENT	0	18540299	0.00E+00	0.00E+00
CHROMIUM NONHEXAVALENT	50	7440473	1.19E-02	5.70E-06
COPPER	100	7440508	2.38E-02	1.14E-05
LEAD	50	1128	1.19E-02	5.70E-06
MANGANESE	500	7439965	1.19E-01	5.70E-05
MERCURY	0	7439976	0.00E+00	0.00E+00
NICKEL	20	7440020	4.75E-03	2.28E-06
SELENIUM	5	7782492	1.19E-03	5.70E-07
SILICA, CRYSTALLINE	100000	1175	2.38E+01	1.14E-02
ZINC	200	7440666	4.75E-02	2.28E-05

EMFAC2014 Emission Factors for Criteria Emissions

^FEMFAC2014 Emission Rates for Gas Pick-Up Truck (LDT2, On Site, On Road, Paved)

2018 Emission Factors (g/VMT)							
ROC	CO	NOx	SOx	PM10	PM2.5	CO2	^H CO2e
0.0213	0.9929	0.1148	0.0040	0.0017	0.0016	394.1230	413.8291

^G EMFAC2014 Emission Rates for Diesel HHD Fleet Truck (T7 Tractor, Off Site, On Road, Paved)

2018 Emission Factors (g/VMT)							
ROC	CO	NOx	SOx	PM10	PM2.5	CO2	^H CO2e
0.1321	0.5100	5.1846	0.0151	0.0260	0.0249	1579.2033	1658.1635

Project - Construction-Specific VMTs (years 1-4)

Criteria Emissions

Employees Transporting Oil and Wastewater

On-Site, On-Road Truck, Unpaved

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0018	0.0002	0.0000	0.0000	0.0000
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0002	0.0000	0.0000	0.0000	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0121	0.4733	0.0466	0.0024	0.0023	0.0014
					CO2e (MT/y)
					0.0687

Off-Site, On-Road, Paved

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0002	0.0065	0.0006	0.0000	0.0000	0.0000
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0008	0.0001	0.0000	0.0000	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0431	1.6903	0.1663	0.0085	0.0081	0.0049
					CO2e (MT/y)
					0.2452

Total of Off- and On- Site Employee Oil and Wastewater Transport Emissions

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0002	0.0083	0.0008	0.0000	0.0000	0.0000
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0010	0.0001	0.0000	0.0000	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0551	2.1635	0.2128	0.0108	0.0104	0.0063
					CO2e (MT/y)
					0.3139

Additional Construction Employees

On-Site, On-Road Truck, Unpaved

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0001	0.0004	0.0000	0.0000	0.0000
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0000	0.0001	0.0000	0.0000	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0001	0.0005	0.0045	0.0000	0.0000	0.0000
					CO2e (MT/y)
					0.0000

Project - Construction-Specific VMTs (years 1-4)
Off-Site, On-Road Truck, Paved

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0002	0.0016	0.0000	0.0000	0.0000
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0000	0.0002	0.0000	0.0000	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0003	0.0018	0.0159	0.0000	0.0000	0.0001
					CO2e (MT/y)
					0.0000

Total of Off- and On- Site Additional Construction Employee Transport Emissions

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0002	0.0020	0.0000	0.0000	0.0000
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0000	0.0003	0.0000	0.0000	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0004	0.0024	0.0204	0.0000	0.0000	0.0001
					CO2e (MT/y)
					0.0000

Construction Equipment Transportation

On-Site, On-Road Truck, Unpaved

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0006	0.0242	0.0024	0.0001	0.0001	0.0001
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0001	0.0030	0.0003	0.0000	0.0000	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0025	0.0969	0.0095	0.0005	0.0005	0.0003
					CO2e (MT/y)
					0.0141

Off-Site, On-Road Truck, Paved

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0022	0.0865	0.0085	0.0004	0.0004	0.0003
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0003	0.0108	0.0011	0.0001	0.0001	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0088	0.3461	0.0340	0.0017	0.0017	0.0010
					CO2e (MT/y)
					0.0251

Total of Off- and On- Site Construction Equipment Transport Emissions

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0028	0.1107	0.0109	0.0006	0.0005	0.0003
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0004	0.0138	0.0014	0.0001	0.0001	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0113	0.4430	0.0436	0.0022	0.0021	0.0013
					CO2e (MT/y)
					0.0392

Project - Construction-Specific VMTs (years 1-4)
Diesel Engine Total (Employees Transporting Oil and Wastewater + Equipment Transportation) Criteria Emissions

	ROC	CO	NOx	SOx	PM10 ^M	PM2.5	CO2e (MT/year)
Hourly (lb/hour)	0.0004	0.0015	0.0149	0.0000	0.0001	0.0001	0.3530
Annual (lb/year)	0.0664	0.2564	2.6065	0.0076	1.31E-02	0.0125	

Diesel + Gas Engine Total (Employees Transporting Oil and Wastewater + Additional Construction Employees + Equipment Transportation) Criteria Emissions

	ROC	CO	NOx	SOx	PM10	PM2.5	CO2e (MT/year)
Hourly (lb/hour)	0.0004	0.0017	0.0149	0.0000	0.0001	0.0001	0.3530
Annual (lb/year)	0.0668	0.2767	2.6088	0.0077	0.0131	0.0125	

Assumptions and Sources

- A) Assume T7 Tractor vehicle classification used for the transport of Rig #4 and associated well drilling equipment and assume LDT2 vehicle classification used for the transport of additional well-drilling employees to and from the Agnew Oilfield.
- B) Google Earth software was used to measure the VMTs on site and off site. The on-site VMT distance was assumed to include the 350 foot site unpaved driveway. The off-site VMT distance was assumed to extend from the bottom of the on-site driveway to the intersection of Koenigstein Road and California State Route 150.
- C) Total number of truck trips per week estimate provided by Kenai Drilling Company representative, Carl Hathaway.
- D) Unpaved Road emissions factor from AP42 Section 13.2.2.
- E) Paved Road emissions factor from AP42 Section 13.2.1.
- F) Emission Rates from California Air Resources Board EMFAC2014 (v1.0.7) Web Base, Source: <https://www.arb.ca.gov/emfac/2014/>. Rates based on the following parameters: Region Type: Air District, Region: Ventura County APCD, Calendar Year: 2018, Vehicle Class: LDT2, Model Year: Aggregated, Speed: Aggregated, Fuel: Gas, Season: Annual, and Vehicle Category: EMFAC2011 Categories.
- G) Emission Rates from California Air Resources Board EMFAC2014 (v1.0.7) Web Base, Source: <https://www.arb.ca.gov/emfac/2014/>. Rates based on the following parameters: Region Type: Air District, Region: Ventura County APCD, Calendar Year: 2018, Vehicle Class: T7 Tractor, Model Year: Aggregated, Speed: Aggregated, Fuel: Diesel, Season: Annual, and Vehicle Category: EMFAC2011 Categories.
- H) CO2e emissions factor determined by scaling CO2 factor up by 5%, per the methodologies found in the BAAQMD GHG Model (BGM). This accounts for emissions of CH4, N2O, and air conditioner evaporative loss.
- I) San Diego County APCD, H01 - Haul Roads, General, Paved, & Unpaved, Default Trace Metal Composition.
- J) Assume that the number of on-site truck trips is the same as the number of off-site truck trips.
- K) Assume the same number of total days with additional well-drilling employees necessary for both on site and off site trucks.
- L) Values used to account for the increase in well-drilling employee traffic volume to and from the Agnew Oilfield from page 4 of the Superior Court of the State of California, County of Ventura, Writ of Mandate court decision made by Judge Glen Reiser on September 1, 2017. The Mandate states, "The project would result in a traffic volume of 40 ADT during the drilling stage."
- M) Assume PM10 emissions produced by diesel engines are equal to the amount of diesel engine exhaust produced. Diesel engines used here for the transport of oil and wastewater and for the transport of construction equipment.

Project - VMTs (years 5-30)

Usage Data

Hours per trucking day	8	hours
Days per week	5	day/wk
Trucking days per year	260.5	days
Weeks per year	52.1	weeks/yr

Employees Transporting Oil and Wastewater

On-Site, On-Road Truck, Unpaved

^A Vehicle Classification	HHD Fleet Truck, Diesel, T7 Tractor	
^K ^J Total number of trucks	3	trucks
Trips per week per truck	2	trips / wk / truck
Trips per week for all trucks	6	trips / wk
^B On Site Road Length (One Way)	700	feet
On Site Road Length	0.1326	miles
VMT per week for all trucks	0.7955	VMT/week for all trucks
VMT per day for all trucks	0.1591	VMT/day for all trucks
VMT per hour for all trucks	0.0199	VMT/ hour for all trucks
VMT per year for all trucks	41.4432	VMT/ year for all trucks

Off-Site, On-Road Truck, Paved

^A Vehicle Classification	HHD Fleet Truck, Diesel, T7 Tractor	
^K ^C Total number of trucks	3	trucks
Trips per week per truck	2	trips / wk / truck
Trips per week for all trucks	6	trips / wk
^B Off Site Road Length (One Way)	2500	feet
Off Site Road Length	0.4735	miles
VMT per week for all trucks	2.8409	VMT/week for all trucks
VMT per day for all trucks	0.5682	VMT/day for all trucks
VMT per hour for all trucks	0.0710	VMT/ hour for all trucks
VMT per year for all trucks	148.0114	VMT/ year for all trucks

Fugitive PM10 and PM2.5 Emission Factors and Emissions

^DUnpaved Road Emission Factor (On Site VMTs, On Road Truck, Unpaved Road):

	On-road Trucks	
	PM10	PM2.5
S = silt content (%)	4.8	
W _l = loaded truck wt (tons)	40	
W _u = unloaded truck wt (tons)	15	
W = avg truck weight	27.5	
Uncontrolled EF (lb/VMT)	1.7821	0.3778
Control Efficiency	80%	80%
Emission Factor (lb/VMT)	0.3564	0.0756
Daily Emissions (lb/day)	0.0567	0.0120
Hourly Emissions (lb/hour)	0.0071	0.0015
Annual Emissions (lb/year)	14.7715	3.1316

EF (lb/VMT)= 4.9 * (S/12)^{0.7} * (W/3)^{0.45}
Silt content based on mean Sand and Gravel Processing from AP-42 Table 13.2.2-1.
Control efficiency for unpaved roads in baseline is 80% for watering.
PM2.5 emissions are 21.2% of PM10 for unpaved roads (SCAQMD *Updated CEIDARS Table*).

Project - VMTs (years 5-30)

^EPaved Road Emission Factors (Off Site VMTs, On Road Truck, Paved Road):

	On-road Trucks	
	PM10	PM2.5
k= particle size multiplier (lb/vmt)	0.0022	0.00054
sL = road surface silt loading (g/m ²)	0.2	0.2
W _i = loaded truck wt (tons)	40	40
W _u = unloaded truck wt (tons)	15	15
W = avge truck weight	27.50	27.50
Uncontrolled EF (lb/VMT)	0.0149	0.0037
Control Efficiency	80%	80%
Emission Factor (lb/VMT)	0.0030	0.0007
Daily Emissions (lb/day)	0.0017	0.0004
Hourly Emissions (lb/hour)	0.0002	0.0001
Annual Emissions (lb/year)	0.4424	0.1086

EF (lb/VMT)= k * (sL)^{0.91} * (W)^{1.02}

Particle size multiplier based on AP-42 Table 13.2.1-1

Silt Loading based on ADT of 500 - 5000 from AP-42 Table 13.1-2

Control efficiency for unpaved roads in baseline is 80% for watering.

Particulate Matter Totals from On Site and Off Site, Unpaved and Paved Roads:

	Off-road Trucks		On-road Trucks	
	PM10	PM2.5	PM10	PM2.5
Hourly Emissions (lb/hour)			0.0073	0.0016
Annual Emissions (lb/year)			15.2139	3.2401

^ISpeciated Fugitive PM10 Emission Factors and Emissions (On and Off Site VMTs, On Road, Paved Road)

Pollutant Name	Emission factor (ppmw)	Emissions (lbs/year)	Emissions (lbs/hour)
ARSENIC	20	3.04E-04	1.46E-07
BERYLLIUM	1	1.52E-05	7.30E-09
CADMIUM	1	1.52E-05	7.30E-09
CHROMIUM HEXAVALENT	0	0.00E+00	0.00E+00
CHROMIUM NONHEXAVALENT	50	7.61E-04	3.65E-07
COPPER	100	1.52E-03	7.30E-07
LEAD	50	7.61E-04	3.65E-07
MANGANESE	500	7.61E-03	3.65E-06
MERCURY	0	0.00E+00	0.00E+00
NICKEL	20	3.04E-04	1.46E-07
SELENIUM	5	7.61E-05	3.65E-08
SILICA, CRYSTALLINE	100000	1.52E+00	7.30E-04
ZINC	200	3.04E-03	1.46E-06

EMFAC2014 Emission Factors for Criteria Emissions

^GEMFAC2014 Emission Rates for Diesel T7 Tractor (Off Site, On Road, Paved)

2018 Emission Factors (g/VMT)							
ROC	CO	NOx	SOx	PM10	PM2.5	CO2	^H CO2e
0.1321	0.5100	5.1846	0.0151	0.0260	0.0249	1579.2033	1658.1635

Criteria Emissions

Daily Emissions (lb/day)						
ROC	NOx	CO	PM10	PM2.5	SOx	
0.0000	0.0018	0.0002	0.0000	0.0000	0.0000	
Hourly Emissions (lb/hour)						
ROC	NOx	CO	PM10	PM2.5	SOx	
0.0000	0.0002	0.0000	0.0000	0.0000	0.0000	
Annual Emissions (lb/year)						
ROC	NOx	CO	PM10	PM2.5	SOx	CO2e (MT/y)
0.0121	0.4733	0.0466	0.0024	0.0023	0.0014	

Daily Emissions (lb/day)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0002	0.0065	0.0006	0.0000	0.0000	0.0000
Hourly Emissions (lb/hour)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0000	0.0008	0.0001	0.0000	0.0000	0.0000
Annual Emissions (lb/year)					
ROC	NOx	CO	PM10	PM2.5	SOx
0.0431	1.6903	0.1663	0.0085	0.0081	0.0049
CO2e (MT/y)					
0.2452					

	ROC	CO	NOx	SOx	F ^{PM10}	PM2.5	CO2e (MT/year)
Hourly (lb/hour)	0.0000	0.0001	0.0010	0.0000	0.0000	0.0000	0.3139
Annual (lb/year)	0.0551	0.2128	2.1635	0.0063	0.0108	0.0104	

Project - VMTs (years 5-30)
Assumptions and Sources

- A) Assume T7 Tractor EMFAC2014 vehicle category used for the transport of oil and wastewater on and off site.
- B) Google Earth software was used to measure the VMTed on site and off site. The on site VMT distance was assumed to include the 350 foot site unpaved driveway. The off site VMT distance was assumed to extend from the bottom of the on site driveway to the intersection of Koenigstein Road and California State Route 150.
- C) The baseline setting for overall heavy duty truck traffic reflects the maximum weekly fluid production established in 1989 - the CEQA baseline for traffic volume on Highway 150 is a weekly average of 6.6 to 11.8 one-way truck trips per week. Emissions calculated using 5 trucks to remain conservative.
- D) Unpaved Road emissions factor from AP42 Section 13.2.2.
- E) Paved Road emissions factor from AP42 Section 13.2.1.
- F) Assume PM10 emissions produced by diesel engines are equal to the amount of diesel engine exhaust produced. Diesel engines used here for the transport of oil and wastewater.
- G) Emission Rates from California Air Resources Board EMFAC2014 (v1.0.7) Web Base, Source: <https://www.arb.ca.gov/emfac/2014/>. Rates based on the following parameters: Region Type: Air District, Region: Ventura County APCD, Calendar Year: 2018, Vehicle Class: T7 Tractor, Model Year: Aggregated, Speed: Aggregated, Fuel: Diesel, Season: Annual, and Vehicle Category: EMFAC2011 Categories.
- H) CO2e emissions factor determined by scaling CO2 factor up by 5%, per the methodologies found in the BAAQMD GHG Model (BGM). This accounts for emissions of CH4, N2O, and air conditioner evaporative loss.
- I) San Diego County APCD, H01 - Haul Roads, General, Paved, & Unpaved, Default Trace Metal Composition.
- J) Assume that the number of on site truck trips is the same as the number of off site truck trips.
- K) Assume no construction in years 5 through 30. The number of trucks used for the transport of oil and wastewater used to calculate the VMT emissions in years 5 to 30 was assumed to remain consistent with the number of trucks used for the transport of oil and wastewater in years 1 to 4.

Project PLUS Baseline Criteria and Speciated Emission Calculation Summary (Years 1-4)**Criteria Emissions**

Source	Calculated Emissions (tons/year)				
	ROC	NOx	PM10	SOx	CO
Flares	0.2437	0.3412	0.0487	0.3412	1.8034
Tanks	0.0790				
Loading Facilities	0.0248				
Oil Wells	2.1900				
VMT	0.0001	0.0015	0.0018	0.0000	0.0001
Diesel Engines (construction)	0.0657	1.3828	0.0363	0.0017	0.3565
TOTAL	2.6032	1.7255	0.0869	0.3429	2.1601

Source	Calculated Emissions (lbs/year)				
	ROC	NOx	PM10	SOx	CO
Flares	487.3997	682.3596	97.4799	682.3596	3606.7579
Tanks	157.9227				
Loading Facilities	49.6679				
Oil Wells	4380.0000				
VMT	0.1587	2.9635	3.6190	0.0181	0.2948
Diesel Engines (construction)	131.3441	2765.6110	72.6022	3.3904	713.0758
TOTAL	5206.4931	3450.9341	173.7012	685.7681	4320.1285

Source	Calculated Emissions (lbs/hr)				
	ROC	NOx	PM10	SOx	CO
Flares	0.0556	0.0779	0.0111	0.0779	0.4117
Tanks	0.0180				
Loading Facilities	0.0057				
Oil Wells	0.5000				
VMT	0.0004	0.0151	0.0018	0.0000	0.0017
Diesel Engines (construction)	0.9224	18.7828	0.5026	0.0241	5.0737
TOTAL	1.5021	18.8757	0.5156	0.1020	5.4871

Project PLUS Baseline Criteria and Speciated Emission Calculation Summary (Years 1-4)**Speciated Emissions**

HARP Emission Inventory Identifier	Identifier Description	Pollutant Name	CAS#	Emissions (lbs/year)	Emissions (lbs/hour)
FUG	Fugitive ROC emissions from wells, piping, flanges, tanks, and loading rack. Includes construction diesel engine emissions. DIESEL EMISSIONS CALCULATED SEPARATELY BASED ON FUEL USE. SEE "Fuel Based Construction PM10" sheet.	DieselExhPM	9901	2.15E+01	2.68E-01
		Benzene	71432	1.61E+01	1.83E-03
		Hydrogen sulfide	7783064	6.56E+01	7.49E-03
		Toluene	108883	1.56E+01	1.78E-03
		Xylenes (mixed)	1330207	3.21E+01	3.67E-03
FLARE	Fugitive ROC emissions from flare.	Acetaldehyde	75070	4.86E-01	5.55E-05
		Acrolein	107028	1.13E-01	1.29E-05
		Benzene	71432	1.80E+00	2.05E-04
		Ethyl benzene	100414	1.63E+01	1.86E-03
		Formaldehyde	50000	1.32E+01	1.51E-03
		Hexane	110543	3.28E-01	3.74E-05
		Naphthalene	91203	1.24E-01	1.42E-05
		PAHs, total, w/o individ. components reported	1151	3.39E-02	3.87E-06
		Propylene	115071	2.76E+01	3.15E-03
		Toluene	108883	6.56E-01	7.49E-05
ROAD	PM10 emissions from the diesel exhaust produced while driving on and off site.	DieselExhPM	9901	3.11E-02	1.49E-04
	Fugitive PM10 dust emissions from driving on and off site.	ARSENIC	7440382	0.0053	0.0000
		BERYLLIUM	7440417	2.63E-04	1.26E-07
		CADMIUM	7440439	2.63E-04	1.26E-07
		CHROMIUM HEXAVALENT	18540299	0.00E+00	0.00E+00
		CHROMIUM NONHEXAVALENT	7440473	1.31E-02	6.31E-06
		COPPER	7440508	2.63E-02	1.26E-05
		LEAD	1128	1.31E-02	6.31E-06
		MANGANESE	7439965	1.31E-01	6.31E-05
		MERCURY	7439976	0.00E+00	0.00E+00
		NICKEL	7440020	0.0053	0.0000
		SELENIUM	7782492	1.31E-03	6.31E-07
		SILICA, CRYSTALLINE	1175	2.63E+01	1.26E-02
		ZINC	7440666	5.26E-02	2.52E-05

Project PLUS Baseline Criteria and Speciated Emission Calculation Summary (Years 5-30)**Criteria Emissions**

Source	Calculated Emissions (tons/year)				
	ROC	NOx	PM10	SOx	CO
Flares	0.2437	0.3412	0.0487	0.3412	1.8034
Tanks	0.0790				
Loading Facilities	0.0248				
Oil Wells	2.1900				
VMT	0.0000	0.0011	0.0000	0.0000	0.0001
TOTAL	2.5375	0.3423	0.0487	0.3412	1.8035

Source	Calculated Emissions (lbs/year)				
	ROC	NOx	PM10	SOx	CO
Flares	487.3997	682.3596	97.4799	682.3596	3606.7579
Tanks	157.9227				
Loading Facilities	49.6679				
Oil Wells	4380.0000				
VMT	0.0551	2.1635	0.0108	0.0063	0.2128
TOTAL	5075.0454	684.5231	97.4908	682.3659	3606.9707

Source	Calculated Emissions (lbs/hr)				
	ROC	NOx	PM10	SOx	CO
Flares	0.0556	0.0779	0.0111	0.0779	0.4117
Tanks	0.0180				
Loading Facilities	0.0057				
Oil Wells	0.5000				
VMT	0.0000	0.0010	0.0000	0.0000	0.0001
TOTAL	0.5794	0.0789	0.0111	0.0779	0.4118

Project PLUS Baseline Criteria and Speciated Emission Calculation Summary (Years 5-30)**Speciated Emissions**

HARP Emission Inventory Identifier	Identifier Description	Pollutant Name	CAS#	Emissions (lbs/year)	Emissions (lbs/hour)
FUG	Fugitive ROC emissions from wells, piping, flanges, tanks, and loading rack.	Benzene	71432	1.61E+01	1.83E-03
		Hydrogen sulfide	7783064	6.56E+01	7.49E-03
		Toluene	108883	1.56E+01	1.78E-03
		Xylenes (mixed)	1330207	3.21E+01	3.67E-03
FLARE	Fugitive ROC emissions from flare.	Acetaldehyde	75070	4.86E-01	5.55E-05
		Acrolein	107028	1.13E-01	1.29E-05
		Benzene	71432	1.80E+00	2.05E-04
		Ethyl benzene	100414	1.63E+01	1.86E-03
		Formaldehyde	50000	1.32E+01	1.51E-03
		Hexane	110543	3.28E-01	3.74E-05
		Naphthalene	91203	1.24E-01	1.42E-05
		PAHs, total, w/o individ. components reported	1151	3.39E-02	3.87E-06
		Propylene	115071	2.76E+01	3.15E-03
		Toluene	108883	6.56E-01	7.49E-05
		Xylenes (mixed)	1330207	3.28E-01	3.74E-05
ROAD	PM10 emissions from the diesel exhaust produced while driving on and off site.	DieselExhPM	9901	1.08E-02	5.21E-06
	Fugitive PM10 on site and off site VMT emissions.	ARSENIC	7440382	3.04E-04	1.46E-07
		BERYLLIUM	7440417	1.52E-05	7.30E-09
		CADMIUM	7440439	1.52E-05	7.30E-09
		CHROMIUM HEXAVALENT	18540299	0.00E+00	0.00E+00
		CHROMIUM NONHEXAVALENT	7440473	7.61E-04	3.65E-07
		COPPER	7440508	1.52E-03	7.30E-07
		LEAD	1128	7.61E-04	3.65E-07
		MANGANESE	7439965	7.61E-03	3.65E-06
		MERCURY	7439976	0.00E+00	0.00E+00
		NICKEL	7440020	3.04E-04	1.46E-07
		SELENIUM	7782492	7.61E-05	3.65E-08
		SILICA, CRYSTALLINE	1175	1.52E+00	7.30E-04
		ZINC	7440666	3.04E-03	1.46E-06

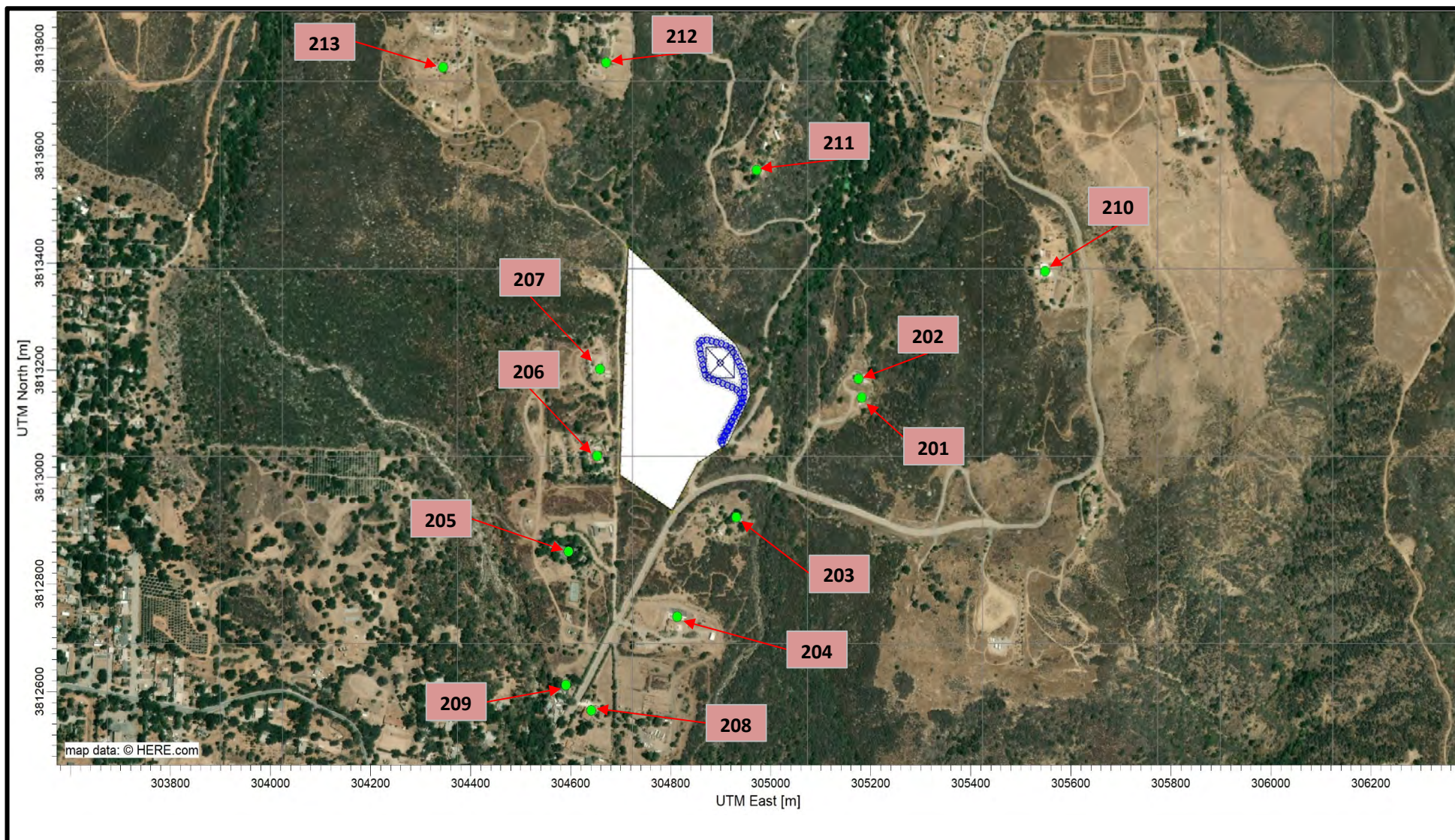
APPENDIX C

Health Risk Assessment

Figure 1 - Health Risk Assessment Receptor Map

Figure 2 - Health Risk Assessment Source Map

Link to modeling files: <https://bit.ly/2V3J51i>



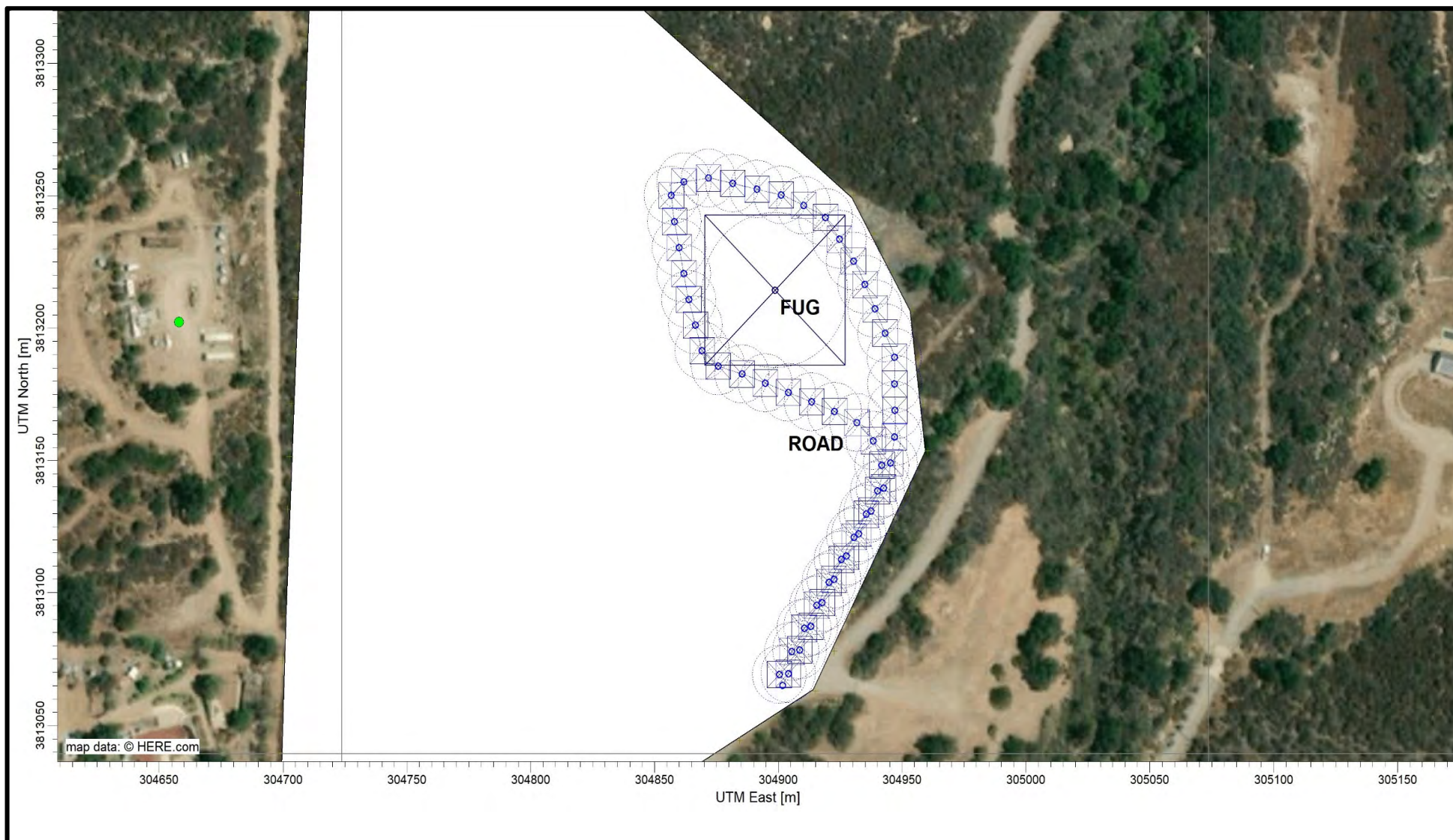
Grey grid represents a subset of total cartesian grid receptors
 Green circles represent individual residential receptors
 Red boxes contain receptor number labels
 White area represents facility boundaries

SESPE
 CONSULTING, INC.

FIGURE
1

Health Risk Assessment Receptor Map
 Carbon California Agnew Facility
 11 S, 304915 m E, 3813190 m N
 Ventura County, CA

PROJECT #:	CA19.18.05	DATE:	12/21/18
SCALE:	AS SHOWN	DRAWN BY:	ADA



ROAD - Line Volume Source

FUG - Volume Source

SESPE
CONSULTING, INC.

FIGURE

2

Health Risk Assessment Source Map

Carbon California Agnew Facility
11 S, 304915 m E, 3813190 m N
Ventura County, CA

PROJECT #:	CA19.18.05	DATE:	12/21/18
SCALE:	AS SHOWN	DRAWN BY:	ADA

REC	NETID	X	Y	1_4f Cancer Risk Sum	5_30f Cancer Risk Sum	1_4f Max Chronic Hazard Index	5_30f Max Chronic Hazard Index	1_4f Max Acute Hazard Index	5_30f Max Acute Hazard Index	Total Cancer Risk Sum	Max Chronic Hazard	Max Acute Hazard
1	UCART1	295898.7	3804214	1.02E-08	2.26E-09	6.88E-05	9.48E-06	0.00010676	0.00010096	1.24E-08	6.88E-05	0.000107
2	UCART1	297898.7	3804214	1.12E-08	2.49E-09	7.76E-05	1.05E-05	0.00012428	0.00011691	1.37E-08	7.76E-05	0.000124
3	UCART1	299898.7	3804214	9.83E-09	2.15E-09	6.67E-05	9.19E-06	0.00014559	0.00013688	1.20E-08	6.67E-05	0.000146
4	UCART1	301898.7	3804214	8.56E-09	1.86E-09	5.80E-05	8.01E-06	0.00016286	0.00015355	1.04E-08	5.80E-05	0.000163
5	UCART1	303898.7	3804214	7.33E-09	1.57E-09	4.97E-05	6.87E-06	0.00017615	0.00016649	8.90E-09	4.97E-05	0.000176
6	UCART1	305898.7	3804214	7.92E-09	1.73E-09	5.36E-05	7.40E-06	0.00020052	0.00018866	9.65E-09	5.36E-05	0.000201
7	UCART1	307898.7	3804214	6.49E-09	1.40E-09	4.40E-05	6.07E-06	0.00017546	0.00016537	7.88E-09	4.40E-05	0.000175
8	UCART1	309898.7	3804214	6.16E-09	1.34E-09	4.17E-05	5.76E-06	0.00015367	0.00014521	7.50E-09	4.17E-05	0.000154
9	UCART1	311898.7	3804214	5.25E-09	1.14E-09	3.52E-05	4.89E-06	0.00012455	0.00011773	6.39E-09	3.52E-05	0.000125
10	UCART1	313898.7	3804214	4.74E-09	1.03E-09	3.19E-05	4.43E-06	0.00010948	0.0001037	5.77E-09	3.19E-05	0.000109
11	UCART1	295898.7	3806214	1.22E-08	2.69E-09	8.27E-05	1.14E-05	0.00012067	0.00011376	1.49E-08	8.27E-05	0.000121
12	UCART1	297898.7	3806214	1.53E-08	3.40E-09	0.00010351	1.43E-05	0.0001571	0.00014851	1.87E-08	0.000104	0.000157
13	UCART1	299898.7	3806214	1.53E-08	3.34E-09	0.00010396	1.43E-05	0.00018024	0.00017006	1.86E-08	0.000104	0.00018
14	UCART1	301898.7	3806214	1.39E-08	3.06E-09	9.45E-05	1.30E-05	0.00023455	0.00022138	1.70E-08	9.45E-05	0.000235
15	UCART1	303898.7	3806214	1.14E-08	2.46E-09	7.79E-05	1.07E-05	0.00024954	0.00023523	1.39E-08	7.79E-05	0.00025
16	UCART1	305898.7	3806214	1.18E-08	2.62E-09	8.01E-05	1.11E-05	0.00026793	0.00025131	1.45E-08	8.01E-05	0.000268
17	UCART1	307898.7	3806214	9.59E-09	2.08E-09	6.52E-05	8.99E-06	0.00023631	0.00022243	1.17E-08	6.52E-05	0.000236
18	UCART1	309898.7	3806214	8.41E-09	1.82E-09	5.65E-05	7.85E-06	0.00020408	0.00019283	1.02E-08	5.65E-05	0.000204
19	UCART1	311898.7	3806214	7.23E-09	1.58E-09	4.90E-05	6.76E-06	0.00016139	0.00015281	8.80E-09	4.90E-05	0.000161
20	UCART1	313898.7	3806214	6.43E-09	1.39E-09	4.35E-05	6.01E-06	0.00013099	0.00012385	7.82E-09	4.35E-05	0.000131
21	UCART1	295898.7	3808214	1.34E-08	2.97E-09	9.08E-05	1.25E-05	0.00011462	0.0001086	1.64E-08	9.08E-05	0.000115
22	UCART1	297898.7	3808214	2.36E-08	5.37E-09	0.00015746	2.18E-05	0.00032272	0.00030104	2.89E-08	0.000157	0.000323
23	UCART1	299898.7	3808214	2.66E-08	5.95E-09	0.00018108	2.49E-05	0.00025878	0.00024452	3.25E-08	0.000181	0.000259
24	UCART1	301898.7	3808214	2.68E-08	5.96E-09	0.00018466	2.52E-05	0.00034362	0.00032353	3.28E-08	0.000185	0.000344
25	UCART1	303898.7	3808214	2.14E-08	4.75E-09	0.00014738	2.01E-05	0.00039915	0.00037574	2.61E-08	0.000147	0.000399
26	UCART1	305898.7	3808214	1.94E-08	4.22E-09	0.00013286	1.82E-05	0.00042886	0.00040427	2.36E-08	0.000133	0.000429
27	UCART1	307898.7	3808214	1.61E-08	3.56E-09	0.00010929	1.51E-05	0.00035581	0.00033515	1.97E-08	0.000109	0.000356
28	UCART1	309898.7	3808214	1.25E-08	2.74E-09	8.53E-05	1.18E-05	0.00026657	0.00025226	1.53E-08	8.53E-05	0.000267
29	UCART1	311898.7	3808214	1.31E-08	2.91E-09	9.18E-05	1.24E-05	0.00021135	0.00019783	1.60E-08	9.18E-05	0.000211
30	UCART1	313898.7	3808214	9.72E-09	2.13E-09	6.62E-05	9.11E-06	0.00014254	0.00013414	1.19E-08	6.62E-05	0.000143
31	UCART1	295898.7	3810214	1.56E-08	3.49E-09	0.00010569	1.46E-05	0.00024815	0.00023047	1.91E-08	0.000106	0.000248
32	UCART1	297898.7	3810214	1.92E-09	4.41E-10	1.28E-05	1.78E-06	3.81E-05	3.55E-05	2.36E-09	1.28E-05	3.81E-05
33	UCART1	299898.7	3810214	4.50E-09	1.04E-09	2.99E-05	4.16E-06	5.65E-05	5.23E-05	5.54E-09	2.99E-05	5.65E-05
34	UCART1	301898.7	3810214	6.10E-09	1.37E-09	4.16E-05	5.71E-06	7.24E-05	6.65E-05	7.47E-09	4.16E-05	7.24E-05
35	UCART1	303898.7	3810214	2.62E-09	5.61E-10	1.82E-05	2.47E-06	0.00013346	0.00012348	3.18E-09	1.82E-05	0.000133
36	UCART1	305898.7	3810214	5.18E-08	1.14E-08	0.00036485	4.91E-05	0.0010691	0.00099873	6.32E-08	0.000365	0.001069
37	UCART1	307898.7	3810214	2.91E-08	6.37E-09	0.0002002	2.74E-05	0.00055431	0.00052342	3.55E-08	0.0002	0.000554
38	UCART1	309898.7	3810214	3.01E-08	6.67E-09	0.00020832	2.83E-05	0.00042692	0.00040136	3.68E-08	0.000208	0.000427
39	UCART1	311898.7	3810214	2.31E-08	5.21E-09	0.00015692	2.16E-05	0.00040912	0.00038108	2.83E-08	0.000157	0.000409
40	UCART1	313898.7	3810214	3.23E-09	7.41E-10	2.23E-05	3.03E-06	3.40E-05	3.14E-05	3.97E-09	2.23E-05	3.40E-05
41	UCART1	295898.7	3812214	9.51E-09	2.09E-09	6.42E-05	8.87E-06	0.00018058	0.00016959	1.16E-08	6.42E-05	0.000181
42	UCART1	297898.7	3812214	1.21E-08	2.72E-09	8.25E-05	1.13E-05	0.00019338	0.00018187	1.49E-08	8.25E-05	0.000193
43	UCART1	299898.7	3812214	2.46E-08	5.54E-09	0.0001671	2.30E-05	0.00032004	0.00030268	3.01E-08	0.000167	0.00032
44	UCART1	301898.7	3812214	7.19E-08	1.62E-08	0.00048559	6.70E-05	0.00062334	0.00058835	8.81E-08	0.000486	0.000623
45	UCART1	303898.7	3812214	3.90E-07	9.33E-08	0.0029337	0.00037701	0.0022699	0.0021272	4.83E-07	0.002934	0.00227
46	UCART1	305898.7	3812214	1.77E-07	3.96E-08	0.0012998	0.00017038	0.0023661	0.0022209	2.17E-07	0.0013	0.002366
47	UCART1	307898.7	3812214	7.69E-08	1.71E-08	0.0005257	7.20E-05	0.00066593	0.00062824	9.40E-08	0.000526	0.000666
48	UCART1	309898.7	3812214	8.63E-09	1.97E-09	5.92E-05	8.08E-06	6.09E-05	5.65E-05	1.06E-08	5.92E-05	6.09E-05
49	UCART1	311898.7	3812214	2.66E-09	5.92E-10	1.84E-05	2.51E-06	4.71E-05	4.34E-05	3.26E-09	1.84E-05	4.71E-05
50	UCART1	313898.7	3812214	1.57E-09	3.51E-10	1.08E-05	1.47E-06	3.63E-05	3.37E-05	1.92E-09	1.08E-05	3.63E-05
51	UCART1	295898.7	3814214	4.91E-09	1.11E-09	3.39E-05	4.61E-06	0.0001273	0.00012061	6.01E-09	3.39E-05	0.000127
52	UCART1	297898.7	3814214	6.79E-09	1.53E-09	4.71E-05	6.39E-06	0.00018408	0.00017449	8.32E-09	4.71E-05	0.000184
53	UCART1	299898.7	3814214	1.04E-08	2.34E-09	7.26E-05	9.80E-06	0.00029543	0.00027974	1.27E-08	7.26E-05	0.000295
54	UCART1	301898.7	3814214	2.36E-08	5.68E-09	0.00017487	2.27E-05	0.00060032	0.0005649	2.93E-08	0.000175	0.0006
55	UCART1	303898.7	3814214	1.70E-08	4.14E-09	0.00010849	1.54E-05	0.00046236	0.00043284	2.11E-08	0.000108	0.000462
56	UCART1	305898.7	3814214	9.28E-09	2.05E-09	5.95E-05	8.50E-06	0.00015624	0.0001464	1.13E-08	5.95E-05	0.000156
57	UCART1	307898.7	3814214	5.95E-09	1.32E-09	3.95E-05	5.51E-06	7.17E-05	6.61E-05	7.27E-09	3.95E-05	7.17E-05
58	UCART1	309898.7	3814214	4.50E-09	1.01E-09	2.99E-05	4.17E-06	5.58E-05	5.19E-05	5.51E-09	2.99E-05	5.58E-05
59	UCART1	311898.7	3814214	3.04E-09	6.83E-10	2.05E-05	2.83E-06	4.20E-05	3.88E-05	3.72E-09	2.05E-05	4.20E-05
60	UCART1	313898.7	3814214	1.70E-09	3.80E-10	1.14E-05	1.58E-06	2.73E-05	2.53E-05	2.08E-09	1.14E-05	2.73E-05
61	UCART1	295898.7	3816214	3.75E-09	8.63E-10	2.66E-05	3.56E-06	0.00011184	0.00010588	4.62E-09	2.66E-05	0.000112
62	UCART1	297898.7	3816214	4.98E-09	1.13E-09	3.56E-05	4.74E-06	0.00015561	0.00014759	6.12E-09	3.56E-05	0.000156
63	UCART1	299898.7	3816214	8.95E-09	2.08E-09	6.46E-05	8.53E-06	0.00027491	0.00025971	1.10E-08	6.46E-05	0.000275
64	UCART1	301898.7	3816214	8.24E-10	1.84E-10	5.63E-06	7.72E-07	5.42E-05	5.00E-05	1.01E-09	5.63E-06	5.42E-05
65	UCART1	303898.7	3816214	9.53E-10	2.06E-10	6.48E-06	8.93E-07	5.68E-05	5.28E-05	1.16E-09	6.48E-06	5.68E-05
66	UCART1	305898.7	3816214	1.14E-09	2.59E-10	7.70E-06	1.06E-06	4.82E-05	4.46E-05	1.40E-09	7.70E-06	4.82E-05

REC	NETID	X	Y	1_4f Cancer Risk Sum	5_30f Cancer Risk Sum	1_4f Max Chronic Hazard Index	5_30f Max Chronic Hazard Index	1_4f Max Acute Hazard Index	5_30f Max Acute Hazard Index	Total Cancer Risk Sum	Max Chronic Hazard	Max Acute Hazard
67	UCART1	307898.7	3816214	1.07E-09	2.43E-10	7.19E-06	9.95E-07	3.77E-05	3.49E-05	1.31E-09	7.19E-06	3.77E-05
68	UCART1	309898.7	3816214	1.38E-09	3.14E-10	9.30E-06	1.28E-06	2.84E-05	2.63E-05	1.69E-09	9.30E-06	2.84E-05
69	UCART1	311898.7	3816214	1.35E-09	3.07E-10	9.18E-06	1.26E-06	2.19E-05	2.03E-05	1.66E-09	9.18E-06	2.19E-05
70	UCART1	313898.7	3816214	8.66E-10	1.98E-10	5.89E-06	8.08E-07	2.48E-05	2.31E-05	1.06E-09	5.89E-06	2.48E-05
71	UCART1	295898.7	3818214	2.25E-10	5.04E-11	1.53E-06	2.10E-07	1.69E-05	1.57E-05	2.75E-10	1.53E-06	1.69E-05
72	UCART1	297898.7	3818214	3.66E-10	8.50E-11	2.47E-06	3.40E-07	1.96E-05	1.83E-05	4.51E-10	2.47E-06	1.96E-05
73	UCART1	299898.7	3818214	3.54E-10	7.92E-11	2.42E-06	3.32E-07	3.51E-05	3.24E-05	4.34E-10	2.42E-06	3.51E-05
74	UCART1	301898.7	3818214	3.77E-10	8.37E-11	2.57E-06	3.53E-07	2.10E-05	1.96E-05	4.61E-10	2.57E-06	2.10E-05
75	UCART1	303898.7	3818214	4.88E-10	1.14E-10	3.34E-06	4.55E-07	5.08E-05	4.72E-05	6.02E-10	3.34E-06	5.08E-05
76	UCART1	305898.7	3818214	5.87E-10	1.35E-10	3.98E-06	5.46E-07	2.58E-05	2.39E-05	7.22E-10	3.98E-06	2.58E-05
77	UCART1	307898.7	3818214	5.00E-10	1.12E-10	3.39E-06	4.67E-07	3.04E-05	2.81E-05	6.13E-10	3.39E-06	3.04E-05
78	UCART1	309898.7	3818214	5.37E-10	1.23E-10	3.64E-06	5.01E-07	2.54E-05	2.36E-05	6.60E-10	3.64E-06	2.54E-05
79	UCART1	311898.7	3818214	6.25E-10	1.40E-10	4.22E-06	5.82E-07	1.36E-05	1.27E-05	7.65E-10	4.22E-06	1.36E-05
80	UCART1	313898.7	3818214	6.10E-10	1.38E-10	4.18E-06	5.71E-07	1.40E-05	1.30E-05	7.49E-10	4.18E-06	1.40E-05
81	UCART1	295898.7	3820214	1.70E-10	3.88E-11	1.17E-06	1.60E-07	1.39E-05	1.29E-05	2.09E-10	1.17E-06	1.39E-05
82	UCART1	297898.7	3820214	2.24E-10	5.03E-11	1.53E-06	2.09E-07	2.67E-05	2.46E-05	2.74E-10	1.53E-06	2.67E-05
83	UCART1	299898.7	3820214	2.66E-10	6.11E-11	1.84E-06	2.49E-07	3.46E-05	3.24E-05	3.27E-10	1.84E-06	3.46E-05
84	UCART1	301898.7	3820214	2.54E-10	5.73E-11	1.74E-06	2.38E-07	1.68E-05	1.56E-05	3.12E-10	1.74E-06	1.68E-05
85	UCART1	303898.7	3820214	3.37E-10	7.68E-11	2.31E-06	3.16E-07	2.37E-05	2.21E-05	4.14E-10	2.31E-06	2.37E-05
86	UCART1	305898.7	3820214	3.78E-10	8.61E-11	2.59E-06	3.54E-07	2.01E-05	1.87E-05	4.65E-10	2.59E-06	2.01E-05
87	UCART1	307898.7	3820214	3.70E-10	8.55E-11	2.53E-06	3.45E-07	2.24E-05	2.07E-05	4.55E-10	2.53E-06	2.24E-05
88	UCART1	309898.7	3820214	3.60E-10	8.26E-11	2.45E-06	3.36E-07	2.27E-05	2.12E-05	4.42E-10	2.45E-06	2.27E-05
89	UCART1	311898.7	3820214	3.96E-10	9.06E-11	2.70E-06	3.70E-07	1.84E-05	1.71E-05	4.87E-10	2.70E-06	1.84E-05
90	UCART1	313898.7	3820214	4.16E-10	9.26E-11	2.82E-06	3.89E-07	7.51E-06	7.00E-06	5.09E-10	2.82E-06	7.51E-06
91	UCART1	295898.7	3822214	1.45E-10	3.32E-11	9.91E-07	1.36E-07	2.16E-05	1.99E-05	1.79E-10	9.91E-07	2.16E-05
92	UCART1	297898.7	3822214	2.02E-10	4.92E-11	1.40E-06	1.89E-07	3.66E-05	3.38E-05	2.52E-10	1.40E-06	3.66E-05
93	UCART1	299898.7	3822214	1.81E-10	4.05E-11	1.23E-06	1.69E-07	1.03E-05	9.55E-06	2.21E-10	1.23E-06	1.03E-05
94	UCART1	301898.7	3822214	2.16E-10	4.72E-11	1.49E-06	2.03E-07	1.88E-05	1.75E-05	2.63E-10	1.49E-06	1.88E-05
95	UCART1	303898.7	3822214	2.80E-10	6.27E-11	1.93E-06	2.63E-07	1.94E-05	1.81E-05	3.43E-10	1.93E-06	1.94E-05
96	UCART1	305898.7	3822214	2.88E-10	6.52E-11	1.98E-06	2.70E-07	2.15E-05	2.01E-05	3.53E-10	1.98E-06	2.15E-05
97	UCART1	307898.7	3822214	2.91E-10	6.64E-11	2.00E-06	2.72E-07	1.45E-05	1.35E-05	3.57E-10	2.00E-06	1.45E-05
98	UCART1	309898.7	3822214	2.69E-10	5.90E-11	1.83E-06	2.52E-07	1.62E-05	1.51E-05	3.28E-10	1.83E-06	1.62E-05
99	UCART1	311898.7	3822214	2.77E-10	6.35E-11	1.91E-06	2.60E-07	1.94E-05	1.80E-05	3.41E-10	1.91E-06	1.94E-05
100	UCART1	313898.7	3822214	2.96E-10	6.81E-11	2.02E-06	2.77E-07	1.45E-05	1.35E-05	3.64E-10	2.02E-06	1.45E-05
101	UCART2	303323.7	3811639	2.29E-07	5.30E-08	0.0015697	0.00021382	0.0020349	0.0019052	2.82E-07	0.00157	0.002035
102	UCART2	303673.7	3811639	2.28E-07	5.21E-08	0.0015781	0.00021413	0.0022092	0.0020679	2.80E-07	0.001578	0.002209
103	UCART2	304023.7	3811639	1.78E-07	4.12E-08	0.0011634	0.00016317	0.0018693	0.0017613	2.19E-07	0.001163	0.001869
104	UCART2	304373.7	3811639	7.92E-08	1.87E-08	0.00050239	7.18E-05	0.00090695	0.00085613	9.79E-08	0.000502	0.000907
105	UCART2	304723.7	3811639	1.47E-07	3.38E-08	0.00096476	0.00013543	0.0027828	0.0026097	1.81E-07	0.000965	0.002783
106	UCART2	305073.7	3811639	1.46E-07	3.46E-08	0.0011146	0.00014201	0.0021519	0.0020041	1.80E-07	0.001115	0.002152
107	UCART2	305423.7	3811639	1.15E-07	2.55E-08	0.00083244	0.00011012	0.0019396	0.0018143	1.40E-07	0.000832	0.00194
108	UCART2	305773.7	3811639	1.07E-07	2.39E-08	0.00075956	0.00010136	0.0017269	0.001619	1.30E-07	0.00076	0.001727
109	UCART2	306123.7	3811639	9.29E-08	2.05E-08	0.00065415	8.81E-05	0.0014784	0.0013899	1.13E-07	0.000654	0.001478
110	UCART2	306473.7	3811639	8.40E-08	1.86E-08	0.00059372	7.97E-05	0.0013303	0.0012522	1.03E-07	0.000594	0.00133
111	UCART2	303323.7	3811989	2.63E-07	6.12E-08	0.0019041	0.00025099	0.0015857	0.0014756	3.24E-07	0.001904	0.001586
112	UCART2	303673.7	3811989	3.16E-07	7.49E-08	0.0023343	0.00030329	0.0019172	0.0017885	3.90E-07	0.002334	0.001917
113	UCART2	304023.7	3811989	3.20E-07	7.50E-08	0.002464	0.00031293	0.0021387	0.0019875	3.95E-07	0.002464	0.002139
114	UCART2	304373.7	3811989	2.84E-07	6.68E-08	0.0022406	0.00028077	0.002571	0.0023873	3.51E-07	0.002241	0.002571
115	UCART2	304723.7	3811989	1.99E-07	4.44E-08	0.0014827	0.00019262	0.0026136	0.0024425	2.43E-07	0.001483	0.002614
116	UCART2	305073.7	3811989	1.98E-07	4.54E-08	0.0014549	0.00019014	0.0027933	0.0026151	2.43E-07	0.001455	0.002793
117	UCART2	305423.7	3811989	1.65E-07	3.73E-08	0.0012128	0.00015882	0.0025387	0.0023718	2.02E-07	0.001213	0.002539
118	UCART2	305773.7	3811989	1.47E-07	3.28E-08	0.0010496	0.00013973	0.0022209	0.0020846	1.79E-07	0.00105	0.002221
119	UCART2	306123.7	3811989	1.28E-07	2.85E-08	0.0009243	0.00012223	0.0018396	0.001729	1.56E-07	0.000924	0.00184
120	UCART2	306473.7	3811989	1.19E-07	2.66E-08	0.00087315	0.00011454	0.0015337	0.0014454	1.46E-07	0.000873	0.001534
121	UCART2	303323.7	3812339	2.47E-07	5.83E-08	0.001756	0.0002338	0.0013914	0.0013132	3.05E-07	0.001756	0.001391
122	UCART2	303673.7	3812339	3.55E-07	8.38E-08	0.0025848	0.0003389	0.0020878	0.0019624	4.38E-07	0.002585	0.002088
123	UCART2	304023.7	3812339	4.62E-07	1.10E-07	0.0034376	0.0004448	0.0026537	0.0024929	5.71E-07	0.003438	0.002654
124	UCART2	304373.7	3812339	4.61E-07	1.07E-07	0.0035683	0.00045249	0.0033207	0.0031131	5.68E-07	0.003568	0.003321
125	UCART2	304723.7	3812339	3.58E-07	8.21E-08	0.0027913	0.00035253	0.0037108	0.0034557	4.40E-07	0.002791	0.003711
126	UCART2	305073.7	3812339	3.25E-07	7.55E-08	0.0024997	0.000318	0.0040947	0.0038059	4.01E-07	0.0025	0.004095
127	UCART2	305423.7	3812339	2.69E-07	6.21E-08	0.0020151	0.00026023	0.0034944	0.0032615	3.31E-07	0.002015	0.003494
128	UCART2	305773.7	3812339	2.21E-07	4.99E-08	0.001656	0.00021424	0.0027784	0.0026053	2.71E-07	0.001656	0.002778
129	UCART2	306123.7	3812339	2.11E-07	4.88E-08	0.0014175	0.00019566	0.0027475	0.0025994	2.60E-07	0.001418	0.002748
130	UCART2	306473.7	3812339	7.02E-08	1.68E-08	0.0004903	6.59E-05	0.00056474	0.00052978	8.70E-08	0.00049	0.000565
131	UCART2	303323.7	3812689	2.12E-07	4.97E-08	0.0014602	0.00019826	0.0014741	0.0013889	2.62E-07	0.00146	0.001474
132	UCART2	303673.7	3812689	3.48E-07	8.31E-08	0.0024322	0.00032695	0.0020033	0.0018938	4.31E-07	0.002432	0.002003

REC	NETID	X	Y	1_4f Cancer Risk Sum	5_30f Cancer Risk Sum	1_4f Max Chronic Hazard Index	5_30f Max Chronic Hazard Index	1_4f Max Acute Hazard Index	5_30f Max Acute Hazard Index	Total Cancer Risk Sum	Max Chronic Hazard	Max Acute Hazard
133	UCART2	304023.7	3812689	5.96E-07	1.42E-07	0.0041393	0.00055852	0.0030504	0.0028917	7.37E-07	0.004139	0.00305
134	UCART2	304373.7	3812689	9.94E-07	2.40E-07	0.0075513	0.00096404	0.0046675	0.0043794	1.23E-06	0.007551	0.004668
135	UCART2	304723.7	3812689	8.87E-07	2.11E-07	0.0078157	0.00091817	0.006197	0.005735	1.10E-06	0.007816	0.006197
136	UCART2	305073.7	3812689	6.55E-07	1.58E-07	0.0056257	0.0006696	0.0065349	0.0059979	8.13E-07	0.005626	0.006535
137	UCART2	305423.7	3812689	1.20E-07	3.04E-08	0.0009282	0.0001171	0.0014202	0.0013297	1.51E-07	0.000928	0.00142
138	UCART2	305773.7	3812689	4.36E-07	1.03E-07	0.0029532	0.00040481	0.004147	0.0039541	5.39E-07	0.002953	0.004147
139	UCART2	306123.7	3812689	3.36E-07	7.85E-08	0.0025179	0.00032497	0.0021749	0.0020453	4.14E-07	0.002518	0.002175
140	UCART2	306473.7	3812689	2.72E-07	6.33E-08	0.0019624	0.00025951	0.0017374	0.0016242	3.36E-07	0.001962	0.001737
141	UCART2	303323.7	3813039	1.33E-07	3.07E-08	0.00091952	0.00012483	0.001502	0.0014171	1.64E-07	0.00092	0.001502
142	UCART2	303673.7	3813039	2.22E-07	5.26E-08	0.0015312	0.00020763	0.002068	0.0019481	2.75E-07	0.001531	0.002068
143	UCART2	304023.7	3813039	4.21E-07	1.00E-07	0.0027851	0.00038726	0.0031999	0.0030349	5.21E-07	0.002785	0.0032
144	UCART2	304373.7	3813039	1.15E-06	2.87E-07	0.0073929	0.001039	0.0053068	0.0050265	1.43E-06	0.007393	0.005307
145	UCART2	304723.7	3813039	4.90E-06	1.44E-06	0.039303	0.0047781	0.009677	0.0090861	6.34E-06	0.039303	0.009677
146	UCART2	305073.7	3813039	3.17E-06	9.29E-07	0.040124	0.0038597	0.013618	0.012418	4.10E-06	0.040124	0.013618
147	UCART2	305423.7	3813039	7.10E-07	1.75E-07	0.0051837	0.0006765	0.0018926	0.0018033	8.86E-07	0.005184	0.001893
148	UCART2	305773.7	3813039	2.16E-07	5.02E-08	0.0014889	0.00020221	0.00066276	0.00062951	2.66E-07	0.001489	0.000663
149	UCART2	306123.7	3813039	4.59E-07	1.04E-07	0.0029759	0.00042066	0.0036514	0.003447	5.63E-07	0.002976	0.003651
150	UCART2	306473.7	3813039	1.12E-07	2.63E-08	0.00072693	0.00010227	0.00047602	0.00044647	1.38E-07	0.000727	0.000476
151	UCART2	303323.7	3813389	8.81E-08	2.12E-08	0.00063147	8.35E-05	0.0014937	0.0014053	1.09E-07	0.000631	0.001494
152	UCART2	303673.7	3813389	1.32E-07	3.20E-08	0.00095506	0.00012523	0.0021721	0.0020429	1.64E-07	0.000955	0.002172
153	UCART2	304023.7	3813389	1.99E-07	4.94E-08	0.0014904	0.00019172	0.0031403	0.0029489	2.49E-07	0.00149	0.00314
154	UCART2	304373.7	3813389	3.44E-07	8.84E-08	0.0025582	0.00032925	0.005166	0.0048838	4.33E-07	0.002558	0.005166
155	UCART2	304723.7	3813389	1.18E-06	3.70E-07	0.0091904	0.0011258	0.010812	0.0099538	1.55E-06	0.00919	0.010812
156	UCART2	305073.7	3813389	5.71E-07	1.43E-07	0.0033057	0.00049802	0.0036018	0.0034327	7.14E-07	0.003306	0.003602
157	UCART2	305423.7	3813389	2.02E-07	4.46E-08	0.0011627	0.00017794	0.00094839	0.00091033	2.47E-07	0.001163	0.000948
158	UCART2	305773.7	3813389	1.08E-07	2.38E-08	0.00064802	9.66E-05	0.0005487	0.00052115	1.32E-07	0.000648	0.000549
159	UCART2	306123.7	3813389	9.16E-08	2.08E-08	0.00056121	8.23E-05	0.00048385	0.00045576	1.12E-07	0.000561	0.000484
160	UCART2	306473.7	3813389	9.77E-08	2.21E-08	0.00059307	8.75E-05	0.0007102	0.00067326	1.20E-07	0.000593	0.00071
161	UCART2	303323.7	3813739	7.03E-08	1.71E-08	0.00051939	6.74E-05	0.0015564	0.0014652	8.74E-08	0.000519	0.001556
162	UCART2	303673.7	3813739	1.22E-08	2.93E-09	7.90E-05	1.11E-05	0.00042878	0.00040289	1.51E-08	7.90E-05	0.000429
163	UCART2	304023.7	3813739	5.42E-08	1.30E-08	0.0003192	4.78E-05	0.0015609	0.0014874	6.72E-08	0.000319	0.001561
164	UCART2	304373.7	3813739	1.90E-08	4.35E-09	0.00012776	1.76E-05	0.00056826	0.00052469	2.33E-08	0.000128	0.000568
165	UCART2	304723.7	3813739	6.18E-08	1.42E-08	0.00038661	5.58E-05	0.0010911	0.0010245	7.60E-08	0.000387	0.001091
166	UCART2	305073.7	3813739	3.70E-08	8.19E-09	0.00022896	3.34E-05	0.0007218	0.00068543	4.52E-08	0.000229	0.000722
167	UCART2	305423.7	3813739	3.30E-08	7.22E-09	0.00020228	2.97E-05	0.00046713	0.00043913	4.02E-08	0.000202	0.000467
168	UCART2	305773.7	3813739	3.33E-08	7.42E-09	0.00020368	2.99E-05	0.00031581	0.00029774	4.07E-08	0.000204	0.000316
169	UCART2	306123.7	3813739	2.80E-08	6.24E-09	0.00017672	2.55E-05	0.00024485	0.00023099	3.42E-08	0.000177	0.000245
170	UCART2	306473.7	3813739	2.33E-08	5.15E-09	0.00014735	2.12E-05	0.00020644	0.00019346	2.84E-08	0.000147	0.000206
171	UCART2	303323.7	3814089	6.59E-09	1.54E-09	4.30E-05	6.04E-06	0.00026322	0.00024663	8.12E-09	4.30E-05	0.000263
172	UCART2	303673.7	3814089	5.35E-09	1.24E-09	3.54E-05	4.93E-06	0.0002069	0.00019382	6.59E-09	3.54E-05	0.000207
173	UCART2	304023.7	3814089	1.28E-08	3.03E-09	8.37E-05	1.18E-05	0.00040098	0.00037291	1.59E-08	8.37E-05	0.000401
174	UCART2	304373.7	3814089	1.12E-08	2.53E-09	7.52E-05	1.04E-05	0.00032032	0.00029377	1.37E-08	7.52E-05	0.00032
175	UCART2	304723.7	3814089	1.85E-08	4.12E-09	0.00011653	1.68E-05	0.00049196	0.00046074	2.26E-08	0.000117	0.000492
176	UCART2	305073.7	3814089	1.46E-08	3.26E-09	9.33E-05	1.33E-05	0.00033415	0.00031268	1.78E-08	9.33E-05	0.000334
177	UCART2	305423.7	3814089	1.53E-08	3.36E-09	9.69E-05	1.39E-05	0.00034615	0.00032644	1.86E-08	9.69E-05	0.000346
178	UCART2	305773.7	3814089	1.27E-08	2.78E-09	8.04E-05	1.16E-05	0.00021313	0.00019964	1.54E-08	8.04E-05	0.000213
179	UCART2	306123.7	3814089	1.07E-08	2.36E-09	6.82E-05	9.75E-06	0.00013203	0.00012478	1.30E-08	6.82E-05	0.000132
180	UCART2	306473.7	3814089	9.37E-09	2.12E-09	6.07E-05	8.59E-06	0.00011406	0.00010656	1.15E-08	6.07E-05	0.000114
181	UCART2	303323.7	3814439	3.07E-09	6.96E-10	2.03E-05	2.84E-06	0.00013125	0.00012143	3.77E-09	2.03E-05	0.000131
182	UCART2	303673.7	3814439	6.51E-09	1.52E-09	4.33E-05	6.01E-06	0.00026348	0.00024375	8.03E-09	4.33E-05	0.000263
183	UCART2	304023.7	3814439	5.03E-09	1.19E-09	3.43E-05	4.68E-06	0.00022152	0.00020004	6.22E-09	3.43E-05	0.000222
184	UCART2	304373.7	3814439	6.52E-09	1.44E-09	4.27E-05	6.01E-06	0.00019027	0.00017707	7.97E-09	4.27E-05	0.00019
185	UCART2	304723.7	3814439	6.64E-09	1.44E-09	4.35E-05	6.14E-06	0.0002273	0.00021148	8.08E-09	4.35E-05	0.000227
186	UCART2	305073.7	3814439	6.54E-09	1.48E-09	4.30E-05	6.03E-06	0.00016266	0.00014954	8.02E-09	4.30E-05	0.000163
187	UCART2	305423.7	3814439	7.32E-09	1.63E-09	4.75E-05	6.73E-06	0.00018134	0.00016967	8.96E-09	4.75E-05	0.000181
188	UCART2	305773.7	3814439	5.74E-09	1.27E-09	3.74E-05	5.28E-06	0.00014489	0.00013421	7.01E-09	3.74E-05	0.000145
189	UCART2	306123.7	3814439	5.67E-09	1.26E-09	3.69E-05	5.21E-06	9.50E-05	8.88E-05	6.93E-09	3.69E-05	9.50E-05
190	UCART2	306473.7	3814439	4.87E-09	1.08E-09	3.18E-05	4.49E-06	6.71E-05	6.25E-05	5.95E-09	3.18E-05	6.71E-05
191	UCART2	303323.7	3814789	2.36E-09	5.25E-10	1.63E-05	2.22E-06	0.00011624	0.00010676	2.89E-09	1.63E-05	0.000116
192	UCART2	303673.7	3814789	3.88E-09	9.02E-10	2.64E-05	3.61E-06	0.00018732	0.00017103	4.78E-09	2.64E-05	0.000187
193	UCART2	304023.7	3814789	4.42E-09	9.84E-10	2.93E-05	4.09E-06	0.00014371	0.00013366	5.40E-09	2.93E-05	0.000144
194	UCART2	304373.7	3814789	3.71E-09	7.93E-10	2.47E-05	3.45E-06	0.00012727	0.00011821	4.50E-09	2.47E-05	0.000127
195	UCART2	304723.7	3814789	3.63E-09	8.10E-10	2.42E-05	3.37E-06	0.00015853	0.00014663	4.44E-09	2.42E-05	0.000159
196	UCART2	305073.7	3814789	3.17E-09	7.26E-10	2.12E-05	2.94E-06	0.00013502	0.00012363	3.90E-09	2.12E-05	0.000135
197	UCART2	305423.7	3814789	3.63E-09	8.16E-10	2.41E-05	3.36E-06	8.65E-05	8.07E-05	4.45E-09	2.41E-05	8.65E-05
198	UCART2	305773.7	3814789	4.32E-09	9.45E-10	2.85E-05	4.00E-06	0.00011185	0.00010465	5.26E-09	2.85E-05	0.000112

REC	NETID	X	Y	1_4f Cancer Risk Sum	5_30f Cancer Risk Sum	1_4f Max Chronic Hazard Index	5_30f Max Chronic Hazard Index	1_4f Max Acute Hazard Index	5_30f Max Acute Hazard Index	Total Cancer Risk Sum	Max Chronic Hazard	Max Acute Hazard
199	UCART2	306123.7	3814789	3.85E-09	8.57E-10	2.54E-05	3.55E-06	9.96E-05	9.21E-05	4.70E-09	2.54E-05	9.96E-05
200	UCART2	306473.7	3814789	3.20E-09	7.19E-10	2.11E-05	2.96E-06	6.25E-05	5.81E-05	3.92E-09	2.11E-05	6.25E-05
201		305181.2	3813150	3.81E-06	8.91E-07	0.021191	0.0033012	0.013891	0.013602	4.70E-06	0.021191	0.013891
202		305175.1	3813184	3.36E-06	7.78E-07	0.017103	0.0028264	0.0083058	0.0081252	4.13E-06	0.017103	0.008306
203		304930.6	3812926	1.74E-06	4.86E-07	0.019825	0.0020147	0.0099171	0.008718	2.23E-06	0.019825	0.009917
204		304812.5	3812740	9.23E-07	2.23E-07	0.0084874	0.0009731	0.0068445	0.0062771	1.15E-06	0.008487	0.006844
205		304595.7	3812860	1.90E-06	4.78E-07	0.015984	0.0019181	0.0070783	0.0066211	2.38E-06	0.015984	0.007078
206		304652.6	3813041	3.79E-06	1.08E-06	0.026814	0.0035154	0.0087016	0.0082218	4.86E-06	0.026814	0.008702
207		304658.1	3813202	2.11E-06	5.96E-07	0.014827	0.0019563	0.0099643	0.0094428	2.71E-06	0.014827	0.009964
208		304641.4	3812566	6.62E-07	1.54E-07	0.0054696	0.00066746	0.0050321	0.0046902	8.16E-07	0.005469	0.005032
209		304590.2	3812613	7.96E-07	1.86E-07	0.0066117	0.00080392	0.0050193	0.004673	9.82E-07	0.006612	0.005019
210		305548.4	3813385	1.26E-07	2.73E-08	0.00074173	0.00011225	0.00056587	0.00053969	1.54E-07	0.000742	0.000566
211		304971.4	3813575	7.93E-08	1.78E-08	0.00047675	7.08E-05	0.0012629	0.0012022	9.70E-08	0.000477	0.001263
212		304670.5	3813774	4.87E-08	1.13E-08	0.00030462	4.39E-05	0.00089863	0.00084285	6.00E-08	0.000305	0.000899
213		304345	3813766	1.65E-08	3.76E-09	0.00011189	1.54E-05	0.00052721	0.00048418	2.03E-08	0.000112	0.000527
214		304954.2	3813207	2.60E-05	1.55E-05	0.1894	0.021646	0.025619	0.025619	4.16E-05	0.1894	0.025619
215		304956.3	3813189	2.30E-05	1.35E-05	0.17775	0.01975	0.027183	0.027183	3.65E-05	0.17775	0.027183
216		304958.3	3813171	1.66E-05	8.86E-06	0.23814	0.020334	0.026824	0.026824	2.55E-05	0.23814	0.026824
217		304960.3	3813154	1.20E-05	5.66E-06	0.25253	0.01915	0.024126	0.024126	1.76E-05	0.25253	0.024126
218		304952.7	3813138	9.49E-06	4.10E-06	0.24279	0.017543	0.02064	0.02064	1.36E-05	0.24279	0.02064
219		304945.1	3813123	8.20E-06	3.03E-06	0.27878	0.018955	0.01644	0.01644	1.12E-05	0.27878	0.01644
220		304937.6	3813108	7.13E-06	2.34E-06	0.26797	0.017922	0.016243	0.013918	9.47E-06	0.26797	0.016243
221		304930	3813093	6.47E-06	1.93E-06	0.25894	0.017157	0.016364	0.013834	8.41E-06	0.25894	0.016364
222		304922.5	3813078	5.89E-06	1.65E-06	0.23999	0.01588	0.016168	0.013605	7.55E-06	0.23999	0.016168
223		304914.9	3813063	5.03E-06	1.42E-06	0.17846	0.012166	0.015677	0.013126	6.44E-06	0.17846	0.015677
224		304899.4	3813053	4.56E-06	1.30E-06	0.13462	0.0095995	0.015353	0.012606	5.85E-06	0.13462	0.015353
225		304884.3	3813044	4.29E-06	1.20E-06	0.11108	0.0082256	0.014176	0.012035	5.49E-06	0.11108	0.014176
226		304869.2	3813035	4.11E-06	1.14E-06	0.091373	0.0070917	0.01325	0.011563	5.24E-06	0.091373	0.01325
227		304854.1	3813026	3.98E-06	1.10E-06	0.076402	0.006235	0.012431	0.010998	5.07E-06	0.076402	0.012431
228		304846	3813012	3.61E-06	9.84E-07	0.062096	0.0052814	0.011651	0.01035	4.59E-06	0.062096	0.011651
229		304837.5	3812997	3.29E-06	8.88E-07	0.051606	0.0045575	0.011016	0.0098277	4.18E-06	0.051606	0.011016
230		304829.1	3812982	3.02E-06	8.07E-07	0.043847	0.0040024	0.010428	0.0093268	3.83E-06	0.043847	0.010428
231		304820.7	3812968	2.79E-06	7.37E-07	0.037896	0.0035614	0.0099622	0.0089368	3.53E-06	0.037896	0.009962
232		304812.2	3812953	2.58E-06	6.76E-07	0.033199	0.0032014	0.0097015	0.0087445	3.26E-06	0.033199	0.009702
233		304803.8	3812938	2.40E-06	6.22E-07	0.029408	0.0029016	0.0094711	0.0085751	3.02E-06	0.029408	0.009471
234		304802.4	3812938	2.41E-06	6.23E-07	0.029368	0.0029016	0.0094582	0.0085691	3.03E-06	0.029368	0.009458
235		304787.5	3812948	2.65E-06	6.89E-07	0.032007	0.003179	0.0093177	0.0084786	3.34E-06	0.032007	0.009318
236		304772.6	3812957	2.91E-06	7.61E-07	0.034026	0.00343	0.0094446	0.0086304	3.67E-06	0.034026	0.009445
237		304757.6	3812966	3.17E-06	8.39E-07	0.03518	0.0036352	0.0095619	0.0087908	4.01E-06	0.03518	0.009562
238		304742.7	3812976	3.42E-06	9.16E-07	0.035426	0.0037828	0.0093696	0.0086467	4.34E-06	0.035426	0.00937
239		304727.8	3812985	3.63E-06	9.87E-07	0.034922	0.0038721	0.0093528	0.0086814	4.62E-06	0.034922	0.009353
240		304712.8	3812995	3.80E-06	1.05E-06	0.033897	0.0039075	0.009286	0.0086515	4.85E-06	0.033897	0.009286
241		304697.9	3813004	3.91E-06	1.09E-06	0.032509	0.0038877	0.0090096	0.0084204	5.00E-06	0.032509	0.00901
242		304698	3813022	4.24E-06	1.21E-06	0.03359	0.004122	0.0092848	0.0087227	5.45E-06	0.03359	0.009285
243		304698.6	3813040	4.55E-06	1.32E-06	0.03434	0.0043232	0.0093846	0.0088396	5.87E-06	0.03434	0.009385
244		304699.1	3813057	4.82E-06	1.43E-06	0.034716	0.0044841	0.0095012	0.0089641	6.25E-06	0.034716	0.009501
245		304699.7	3813074	5.03E-06	1.52E-06	0.034724	0.00459	0.0095697	0.0090328	6.54E-06	0.034724	0.00957
246		304700.2	3813092	5.13E-06	1.57E-06	0.034352	0.0046234	0.010082	0.0095453	6.71E-06	0.034352	0.010082
247		304701	3813112	5.12E-06	1.58E-06	0.033446	0.004562	0.010415	0.0098774	6.70E-06	0.033446	0.010415
248		304701.8	3813132	4.93E-06	1.53E-06	0.031893	0.0043764	0.010563	0.010009	6.47E-06	0.031893	0.010563
249		304702.7	3813152	4.55E-06	1.41E-06	0.029614	0.004049	0.010742	0.010173	5.97E-06	0.029614	0.010742
250		304703.5	3813171	3.98E-06	1.22E-06	0.026665	0.0035826	0.011054	0.010471	5.20E-06	0.026665	0.011054
251		304704.3	3813191	3.30E-06	1.00E-06	0.023301	0.0030406	0.011071	0.010479	4.30E-06	0.023301	0.011071
252		304705.1	3813211	2.68E-06	8.05E-07	0.019868	0.0025191	0.011108	0.010493	3.48E-06	0.019868	0.011108
253		304705.9	3813231	2.18E-06	6.57E-07	0.016733	0.0020815	0.01127	0.010624	2.84E-06	0.016733	0.01127
254		304706.7	3813251	1.82E-06	5.52E-07	0.014255	0.0017514	0.01116	0.010499	2.37E-06	0.014255	0.01116
255		304707.5	3813271	1.58E-06	4.81E-07	0.012452	0.0015192	0.011107	0.01042	2.06E-06	0.012452	0.011107
256		304708.3	3813291	1.41E-06	4.32E-07	0.011203	0.0013608	0.011039	0.010335	1.84E-06	0.011203	0.011039
257		304709.1	3813311	1.28E-06	3.92E-07	0.010289	0.0012443	0.010909	0.010217	1.67E-06	0.010289	0.010909
258		304709.9	3813331	1.19E-06	3.60E-07	0.0096347	0.001158	0.010779	0.010061	1.55E-06	0.009635	0.010779
259		304710.8	3813351	1.12E-06	3.41E-07	0.009177	0.0010977	0.010672	0.0099277	1.46E-06	0.009177	0.010672
260		304711.6	3813371	1.10E-06	3.42E-07	0.0089832	0.0010761	0.010378	0.0096038	1.45E-06	0.008983	0.010378
261		304712.4	3813390	1.11E-06	3.46E-07	0.0086779	0.0010652	0.010614	0.009792	1.46E-06	0.008678	0.010614
262		304713.2	3813410	1.13E-06	3.35E-07	0.0080088	0.001046	0.011702	0.010884	1.47E-06	0.008009	0.011702
263		304714	3813430	1.08E-06	3.09E-07	0.0070225	0.00097242	0.012508	0.011689	1.39E-06	0.007022	0.012508
264		304715.6	3813431	1.10E-06	3.12E-07	0.0071487	0.00099071	0.012518	0.011698	1.42E-06	0.007149	0.012518

REC	NETID	X	Y	1_4f Cancer Risk Sum	5_30f Cancer Risk Sum	1_4f Max Chronic Hazard Index	5_30f Max Chronic Hazard Index	1_4f Max Acute Hazard Index	5_30f Max Acute Hazard Index	Total Cancer Risk Sum	Max Chronic Hazard	Max Acute Hazard
265		304729.9	3813419	1.15E-06	3.48E-07	0.0085152	0.0010771	0.010923	0.010077	1.49E-06	0.008515	0.010923
266		304744.3	3813407	1.23E-06	3.83E-07	0.0094842	0.0011699	0.010877	0.0099807	1.61E-06	0.009484	0.010877
267		304758.6	3813395	1.33E-06	4.21E-07	0.010525	0.0012763	0.011154	0.010215	1.75E-06	0.010525	0.011154
268		304772.9	3813383	1.54E-06	5.01E-07	0.012156	0.0014717	0.012123	0.011074	2.04E-06	0.012156	0.012123
269		304787.2	3813371	1.83E-06	6.08E-07	0.014119	0.0017313	0.013868	0.012711	2.44E-06	0.014119	0.013868
270		304801.5	3813359	2.07E-06	6.89E-07	0.013629	0.0018314	0.017112	0.015901	2.76E-06	0.013629	0.017112
271		304815.8	3813347	1.91E-06	5.84E-07	0.011511	0.0016567	0.02038	0.019492	2.50E-06	0.011511	0.02038
272		304830.1	3813335	1.80E-06	4.83E-07	0.0098302	0.0015277	0.026268	0.025757	2.28E-06	0.00983	0.026268
273		304844.4	3813322	1.84E-06	5.20E-07	0.010278	0.0015658	0.023167	0.022755	2.36E-06	0.010278	0.023167
274		304858.7	3813310	2.56E-06	7.20E-07	0.013743	0.0021515	0.034127	0.033626	3.28E-06	0.013743	0.034127
275		304873	3813298	4.06E-06	1.22E-06	0.022973	0.0034443	0.038779	0.03787	5.29E-06	0.022973	0.038779
276		304887.3	3813286	5.59E-06	2.26E-06	0.041431	0.0050554	0.018887	0.017474	7.85E-06	0.041431	0.018887
277		304901.6	3813274	7.56E-06	3.58E-06	0.068036	0.0072884	0.017408	0.017408	1.11E-05	0.068036	0.017408
278		304915.9	3813262	9.84E-06	5.17E-06	0.10491	0.010172	0.020886	0.019841	1.50E-05	0.10491	0.020886
279		304930.2	3813250	1.24E-05	7.00E-06	0.14154	0.013134	0.020159	0.020159	1.94E-05	0.14154	0.020159
280		304938.4	3813236	1.89E-05	1.15E-05	0.17911	0.017834	0.021398	0.021398	3.04E-05	0.17911	0.021398
281		304946.2	3813221	2.53E-05	1.55E-05	0.18927	0.021154	0.02292	0.02292	4.08E-05	0.18927	0.02292
282		304715	3813430	1.10E-06	3.12E-07	0.0071054	0.0009867	0.012527	0.011702	1.41E-06	0.007105	0.012527
283		304701.2	3813092	5.17E-06	1.58E-06	0.034586	0.0046529	0.010084	0.0095458	6.75E-06	0.034586	0.010084
284		304698.5	3813005	3.93E-06	1.10E-06	0.032646	0.0039055	0.0090169	0.0084277	5.02E-06	0.032646	0.009017
285		304802.9	3812939	2.42E-06	6.25E-07	0.029562	0.0029171	0.0094729	0.0085803	3.04E-06	0.029562	0.009473
286		304853.5	3813027	4.02E-06	1.11E-06	0.077203	0.0062985	0.012428	0.010999	5.12E-06	0.077203	0.012428
287		304914	3813063	5.11E-06	1.43E-06	0.18601	0.012613	0.015766	0.013164	6.54E-06	0.18601	0.015766
288		304959.3	3813154	1.20E-05	5.68E-06	0.25879	0.019512	0.024282	0.024282	1.77E-05	0.25879	0.024282
289		304953.2	3813207	2.67E-05	1.60E-05	0.19393	0.022168	0.026099	0.026099	4.28E-05	0.19393	0.026099
290		304929.6	3813249	1.29E-05	7.36E-06	0.14902	0.013741	0.020757	0.020757	2.03E-05	0.14902	0.020757

REC	NETID	X	Y	30yr_veh_only	30yr_veh_only	30yr_veh_only	Total	Max	Max
				Cancer Risk Sum	Max Chronic Hazard Index	Max Acute Hazard Index	Cancer Risk Sum	Chronic Hazard	Acute Hazard
1	UCART1	295898.7	3804214	4.70E-11	3.45E-06	3.57E-07	4.70E-11	3.45E-06	3.57E-07
2	UCART1	297898.7	3804214	5.33E-11	3.91E-06	4.53E-07	5.33E-11	3.91E-06	4.53E-07
3	UCART1	299898.7	3804214	4.56E-11	3.34E-06	5.35E-07	4.56E-11	3.34E-06	5.35E-07
4	UCART1	301898.7	3804214	3.96E-11	2.90E-06	5.73E-07	3.96E-11	2.90E-06	5.73E-07
5	UCART1	303898.7	3804214	3.40E-11	2.49E-06	5.94E-07	3.40E-11	2.49E-06	5.94E-07
6	UCART1	305898.7	3804214	3.66E-11	2.68E-06	7.29E-07	3.66E-11	2.68E-06	7.29E-07
7	UCART1	307898.7	3804214	3.00E-11	2.20E-06	6.21E-07	3.00E-11	2.20E-06	6.21E-07
8	UCART1	309898.7	3804214	2.85E-11	2.09E-06	5.20E-07	2.85E-11	2.09E-06	5.20E-07
9	UCART1	311898.7	3804214	2.40E-11	1.76E-06	4.20E-07	2.40E-11	1.76E-06	4.20E-07
10	UCART1	313898.7	3804214	2.18E-11	1.60E-06	3.56E-07	2.18E-11	1.60E-06	3.56E-07
11	UCART1	295898.7	3806214	5.66E-11	4.15E-06	4.25E-07	5.66E-11	4.15E-06	4.25E-07
12	UCART1	297898.7	3806214	7.08E-11	5.19E-06	5.28E-07	7.08E-11	5.19E-06	5.28E-07
13	UCART1	299898.7	3806214	7.11E-11	5.21E-06	6.26E-07	7.11E-11	5.21E-06	6.26E-07
14	UCART1	301898.7	3806214	6.46E-11	4.73E-06	8.10E-07	6.46E-11	4.73E-06	8.10E-07
15	UCART1	303898.7	3806214	5.33E-11	3.90E-06	8.80E-07	5.33E-11	3.90E-06	8.80E-07
16	UCART1	305898.7	3806214	5.48E-11	4.01E-06	1.02E-06	5.48E-11	4.01E-06	1.02E-06
17	UCART1	307898.7	3806214	4.46E-11	3.27E-06	8.54E-07	4.46E-11	3.27E-06	8.54E-07
18	UCART1	309898.7	3806214	3.85E-11	2.82E-06	6.92E-07	3.85E-11	2.82E-06	6.92E-07
19	UCART1	311898.7	3806214	3.35E-11	2.45E-06	5.28E-07	3.35E-11	2.45E-06	5.28E-07
20	UCART1	313898.7	3806214	2.97E-11	2.18E-06	4.39E-07	2.97E-11	2.18E-06	4.39E-07
21	UCART1	295898.7	3808214	6.20E-11	4.55E-06	3.70E-07	6.20E-11	4.55E-06	3.70E-07
22	UCART1	297898.7	3808214	1.08E-10	7.88E-06	1.33E-06	1.08E-10	7.88E-06	1.33E-06
23	UCART1	299898.7	3808214	1.24E-10	9.09E-06	8.77E-07	1.24E-10	9.09E-06	8.77E-07
24	UCART1	301898.7	3808214	1.27E-10	9.28E-06	1.24E-06	1.27E-10	9.28E-06	1.24E-06
25	UCART1	303898.7	3808214	1.01E-10	7.41E-06	1.44E-06	1.01E-10	7.41E-06	1.44E-06
26	UCART1	305898.7	3808214	9.09E-11	6.67E-06	1.51E-06	9.09E-11	6.67E-06	1.51E-06
27	UCART1	307898.7	3808214	7.47E-11	5.48E-06	1.27E-06	7.47E-11	5.48E-06	1.27E-06
28	UCART1	309898.7	3808214	5.83E-11	4.27E-06	8.81E-07	5.83E-11	4.27E-06	8.81E-07
29	UCART1	311898.7	3808214	6.31E-11	4.63E-06	8.32E-07	6.31E-11	4.63E-06	8.32E-07
30	UCART1	313898.7	3808214	4.53E-11	3.32E-06	5.16E-07	4.53E-11	3.32E-06	5.16E-07
31	UCART1	295898.7	3810214	7.23E-11	5.30E-06	1.09E-06	7.23E-11	5.30E-06	1.09E-06
32	UCART1	297898.7	3810214	8.71E-12	6.38E-07	1.63E-07	8.71E-12	6.38E-07	1.63E-07
33	UCART1	299898.7	3810214	2.04E-11	1.50E-06	2.54E-07	2.04E-11	1.50E-06	2.54E-07
34	UCART1	301898.7	3810214	2.85E-11	2.09E-06	3.62E-07	2.85E-11	2.09E-06	3.62E-07
35	UCART1	303898.7	3810214	1.25E-11	9.14E-07	6.14E-07	1.25E-11	9.14E-07	6.14E-07
36	UCART1	305898.7	3810214	2.51E-10	1.84E-05	4.33E-06	2.51E-10	1.84E-05	4.33E-06
37	UCART1	307898.7	3810214	1.37E-10	1.01E-05	1.90E-06	1.37E-10	1.01E-05	1.90E-06
38	UCART1	309898.7	3810214	1.43E-10	1.05E-05	1.57E-06	1.43E-10	1.05E-05	1.57E-06
39	UCART1	311898.7	3810214	1.07E-10	7.88E-06	1.72E-06	1.07E-10	7.88E-06	1.72E-06
40	UCART1	313898.7	3810214	1.53E-11	1.12E-06	1.60E-07	1.53E-11	1.12E-06	1.60E-07
41	UCART1	295898.7	3812214	4.39E-11	3.22E-06	6.76E-07	4.39E-11	3.22E-06	6.76E-07
42	UCART1	297898.7	3812214	5.64E-11	4.14E-06	7.08E-07	5.64E-11	4.14E-06	7.08E-07
43	UCART1	299898.7	3812214	1.14E-10	8.39E-06	1.07E-06	1.14E-10	8.39E-06	1.07E-06
44	UCART1	301898.7	3812214	3.32E-10	2.43E-05	2.15E-06	3.32E-10	2.43E-05	2.15E-06
45	UCART1	303898.7	3812214	2.05E-09	0.00014994	8.78E-06	2.05E-09	0.00015	8.78E-06
46	UCART1	305898.7	3812214	9.01E-10	6.60E-05	8.93E-06	9.01E-10	6.60E-05	8.93E-06
47	UCART1	307898.7	3812214	3.60E-10	2.64E-05	2.32E-06	3.60E-10	2.64E-05	2.32E-06
48	UCART1	309898.7	3812214	4.06E-11	2.98E-06	2.75E-07	4.06E-11	2.98E-06	2.75E-07
49	UCART1	311898.7	3812214	1.26E-11	9.26E-07	2.28E-07	1.26E-11	9.26E-07	2.28E-07
50	UCART1	313898.7	3812214	7.42E-12	5.44E-07	1.61E-07	7.42E-12	5.44E-07	1.61E-07
51	UCART1	295898.7	3814214	2.32E-11	1.70E-06	4.11E-07	2.32E-11	1.70E-06	4.11E-07
52	UCART1	297898.7	3814214	3.23E-11	2.37E-06	5.90E-07	3.23E-11	2.37E-06	5.90E-07
53	UCART1	299898.7	3814214	5.00E-11	3.66E-06	9.65E-07	5.00E-11	3.66E-06	9.65E-07

REC	NETID	X	Y	30yr_veh_only Cancer Risk Sum	30yr_veh_only Max Chronic Hazard Index	30yr_veh_only Max Acute Hazard Index	Total Cancer Risk Sum	Max Chronic Hazard	Max Acute Hazard
54	UCART1	301898.7	3814214	1.22E-10	8.92E-06	2.18E-06	1.22E-10	8.92E-06	2.18E-06
55	UCART1	303898.7	3814214	7.38E-11	5.41E-06	1.82E-06	7.38E-11	5.41E-06	1.82E-06
56	UCART1	305898.7	3814214	4.03E-11	2.95E-06	6.05E-07	4.03E-11	2.95E-06	6.05E-07
57	UCART1	307898.7	3814214	2.69E-11	1.97E-06	3.46E-07	2.69E-11	1.97E-06	3.46E-07
58	UCART1	309898.7	3814214	2.04E-11	1.50E-06	2.42E-07	2.04E-11	1.50E-06	2.42E-07
59	UCART1	311898.7	3814214	1.40E-11	1.03E-06	1.93E-07	1.40E-11	1.03E-06	1.93E-07
60	UCART1	313898.7	3814214	7.82E-12	5.74E-07	1.20E-07	7.82E-12	5.74E-07	1.20E-07
61	UCART1	295898.7	3816214	1.84E-11	1.35E-06	3.66E-07	1.84E-11	1.35E-06	3.66E-07
62	UCART1	297898.7	3816214	2.45E-11	1.80E-06	4.93E-07	2.45E-11	1.80E-06	4.93E-07
63	UCART1	299898.7	3816214	4.47E-11	3.28E-06	9.34E-07	4.47E-11	3.28E-06	9.34E-07
64	UCART1	301898.7	3816214	3.85E-12	2.83E-07	2.60E-07	3.85E-12	2.83E-07	2.60E-07
65	UCART1	303898.7	3816214	4.43E-12	3.24E-07	2.45E-07	4.43E-12	3.24E-07	2.45E-07
66	UCART1	305898.7	3816214	5.27E-12	3.86E-07	2.21E-07	5.27E-12	3.86E-07	2.21E-07
67	UCART1	307898.7	3816214	4.91E-12	3.60E-07	1.68E-07	4.91E-12	3.60E-07	1.68E-07
68	UCART1	309898.7	3816214	6.37E-12	4.67E-07	1.32E-07	6.37E-12	4.67E-07	1.32E-07
69	UCART1	311898.7	3816214	6.29E-12	4.61E-07	9.95E-08	6.29E-12	4.61E-07	9.95E-08
70	UCART1	313898.7	3816214	4.04E-12	2.96E-07	1.10E-07	4.04E-12	2.96E-07	1.10E-07
71	UCART1	295898.7	3818214	1.05E-12	7.69E-08	7.33E-08	1.05E-12	7.69E-08	7.33E-08
72	UCART1	297898.7	3818214	1.69E-12	1.24E-07	7.89E-08	1.69E-12	1.24E-07	7.89E-08
73	UCART1	299898.7	3818214	1.66E-12	1.22E-07	1.63E-07	1.66E-12	1.22E-07	1.63E-07
74	UCART1	301898.7	3818214	1.76E-12	1.29E-07	8.66E-08	1.76E-12	1.29E-07	8.66E-08
75	UCART1	303898.7	3818214	2.29E-12	1.68E-07	2.21E-07	2.29E-12	1.68E-07	2.21E-07
76	UCART1	305898.7	3818214	2.73E-12	2.00E-07	1.15E-07	2.73E-12	2.00E-07	1.15E-07
77	UCART1	307898.7	3818214	2.32E-12	1.70E-07	1.39E-07	2.32E-12	1.70E-07	1.39E-07
78	UCART1	309898.7	3818214	2.49E-12	1.83E-07	1.12E-07	2.49E-12	1.83E-07	1.12E-07
79	UCART1	311898.7	3818214	2.88E-12	2.11E-07	5.09E-08	2.88E-12	2.11E-07	5.09E-08
80	UCART1	313898.7	3818214	2.86E-12	2.10E-07	6.19E-08	2.86E-12	2.10E-07	6.19E-08
81	UCART1	295898.7	3820214	8.06E-13	5.91E-08	6.54E-08	8.06E-13	5.91E-08	6.54E-08
82	UCART1	297898.7	3820214	1.05E-12	7.69E-08	1.24E-07	1.05E-12	7.69E-08	1.24E-07
83	UCART1	299898.7	3820214	1.26E-12	9.25E-08	1.36E-07	1.26E-12	9.25E-08	1.36E-07
84	UCART1	301898.7	3820214	1.19E-12	8.75E-08	7.19E-08	1.19E-12	8.75E-08	7.19E-08
85	UCART1	303898.7	3820214	1.58E-12	1.16E-07	9.89E-08	1.58E-12	1.16E-07	9.89E-08
86	UCART1	305898.7	3820214	1.78E-12	1.30E-07	8.12E-08	1.78E-12	1.30E-07	8.12E-08
87	UCART1	307898.7	3820214	1.74E-12	1.27E-07	1.03E-07	1.74E-12	1.27E-07	1.03E-07
88	UCART1	309898.7	3820214	1.68E-12	1.23E-07	9.32E-08	1.68E-12	1.23E-07	9.32E-08
89	UCART1	311898.7	3820214	1.85E-12	1.36E-07	8.07E-08	1.85E-12	1.36E-07	8.07E-08
90	UCART1	313898.7	3820214	1.93E-12	1.42E-07	3.12E-08	1.93E-12	1.42E-07	3.12E-08
91	UCART1	295898.7	3822214	6.79E-13	4.98E-08	1.02E-07	6.79E-13	4.98E-08	1.02E-07
92	UCART1	297898.7	3822214	9.61E-13	7.04E-08	1.75E-07	9.61E-13	7.04E-08	1.75E-07
93	UCART1	299898.7	3822214	8.45E-13	6.19E-08	4.46E-08	8.45E-13	6.19E-08	4.46E-08
94	UCART1	301898.7	3822214	1.02E-12	7.47E-08	7.72E-08	1.02E-12	7.47E-08	7.72E-08
95	UCART1	303898.7	3822214	1.32E-12	9.68E-08	7.83E-08	1.32E-12	9.68E-08	7.83E-08
96	UCART1	305898.7	3822214	1.36E-12	9.96E-08	8.62E-08	1.36E-12	9.96E-08	8.62E-08
97	UCART1	307898.7	3822214	1.37E-12	1.00E-07	6.39E-08	1.37E-12	1.00E-07	6.39E-08
98	UCART1	309898.7	3822214	1.25E-12	9.18E-08	6.51E-08	1.25E-12	9.18E-08	6.51E-08
99	UCART1	311898.7	3822214	1.31E-12	9.61E-08	8.77E-08	1.31E-12	9.61E-08	8.77E-08
100	UCART1	313898.7	3822214	1.39E-12	1.02E-07	6.34E-08	1.39E-12	1.02E-07	6.34E-08
101	UCART2	303323.7	3811639	1.08E-09	7.90E-05	7.97E-06	1.08E-09	7.90E-05	7.97E-06
102	UCART2	303673.7	3811639	1.08E-09	7.95E-05	8.69E-06	1.08E-09	7.95E-05	8.69E-06
103	UCART2	304023.7	3811639	7.93E-10	5.81E-05	6.64E-06	7.93E-10	5.81E-05	6.64E-06
104	UCART2	304373.7	3811639	3.41E-10	2.50E-05	3.13E-06	3.41E-10	2.50E-05	3.13E-06
105	UCART2	304723.7	3811639	6.57E-10	4.82E-05	1.06E-05	6.57E-10	4.82E-05	1.06E-05
106	UCART2	305073.7	3811639	7.79E-10	5.71E-05	9.09E-06	7.79E-10	5.71E-05	9.09E-06

REC	NETID	X	Y	30yr_veh_only	30yr_veh_only	30yr_veh_only	Total	Max	Max
				Cancer Risk Sum	Max Chronic Hazard Index	Max Acute Hazard Index	Cancer Risk Sum	Chronic Hazard	Acute Hazard
107	UCART2	305423.7	3811639	5.75E-10	4.22E-05	7.70E-06	5.75E-10	4.22E-05	7.70E-06
108	UCART2	305773.7	3811639	5.24E-10	3.84E-05	6.63E-06	5.24E-10	3.84E-05	6.63E-06
109	UCART2	306123.7	3811639	4.50E-10	3.30E-05	5.44E-06	4.50E-10	3.30E-05	5.44E-06
110	UCART2	306473.7	3811639	4.09E-10	3.00E-05	4.80E-06	4.09E-10	3.00E-05	4.80E-06
111	UCART2	303323.7	3811989	1.32E-09	9.67E-05	6.77E-06	1.32E-09	9.67E-05	6.77E-06
112	UCART2	303673.7	3811989	1.62E-09	0.00011897	7.92E-06	1.62E-09	0.000119	7.92E-06
113	UCART2	304023.7	3811989	1.72E-09	0.00012623	9.30E-06	1.72E-09	0.000126	9.30E-06
114	UCART2	304373.7	3811989	1.57E-09	0.00011516	1.13E-05	1.57E-09	0.000115	1.13E-05
115	UCART2	304723.7	3811989	1.03E-09	7.55E-05	1.05E-05	1.03E-09	7.55E-05	1.05E-05
116	UCART2	305073.7	3811989	1.01E-09	7.40E-05	1.10E-05	1.01E-09	7.40E-05	1.10E-05
117	UCART2	305423.7	3811989	8.41E-10	6.16E-05	1.03E-05	8.41E-10	6.16E-05	1.03E-05
118	UCART2	305773.7	3811989	7.24E-10	5.31E-05	8.38E-06	7.24E-10	5.31E-05	8.38E-06
119	UCART2	306123.7	3811989	6.39E-10	4.68E-05	6.80E-06	6.39E-10	4.68E-05	6.80E-06
120	UCART2	306473.7	3811989	6.05E-10	4.43E-05	5.43E-06	6.05E-10	4.43E-05	5.43E-06
121	UCART2	303323.7	3812339	1.21E-09	8.89E-05	4.81E-06	1.21E-09	8.89E-05	4.81E-06
122	UCART2	303673.7	3812339	1.79E-09	0.00013142	7.71E-06	1.79E-09	0.000131	7.71E-06
123	UCART2	304023.7	3812339	2.39E-09	0.00017538	9.89E-06	2.39E-09	0.000175	9.89E-06
124	UCART2	304373.7	3812339	2.49E-09	0.00018282	1.28E-05	2.49E-09	0.000183	1.28E-05
125	UCART2	304723.7	3812339	1.95E-09	0.00014313	1.57E-05	1.95E-09	0.000143	1.57E-05
126	UCART2	305073.7	3812339	1.75E-09	0.00012799	1.78E-05	1.75E-09	0.000128	1.78E-05
127	UCART2	305423.7	3812339	1.40E-09	0.00010279	1.43E-05	1.40E-09	0.000103	1.43E-05
128	UCART2	305773.7	3812339	1.15E-09	8.44E-05	1.06E-05	1.15E-09	8.44E-05	1.06E-05
129	UCART2	306123.7	3812339	9.70E-10	7.11E-05	9.11E-06	9.70E-10	7.11E-05	9.11E-06
130	UCART2	306473.7	3812339	3.38E-10	2.48E-05	2.15E-06	3.38E-10	2.48E-05	2.15E-06
131	UCART2	303323.7	3812689	1.00E-09	7.36E-05	5.23E-06	1.00E-09	7.36E-05	5.23E-06
132	UCART2	303673.7	3812689	1.68E-09	0.00012292	6.73E-06	1.68E-09	0.000123	6.73E-06
133	UCART2	304023.7	3812689	2.85E-09	0.00020897	9.76E-06	2.85E-09	0.000209	9.76E-06
134	UCART2	304373.7	3812689	5.27E-09	0.00038663	1.77E-05	5.27E-09	0.000387	1.77E-05
135	UCART2	304723.7	3812689	5.56E-09	0.00040765	2.84E-05	5.56E-09	0.000408	2.84E-05
136	UCART2	305073.7	3812689	3.99E-09	0.00029267	3.30E-05	3.99E-09	0.000293	3.30E-05
137	UCART2	305423.7	3812689	6.51E-10	4.77E-05	5.56E-06	6.51E-10	4.77E-05	5.56E-06
138	UCART2	305773.7	3812689	2.03E-09	0.00014847	1.19E-05	2.03E-09	0.000148	1.19E-05
139	UCART2	306123.7	3812689	1.75E-09	0.00012848	7.97E-06	1.75E-09	0.000128	7.97E-06
140	UCART2	306473.7	3812689	1.36E-09	9.95E-05	6.96E-06	1.36E-09	9.95E-05	6.96E-06
141	UCART2	303323.7	3813039	6.32E-10	4.63E-05	5.22E-06	6.32E-10	4.63E-05	5.22E-06
142	UCART2	303673.7	3813039	1.05E-09	7.72E-05	7.37E-06	1.05E-09	7.72E-05	7.37E-06
143	UCART2	304023.7	3813039	1.90E-09	0.00013952	1.02E-05	1.90E-09	0.00014	1.02E-05
144	UCART2	304373.7	3813039	5.04E-09	0.00036977	1.72E-05	5.04E-09	0.00037	1.72E-05
145	UCART2	304723.7	3813039	2.79E-08	0.0020441	3.63E-05	2.79E-08	0.002044	3.63E-05
146	UCART2	305073.7	3813039	2.97E-08	0.0021808	7.38E-05	2.97E-08	0.002181	7.38E-05
147	UCART2	305423.7	3813039	3.60E-09	0.00026413	5.49E-06	3.60E-09	0.000264	5.49E-06
148	UCART2	305773.7	3813039	1.02E-09	7.50E-05	2.04E-06	1.02E-09	7.50E-05	2.04E-06
149	UCART2	306123.7	3813039	2.02E-09	0.00014824	1.26E-05	2.02E-09	0.000148	1.26E-05
150	UCART2	306473.7	3813039	4.95E-10	3.63E-05	1.82E-06	4.95E-10	3.63E-05	1.82E-06
151	UCART2	303323.7	3813389	4.37E-10	3.21E-05	5.43E-06	4.37E-10	3.21E-05	5.43E-06
152	UCART2	303673.7	3813389	6.63E-10	4.86E-05	7.94E-06	6.63E-10	4.86E-05	7.94E-06
153	UCART2	304023.7	3813389	1.04E-09	7.62E-05	1.18E-05	1.04E-09	7.62E-05	1.18E-05
154	UCART2	304373.7	3813389	1.79E-09	0.00013091	1.74E-05	1.79E-09	0.000131	1.74E-05
155	UCART2	304723.7	3813389	6.52E-09	0.00047809	5.28E-05	6.52E-09	0.000478	5.28E-05
156	UCART2	305073.7	3813389	2.21E-09	0.00016216	1.04E-05	2.21E-09	0.000162	1.04E-05
157	UCART2	305423.7	3813389	7.72E-10	5.66E-05	2.34E-06	7.72E-10	5.66E-05	2.34E-06
158	UCART2	305773.7	3813389	4.33E-10	3.18E-05	1.69E-06	4.33E-10	3.18E-05	1.69E-06
159	UCART2	306123.7	3813389	3.77E-10	2.77E-05	1.73E-06	3.77E-10	2.77E-05	1.73E-06

REC	NETID	X	Y	30yr_veh_only	30yr_veh_only	30yr_veh_only	Total	Max	Max
				Cancer Risk Sum	Max Chronic Hazard Index	Max Acute Hazard Index	Cancer Risk Sum	Chronic Hazard	Acute Hazard
160	UCART2	306473.7	3813389	3.98E-10	2.92E-05	2.27E-06	3.98E-10	2.92E-05	2.27E-06
161	UCART2	303323.7	3813739	3.61E-10	2.65E-05	5.61E-06	3.61E-10	2.65E-05	5.61E-06
162	UCART2	303673.7	3813739	5.39E-11	3.95E-06	1.59E-06	5.39E-11	3.95E-06	1.59E-06
163	UCART2	304023.7	3813739	2.14E-10	1.57E-05	4.52E-06	2.14E-10	1.57E-05	4.52E-06
164	UCART2	304373.7	3813739	8.74E-11	6.41E-06	2.68E-06	8.74E-11	6.41E-06	2.68E-06
165	UCART2	304723.7	3813739	2.61E-10	1.92E-05	4.09E-06	2.61E-10	1.92E-05	4.09E-06
166	UCART2	305073.7	3813739	1.54E-10	1.13E-05	2.24E-06	1.54E-10	1.13E-05	2.24E-06
167	UCART2	305423.7	3813739	1.36E-10	9.96E-06	1.72E-06	1.36E-10	9.96E-06	1.72E-06
168	UCART2	305773.7	3813739	1.37E-10	1.00E-05	1.11E-06	1.37E-10	1.00E-05	1.11E-06
169	UCART2	306123.7	3813739	1.19E-10	8.75E-06	8.52E-07	1.19E-10	8.75E-06	8.52E-07
170	UCART2	306473.7	3813739	9.96E-11	7.30E-06	7.98E-07	9.96E-11	7.30E-06	7.98E-07
171	UCART2	303323.7	3814089	2.93E-11	2.15E-06	1.02E-06	2.93E-11	2.15E-06	1.02E-06
172	UCART2	303673.7	3814089	2.42E-11	1.77E-06	8.04E-07	2.42E-11	1.77E-06	8.04E-07
173	UCART2	304023.7	3814089	5.70E-11	4.18E-06	1.73E-06	5.70E-11	4.18E-06	1.73E-06
174	UCART2	304373.7	3814089	5.14E-11	3.77E-06	1.63E-06	5.14E-11	3.77E-06	1.63E-06
175	UCART2	304723.7	3814089	7.87E-11	5.77E-06	1.92E-06	7.87E-11	5.77E-06	1.92E-06
176	UCART2	305073.7	3814089	6.32E-11	4.63E-06	1.32E-06	6.32E-11	4.63E-06	1.32E-06
177	UCART2	305423.7	3814089	6.55E-11	4.80E-06	1.21E-06	6.55E-11	4.80E-06	1.21E-06
178	UCART2	305773.7	3814089	5.43E-11	3.98E-06	8.29E-07	5.43E-11	3.98E-06	8.29E-07
179	UCART2	306123.7	3814089	4.61E-11	3.38E-06	4.46E-07	4.61E-11	3.38E-06	4.46E-07
180	UCART2	306473.7	3814089	4.12E-11	3.02E-06	4.62E-07	4.12E-11	3.02E-06	4.62E-07
181	UCART2	303323.7	3814439	1.39E-11	1.02E-06	6.04E-07	1.39E-11	1.02E-06	6.04E-07
182	UCART2	303673.7	3814439	2.96E-11	2.17E-06	1.21E-06	2.96E-11	2.17E-06	1.21E-06
183	UCART2	304023.7	3814439	2.35E-11	1.72E-06	1.32E-06	2.35E-11	1.72E-06	1.32E-06
184	UCART2	304373.7	3814439	2.90E-11	2.13E-06	8.12E-07	2.90E-11	2.13E-06	8.12E-07
185	UCART2	304723.7	3814439	2.95E-11	2.17E-06	9.73E-07	2.95E-11	2.17E-06	9.73E-07
186	UCART2	305073.7	3814439	2.93E-11	2.15E-06	8.06E-07	2.93E-11	2.15E-06	8.06E-07
187	UCART2	305423.7	3814439	3.23E-11	2.37E-06	7.17E-07	3.23E-11	2.37E-06	7.17E-07
188	UCART2	305773.7	3814439	2.54E-11	1.86E-06	6.57E-07	2.54E-11	1.86E-06	6.57E-07
189	UCART2	306123.7	3814439	2.50E-11	1.84E-06	3.82E-07	2.50E-11	1.84E-06	3.82E-07
190	UCART2	306473.7	3814439	2.16E-11	1.59E-06	2.86E-07	2.16E-11	1.59E-06	2.86E-07
191	UCART2	303323.7	3814789	1.12E-11	8.20E-07	5.83E-07	1.12E-11	8.20E-07	5.83E-07
192	UCART2	303673.7	3814789	1.81E-11	1.33E-06	1.00E-06	1.81E-11	1.33E-06	1.00E-06
193	UCART2	304023.7	3814789	2.00E-11	1.47E-06	6.18E-07	2.00E-11	1.47E-06	6.18E-07
194	UCART2	304373.7	3814789	1.68E-11	1.23E-06	5.57E-07	1.68E-11	1.23E-06	5.57E-07
195	UCART2	304723.7	3814789	1.65E-11	1.21E-06	7.32E-07	1.65E-11	1.21E-06	7.32E-07
196	UCART2	305073.7	3814789	1.45E-11	1.06E-06	7.00E-07	1.45E-11	1.06E-06	7.00E-07
197	UCART2	305423.7	3814789	1.64E-11	1.20E-06	3.61E-07	1.64E-11	1.20E-06	3.61E-07
198	UCART2	305773.7	3814789	1.94E-11	1.42E-06	4.43E-07	1.94E-11	1.42E-06	4.43E-07
199	UCART2	306123.7	3814789	1.73E-11	1.27E-06	4.63E-07	1.73E-11	1.27E-06	4.63E-07
200	UCART2	306473.7	3814789	1.43E-11	1.05E-06	2.68E-07	1.43E-11	1.05E-06	2.68E-07
201		305181.2	3813150	1.40E-08	0.001027	1.78E-05	1.40E-08	0.001027	1.78E-05
202		305175.1	3813184	1.11E-08	0.00081307	1.11E-05	1.11E-08	0.000813	1.11E-05
203		304930.6	3812926	1.46E-08	0.0010667	7.37E-05	1.46E-08	0.001067	7.37E-05
204		304812.5	3812740	6.07E-09	0.00044511	3.49E-05	6.07E-09	0.000445	3.49E-05
205		304595.7	3812860	1.13E-08	0.00083074	2.81E-05	1.13E-08	0.000831	2.81E-05
206		304652.6	3813041	1.87E-08	0.0013698	2.95E-05	1.87E-08	0.00137	2.95E-05
207		304658.1	3813202	1.03E-08	0.00075609	3.21E-05	1.03E-08	0.000756	3.21E-05
208		304641.4	3812566	3.86E-09	0.00028278	2.10E-05	3.86E-09	0.000283	2.10E-05
209		304590.2	3812613	4.67E-09	0.00034214	2.13E-05	4.67E-09	0.000342	2.13E-05
210		305548.4	3813385	4.94E-10	3.62E-05	1.61E-06	4.94E-10	3.62E-05	1.61E-06
211		304971.4	3813575	3.19E-10	2.34E-05	3.74E-06	3.19E-10	2.34E-05	3.74E-06
212		304670.5	3813774	2.06E-10	1.51E-05	3.43E-06	2.06E-10	1.51E-05	3.43E-06

30 Year Risk Assessment Based on VCAPCD Guidelines

REC	NETID	X	Y	30yr_veh_only	30yr_veh_only	30yr_veh_only	Total	Max	Max
				Cancer Risk Sum	Max Chronic Hazard Index	Max Acute Hazard Index	Cancer Risk Sum	Chronic Hazard	Acute Hazard
213		304345	3813766	7.66E-11	5.62E-06	2.65E-06	7.66E-11	5.62E-06	2.65E-06
214		304954.2	3813207	1.40E-07	0.010264	0.00013774	1.40E-07	0.010264	0.000138
215		304956.3	3813189	1.32E-07	0.0096608	0.00014342	1.32E-07	0.009661	0.000143
216		304958.3	3813171	1.82E-07	0.013326	0.00015163	1.82E-07	0.013326	0.000152
217		304960.3	3813154	1.95E-07	0.014277	0.00013413	1.95E-07	0.014277	0.000134
218		304952.7	3813138	1.88E-07	0.01378	0.00015374	1.88E-07	0.01378	0.000154
219		304945.1	3813123	2.17E-07	0.0159	0.00016249	2.17E-07	0.0159	0.000162
220		304937.6	3813108	2.09E-07	0.015298	0.00015401	2.09E-07	0.015298	0.000154
221		304930	3813093	2.02E-07	0.014791	0.00015558	2.02E-07	0.014791	0.000156
222		304922.5	3813078	1.87E-07	0.013706	0.00015761	1.87E-07	0.013706	0.000158
223		304914.9	3813063	1.39E-07	0.010159	0.00015693	1.39E-07	0.010159	0.000157
224		304899.4	3813053	1.04E-07	0.0076247	0.00016888	1.04E-07	0.007625	0.000169
225		304884.3	3813044	8.54E-08	0.0062624	0.00013166	8.54E-08	0.006262	0.000132
226		304869.2	3813035	6.99E-08	0.0051205	0.00010374	6.99E-08	0.005121	0.000104
227		304854.1	3813026	5.80E-08	0.0042528	8.81E-05	5.80E-08	0.004253	8.81E-05
228		304846	3813012	4.69E-08	0.0034362	8.00E-05	4.69E-08	0.003436	8.00E-05
229		304837.5	3812997	3.87E-08	0.0028396	7.31E-05	3.87E-08	0.00284	7.31E-05
230		304829.1	3812982	3.27E-08	0.0024001	6.77E-05	3.27E-08	0.0024	6.77E-05
231		304820.7	3812968	2.82E-08	0.0020645	6.31E-05	2.82E-08	0.002065	6.31E-05
232		304812.2	3812953	2.46E-08	0.0018007	5.89E-05	2.46E-08	0.001801	5.89E-05
233		304803.8	3812938	2.17E-08	0.0015886	5.51E-05	2.17E-08	0.001589	5.51E-05
234		304802.4	3812938	2.16E-08	0.0015861	5.47E-05	2.16E-08	0.001586	5.47E-05
235		304787.5	3812948	2.36E-08	0.0017271	5.16E-05	2.36E-08	0.001727	5.16E-05
236		304772.6	3812957	2.50E-08	0.0018315	5.01E-05	2.50E-08	0.001832	5.01E-05
237		304757.6	3812966	2.57E-08	0.0018856	4.74E-05	2.57E-08	0.001886	4.74E-05
238		304742.7	3812976	2.58E-08	0.0018877	4.45E-05	2.58E-08	0.001888	4.45E-05
239		304727.8	3812985	2.52E-08	0.0018478	4.13E-05	2.52E-08	0.001848	4.13E-05
240		304712.8	3812995	2.43E-08	0.0017803	3.90E-05	2.43E-08	0.00178	3.90E-05
241		304697.9	3813004	2.31E-08	0.0016948	3.62E-05	2.31E-08	0.001695	3.62E-05
242		304698	3813022	2.38E-08	0.0017423	3.46E-05	2.38E-08	0.001742	3.46E-05
243		304698.6	3813040	2.42E-08	0.0017719	3.35E-05	2.42E-08	0.001772	3.35E-05
244		304699.1	3813057	2.43E-08	0.0017818	3.30E-05	2.43E-08	0.001782	3.30E-05
245		304699.7	3813074	2.42E-08	0.0017736	3.30E-05	2.42E-08	0.001774	3.30E-05
246		304700.2	3813092	2.38E-08	0.0017478	3.30E-05	2.38E-08	0.001748	3.30E-05
247		304701	3813112	2.31E-08	0.0016967	3.31E-05	2.31E-08	0.001697	3.31E-05
248		304701.8	3813132	2.20E-08	0.0016158	3.40E-05	2.20E-08	0.001616	3.40E-05
249		304702.7	3813152	2.05E-08	0.0015016	3.50E-05	2.05E-08	0.001502	3.50E-05
250		304703.5	3813171	1.85E-08	0.0013574	3.58E-05	1.85E-08	0.001357	3.58E-05
251		304704.3	3813191	1.63E-08	0.0011938	3.64E-05	1.63E-08	0.001194	3.64E-05
252		304705.1	3813211	1.40E-08	0.0010244	3.78E-05	1.40E-08	0.001024	3.78E-05
253		304705.9	3813231	1.18E-08	0.00086653	3.97E-05	1.18E-08	0.000867	3.97E-05
254		304706.7	3813251	1.01E-08	0.00074032	4.07E-05	1.01E-08	0.00074	4.07E-05
255		304707.5	3813271	8.84E-09	0.00064783	4.23E-05	8.84E-09	0.000648	4.23E-05
256		304708.3	3813291	7.96E-09	0.00058345	4.33E-05	7.96E-09	0.000583	4.33E-05
257		304709.1	3813311	7.32E-09	0.0005363	4.25E-05	7.32E-09	0.000536	4.25E-05
258		304709.9	3813331	6.86E-09	0.00050277	4.41E-05	6.86E-09	0.000503	4.41E-05
259		304710.8	3813351	6.54E-09	0.00047939	4.57E-05	6.54E-09	0.000479	4.57E-05
260		304711.6	3813371	6.40E-09	0.00046936	4.76E-05	6.40E-09	0.000469	4.76E-05
261		304712.4	3813390	6.15E-09	0.00045109	5.06E-05	6.15E-09	0.000451	5.06E-05
262		304713.2	3813410	5.59E-09	0.00040995	5.03E-05	5.59E-09	0.00041	5.03E-05
263		304714	3813430	4.83E-09	0.00035396	5.03E-05	4.83E-09	0.000354	5.03E-05
264		304715.6	3813431	4.91E-09	0.00036015	5.05E-05	4.91E-09	0.00036	5.05E-05
265		304729.9	3813419	5.99E-09	0.00043941	5.20E-05	5.99E-09	0.000439	5.20E-05

REC	NETID	X	Y	30yr_veh_only	30yr_veh_only	30yr_veh_only	Total	Max	Max
				Cancer Risk Sum	Max Chronic Hazard Index	Max Acute Hazard Index	Cancer Risk Sum	Chronic Hazard	Acute Hazard
266		304744.3	3813407	6.72E-09	0.00049254	5.51E-05	6.72E-09	0.000493	5.51E-05
267		304758.6	3813395	7.49E-09	0.00054885	5.77E-05	7.49E-09	0.000549	5.77E-05
268		304772.9	3813383	8.66E-09	0.00063462	6.45E-05	8.66E-09	0.000635	6.45E-05
269		304787.2	3813371	1.00E-08	0.0007355	7.12E-05	1.00E-08	0.000736	7.12E-05
270		304801.5	3813359	9.49E-09	0.00069571	7.45E-05	9.49E-09	0.000696	7.45E-05
271		304815.8	3813347	7.85E-09	0.00057572	5.46E-05	7.85E-09	0.000576	5.46E-05
272		304830.1	3813335	6.53E-09	0.00047895	3.14E-05	6.53E-09	0.000479	3.14E-05
273		304844.4	3813322	6.88E-09	0.00050463	2.53E-05	6.88E-09	0.000505	2.53E-05
274		304858.7	3813310	9.13E-09	0.00066923	3.08E-05	9.13E-09	0.000669	3.08E-05
275		304873	3813298	1.55E-08	0.0011358	5.59E-05	1.55E-08	0.001136	5.59E-05
276		304887.3	3813286	2.97E-08	0.0021756	8.69E-05	2.97E-08	0.002176	8.69E-05
277		304901.6	3813274	5.02E-08	0.0036784	0.00010916	5.02E-08	0.003678	0.000109
278		304915.9	3813262	7.88E-08	0.0057769	0.00012259	7.88E-08	0.005777	0.000123
279		304930.2	3813250	1.07E-07	0.0078592	0.00012538	1.07E-07	0.007859	0.000125
280		304938.4	3813236	1.35E-07	0.0098937	0.00012852	1.35E-07	0.009894	0.000129
281		304946.2	3813221	1.41E-07	0.010309	0.00012885	1.41E-07	0.010309	0.000129
282		304715	3813430	4.88E-09	0.0003578	5.08E-05	4.88E-09	0.000358	5.08E-05
283		304701.2	3813092	2.40E-08	0.0017599	3.31E-05	2.40E-08	0.00176	3.31E-05
284		304698.5	3813005	2.32E-08	0.0017018	3.62E-05	2.32E-08	0.001702	3.62E-05
285		304802.9	3812939	2.18E-08	0.001597	5.49E-05	2.18E-08	0.001597	5.49E-05
286		304853.5	3813027	5.86E-08	0.0042976	8.79E-05	5.86E-08	0.004298	8.79E-05
287		304914	3813063	1.45E-07	0.010595	0.00016001	1.45E-07	0.010595	0.00016
288		304959.3	3813154	2.00E-07	0.01464	0.0001386	2.00E-07	0.01464	0.000139
289		304953.2	3813207	1.43E-07	0.010513	0.00014101	1.43E-07	0.010513	0.000141
290		304929.6	3813249	1.13E-07	0.0082842	0.00012856	1.13E-07	0.008284	0.000129

REC	NETID	X	Y	1_4f_W	5_25f_W	1_4f_W Max	5_25f_W Max	1_4f_W Max	5_25f_W Max	Total	Overall	Overall
				Cancer Risk	Cancer Risk	Chronic	Chronic	Acute Hazard	Acute Hazard	Cancer	Max	Max
				Sum	Sum	Hazard Index	Hazard Index	Index	Index	Risk Sum	Chronic	Acute
1	UCART1	295898.7	3804214	1.92E-10	1.41E-10	3.25E-05	7.38E-06	0.00010676	0.00010096	3.33E-10	3.25E-05	0.000107
2	UCART1	297898.7	3804214	2.11E-10	1.55E-10	3.65E-05	8.15E-06	0.00012428	0.00011691	3.66E-10	3.65E-05	0.000124
3	UCART1	299898.7	3804214	1.87E-10	1.35E-10	3.15E-05	7.16E-06	0.00014559	0.00013688	3.22E-10	3.15E-05	0.000146
4	UCART1	301898.7	3804214	1.64E-10	1.17E-10	2.75E-05	6.24E-06	0.00016286	0.00015355	2.80E-10	2.75E-05	0.000163
5	UCART1	303898.7	3804214	1.41E-10	9.91E-11	2.36E-05	5.35E-06	0.00017615	0.00016649	2.40E-10	2.36E-05	0.000176
6	UCART1	305898.7	3804214	1.51E-10	1.08E-10	2.54E-05	5.77E-06	0.00020052	0.00018866	2.59E-10	2.54E-05	0.000201
7	UCART1	307898.7	3804214	1.24E-10	8.79E-11	2.08E-05	4.74E-06	0.00017546	0.00016537	2.12E-10	2.08E-05	0.000175
8	UCART1	309898.7	3804214	1.18E-10	8.40E-11	1.97E-05	4.49E-06	0.00015367	0.00014521	2.02E-10	1.97E-05	0.000154
9	UCART1	311898.7	3804214	1.00E-10	7.14E-11	1.67E-05	3.82E-06	0.00012455	0.00011773	1.72E-10	1.67E-05	0.000125
10	UCART1	313898.7	3804214	9.06E-11	6.47E-11	1.51E-05	3.45E-06	0.00010948	0.0001037	1.55E-10	1.51E-05	0.000109
11	UCART1	295898.7	3806214	2.32E-10	1.68E-10	3.91E-05	8.89E-06	0.00012067	0.00011376	4.00E-10	3.91E-05	0.000121
12	UCART1	297898.7	3806214	2.89E-10	2.12E-10	4.89E-05	1.11E-05	0.0001571	0.00014851	5.01E-10	4.89E-05	0.000157
13	UCART1	299898.7	3806214	2.92E-10	2.09E-10	4.92E-05	1.12E-05	0.00018024	0.00017006	5.01E-10	4.92E-05	0.00018
14	UCART1	301898.7	3806214	2.65E-10	1.91E-10	4.47E-05	1.02E-05	0.00023455	0.00022138	4.57E-10	4.47E-05	0.000235
15	UCART1	303898.7	3806214	2.18E-10	1.55E-10	3.68E-05	8.34E-06	0.00024954	0.00023523	3.73E-10	3.68E-05	0.00025
16	UCART1	305898.7	3806214	2.25E-10	1.63E-10	3.79E-05	8.62E-06	0.00026793	0.00025131	3.88E-10	3.79E-05	0.000268
17	UCART1	307898.7	3806214	1.83E-10	1.31E-10	3.09E-05	7.00E-06	0.00023631	0.00022243	3.14E-10	3.09E-05	0.000236
18	UCART1	309898.7	3806214	1.61E-10	1.15E-10	2.68E-05	6.13E-06	0.00020408	0.00019283	2.75E-10	2.68E-05	0.000204
19	UCART1	311898.7	3806214	1.38E-10	9.88E-11	2.32E-05	5.27E-06	0.00016139	0.00015281	2.37E-10	2.32E-05	0.000161
20	UCART1	313898.7	3806214	1.23E-10	8.75E-11	2.06E-05	4.69E-06	0.00013099	0.00012385	2.10E-10	2.06E-05	0.000131
21	UCART1	295898.7	3808214	2.55E-10	1.85E-10	4.30E-05	9.78E-06	0.00011462	0.0001086	4.41E-10	4.30E-05	0.000115
22	UCART1	297898.7	3808214	4.42E-10	3.32E-10	7.46E-05	1.71E-05	0.00032272	0.00030104	7.74E-10	7.46E-05	0.000323
23	UCART1	299898.7	3808214	5.02E-10	3.69E-10	8.55E-05	1.93E-05	0.00025878	0.00024452	8.71E-10	8.55E-05	0.000259
24	UCART1	301898.7	3808214	5.08E-10	3.71E-10	8.71E-05	1.96E-05	0.00034362	0.00032353	8.79E-10	8.71E-05	0.000344
25	UCART1	303898.7	3808214	4.04E-10	2.96E-10	6.95E-05	1.56E-05	0.00039915	0.00037574	7.00E-10	6.95E-05	0.000399
26	UCART1	305898.7	3808214	3.70E-10	2.65E-10	6.28E-05	1.42E-05	0.00042886	0.00040427	6.34E-10	6.28E-05	0.000429
27	UCART1	307898.7	3808214	3.06E-10	2.22E-10	5.17E-05	1.17E-05	0.00035581	0.00033515	5.28E-10	5.17E-05	0.000356
28	UCART1	309898.7	3808214	2.39E-10	1.71E-10	4.04E-05	9.15E-06	0.00026657	0.00025226	4.11E-10	4.04E-05	0.000267
29	UCART1	311898.7	3808214	2.48E-10	1.81E-10	4.32E-05	9.59E-06	0.00021135	0.00019783	4.29E-10	4.32E-05	0.000211
30	UCART1	313898.7	3808214	1.85E-10	1.33E-10	3.13E-05	7.09E-06	0.00014254	0.00013414	3.18E-10	3.13E-05	0.000143
31	UCART1	295898.7	3810214	2.94E-10	2.17E-10	5.00E-05	1.13E-05	0.00024815	0.00023047	5.11E-10	5.00E-05	0.000248
32	UCART1	297898.7	3810214	3.60E-11	2.72E-11	6.05E-06	1.39E-06	3.81E-05	3.55E-05	6.31E-11	6.05E-06	3.81E-05
33	UCART1	299898.7	3810214	8.41E-11	6.39E-11	1.42E-05	3.25E-06	5.65E-05	5.23E-05	1.48E-10	1.42E-05	5.65E-05
34	UCART1	301898.7	3810214	1.15E-10	8.49E-11	1.96E-05	4.44E-06	7.24E-05	6.65E-05	2.00E-10	1.96E-05	7.24E-05
35	UCART1	303898.7	3810214	5.01E-11	3.54E-11	8.57E-06	1.92E-06	0.00013346	0.00012348	8.55E-11	8.57E-06	0.000133
36	UCART1	305898.7	3810214	9.83E-10	7.12E-10	0.00017141	3.80E-05	0.0010691	0.00099873	1.69E-09	0.000171	0.001069
37	UCART1	307898.7	3810214	5.54E-10	3.99E-10	9.45E-05	2.13E-05	0.00055431	0.00052342	9.53E-10	9.45E-05	0.000554
38	UCART1	309898.7	3810214	5.70E-10	4.16E-10	9.81E-05	2.20E-05	0.00042692	0.00040136	9.85E-10	9.81E-05	0.000427
39	UCART1	311898.7	3810214	4.35E-10	3.23E-10	7.41E-05	1.68E-05	0.00040912	0.00038108	7.57E-10	7.41E-05	0.000409
40	UCART1	313898.7	3810214	6.04E-11	4.56E-11	1.05E-05	2.35E-06	3.40E-05	3.14E-05	1.06E-10	1.05E-05	3.40E-05
41	UCART1	295898.7	3812214	1.81E-10	1.31E-10	3.04E-05	6.92E-06	0.00018058	0.00016959	3.11E-10	3.04E-05	0.000181
42	UCART1	297898.7	3812214	2.29E-10	1.69E-10	3.90E-05	8.83E-06	0.00019338	0.00018187	3.98E-10	3.90E-05	0.000193
43	UCART1	299898.7	3812214	4.63E-10	3.43E-10	7.89E-05	1.79E-05	0.00032004	0.00030268	8.06E-10	7.89E-05	0.00032
44	UCART1	301898.7	3812214	1.35E-09	1.00E-09	0.00022957	5.22E-05	0.00062334	0.00058835	2.36E-09	0.00023	0.000623
45	UCART1	303898.7	3812214	7.13E-09	5.65E-09	0.001357	0.00028589	0.0022699	0.0021272	1.28E-08	0.001357	0.00227
46	UCART1	305898.7	3812214	3.33E-09	2.46E-09	0.00060562	0.00013026	0.0023661	0.0022209	5.78E-09	0.000606	0.002366
47	UCART1	307898.7	3812214	1.45E-09	1.06E-09	0.00024816	5.60E-05	0.00066593	0.00062824	2.52E-09	0.000248	0.000666
48	UCART1	309898.7	3812214	1.62E-10	1.21E-10	2.79E-05	6.27E-06	6.09E-05	5.65E-05	2.83E-10	2.79E-05	6.09E-05
49	UCART1	311898.7	3812214	5.04E-11	3.68E-11	8.68E-06	1.94E-06	4.71E-05	4.34E-05	8.72E-11	8.68E-06	4.71E-05
50	UCART1	313898.7	3812214	2.96E-11	2.18E-11	5.09E-06	1.14E-06	3.63E-05	3.37E-05	5.14E-11	5.09E-06	3.63E-05
51	UCART1	295898.7	3814214	9.24E-11	6.84E-11	1.59E-05	3.57E-06	0.0001273	0.00012061	1.61E-10	1.59E-05	0.000127
52	UCART1	297898.7	3814214	1.28E-10	9.46E-11	2.21E-05	4.95E-06	0.00018408	0.00017449	2.22E-10	2.21E-05	0.000184
53	UCART1	299898.7	3814214	1.95E-10	1.45E-10	3.41E-05	7.57E-06	0.00029543	0.00027974	3.40E-10	3.41E-05	0.000295
54	UCART1	301898.7	3814214	4.31E-10	3.43E-10	8.11E-05	1.73E-05	0.00060032	0.0005649	7.75E-10	8.11E-05	0.0006
55	UCART1	303898.7	3814214	3.11E-10	2.50E-10	5.16E-05	1.21E-05	0.00046236	0.00043284	5.61E-10	5.16E-05	0.000462
56	UCART1	305898.7	3814214	1.77E-10	1.28E-10	2.84E-05	6.70E-06	0.00015624	0.0001464	3.05E-10	2.84E-05	0.000156
57	UCART1	307898.7	3814214	1.13E-10	8.22E-11	1.87E-05	4.31E-06	7.17E-05	6.61E-05	1.95E-10	1.87E-05	7.17E-05
58	UCART1	309898.7	3814214	8.49E-11	6.28E-11	1.42E-05	3.26E-06	5.58E-05	5.19E-05	1.48E-10	1.42E-05	5.58E-05
59	UCART1	311898.7	3814214	5.74E-11	4.23E-11	9.69E-06	2.21E-06	4.20E-05	3.88E-05	9.97E-11	9.69E-06	4.20E-05
60	UCART1	313898.7	3814214	3.20E-11	2.36E-11	5.41E-06	1.23E-06	2.73E-05	2.53E-05	5.56E-11	5.41E-06	2.73E-05
61	UCART1	295898.7	3816214	7.00E-11	5.30E-11	1.25E-05	2.74E-06	0.00011184	0.00010588	1.23E-10	1.25E-05	0.000112
62	UCART1	297898.7	3816214	9.33E-11	6.99E-11	1.66E-05	3.64E-06	0.00015561	0.00014759	1.63E-10	1.66E-05	0.000156
63	UCART1	299898.7	3816214	1.66E-10	1.27E-10	3.01E-05	6.54E-06	0.00027491	0.00025971	2.93E-10	3.01E-05	0.000275
64	UCART1	301898.7	3816214	1.56E-11	1.14E-11	2.66E-06	6.00E-07	5.42E-05	5.00E-05	2.70E-11	2.66E-06	5.42E-05
65	UCART1	303898.7	3816214	1.82E-11	1.30E-11	3.07E-06	6.96E-07	5.68E-05	5.28E-05	3.12E-11	3.07E-06	5.68E-05
66	UCART1	305898.7	3816214	2.14E-11	1.60E-11	3.64E-06	8.25E-07	4.82E-05	4.46E-05	3.73E-11	3.64E-06	4.82E-05
67	UCART1	307898.7	3816214	2.02E-11	1.50E-11	3.40E-06	7.76E-07	3.77E-05	3.49E-05	3.52E-11	3.40E-06	3.77E-05

REC	NETID	X	Y	1_4f_W	5_25f_W	1_4f_W Max	5_25f_W Max	1_4f_W Max	5_25f_W Max	Total	Overall	Overall
				Cancer Risk	Cancer Risk	Chronic	Chronic	Acute Hazard	Acute Hazard	Cancer	Max	Max
				Sum	Sum	Hazard Index	Hazard Index	Index	Index	Risk Sum	Chronic	Acute
68	UCART1	309898.7	3816214	2.58E-11	1.94E-11	4.40E-06	9.97E-07	2.84E-05	2.63E-05	4.52E-11	4.40E-06	2.84E-05
69	UCART1	311898.7	3816214	2.53E-11	1.90E-11	4.33E-06	9.79E-07	2.19E-05	2.03E-05	4.43E-11	4.33E-06	2.19E-05
70	UCART1	313898.7	3816214	1.62E-11	1.22E-11	2.78E-06	6.29E-07	2.48E-05	2.31E-05	2.84E-11	2.78E-06	2.48E-05
71	UCART1	295898.7	3818214	4.25E-12	3.13E-12	7.23E-07	1.64E-07	1.69E-05	1.57E-05	7.38E-12	7.23E-07	1.69E-05
72	UCART1	297898.7	3818214	6.82E-12	5.21E-12	1.17E-06	2.65E-07	1.96E-05	1.83E-05	1.20E-11	1.17E-06	1.96E-05
73	UCART1	299898.7	3818214	6.69E-12	4.92E-12	1.14E-06	2.58E-07	3.51E-05	3.24E-05	1.16E-11	1.14E-06	3.51E-05
74	UCART1	301898.7	3818214	7.14E-12	5.21E-12	1.21E-06	2.75E-07	2.10E-05	1.96E-05	1.24E-11	1.21E-06	2.10E-05
75	UCART1	303898.7	3818214	9.06E-12	6.97E-12	1.57E-06	3.53E-07	5.08E-05	4.72E-05	1.60E-11	1.57E-06	5.08E-05
76	UCART1	305898.7	3818214	1.10E-11	8.30E-12	1.88E-06	4.25E-07	2.58E-05	2.39E-05	1.93E-11	1.88E-06	2.58E-05
77	UCART1	307898.7	3818214	9.45E-12	6.96E-12	1.60E-06	3.64E-07	3.04E-05	2.81E-05	1.64E-11	1.60E-06	3.04E-05
78	UCART1	309898.7	3818214	1.01E-11	7.57E-12	1.72E-06	3.89E-07	2.54E-05	2.36E-05	1.76E-11	1.72E-06	2.54E-05
79	UCART1	311898.7	3818214	1.18E-11	8.70E-12	1.99E-06	4.53E-07	1.36E-05	1.27E-05	2.05E-11	1.99E-06	1.36E-05
80	UCART1	313898.7	3818214	1.15E-11	8.55E-12	1.97E-06	4.44E-07	1.40E-05	1.30E-05	2.00E-11	1.97E-06	1.40E-05
81	UCART1	295898.7	3820214	3.19E-12	2.39E-12	5.52E-07	1.24E-07	1.39E-05	1.29E-05	5.58E-12	5.52E-07	1.39E-05
82	UCART1	297898.7	3820214	4.21E-12	3.12E-12	7.22E-07	1.63E-07	2.67E-05	2.46E-05	7.33E-12	7.22E-07	2.67E-05
83	UCART1	299898.7	3820214	4.96E-12	3.75E-12	8.64E-07	1.93E-07	3.46E-05	3.24E-05	8.72E-12	8.64E-07	3.46E-05
84	UCART1	301898.7	3820214	4.79E-12	3.55E-12	8.21E-07	1.85E-07	1.68E-05	1.56E-05	8.34E-12	8.21E-07	1.68E-05
85	UCART1	303898.7	3820214	6.33E-12	4.74E-12	1.09E-06	2.45E-07	2.37E-05	2.21E-05	1.11E-11	1.09E-06	2.37E-05
86	UCART1	305898.7	3820214	7.10E-12	5.31E-12	1.22E-06	2.75E-07	2.01E-05	1.87E-05	1.24E-11	1.22E-06	2.01E-05
87	UCART1	307898.7	3820214	6.89E-12	5.25E-12	1.19E-06	2.68E-07	2.24E-05	2.07E-05	1.21E-11	1.19E-06	2.24E-05
88	UCART1	309898.7	3820214	6.73E-12	5.08E-12	1.16E-06	2.61E-07	2.27E-05	2.12E-05	1.18E-11	1.16E-06	2.27E-05
89	UCART1	311898.7	3820214	7.41E-12	5.58E-12	1.28E-06	2.87E-07	1.84E-05	1.71E-05	1.30E-11	1.28E-06	1.84E-05
90	UCART1	313898.7	3820214	7.87E-12	5.76E-12	1.33E-06	3.03E-07	7.51E-06	7.00E-06	1.36E-11	1.33E-06	7.51E-06
91	UCART1	295898.7	3822214	2.73E-12	2.05E-12	4.68E-07	1.06E-07	2.16E-05	1.99E-05	4.77E-12	4.68E-07	2.16E-05
92	UCART1	297898.7	3822214	3.70E-12	2.97E-12	6.55E-07	1.46E-07	3.66E-05	3.38E-05	6.66E-12	6.55E-07	3.66E-05
93	UCART1	299898.7	3822214	3.41E-12	2.51E-12	5.82E-07	1.31E-07	1.03E-05	9.55E-06	5.92E-12	5.82E-07	1.03E-05
94	UCART1	301898.7	3822214	4.11E-12	2.95E-12	7.02E-07	1.58E-07	1.88E-05	1.75E-05	7.07E-12	7.02E-07	1.88E-05
95	UCART1	303898.7	3822214	5.28E-12	3.89E-12	9.08E-07	2.04E-07	1.94E-05	1.81E-05	9.17E-12	9.08E-07	1.94E-05
96	UCART1	305898.7	3822214	5.41E-12	4.03E-12	9.33E-07	2.09E-07	2.15E-05	2.01E-05	9.44E-12	9.33E-07	2.15E-05
97	UCART1	307898.7	3822214	5.45E-12	4.09E-12	9.40E-07	2.11E-07	1.45E-05	1.35E-05	9.55E-12	9.40E-07	1.45E-05
98	UCART1	309898.7	3822214	5.11E-12	3.69E-12	8.65E-07	1.96E-07	1.62E-05	1.51E-05	8.79E-12	8.65E-07	1.62E-05
99	UCART1	311898.7	3822214	5.19E-12	3.91E-12	8.99E-07	2.01E-07	1.94E-05	1.80E-05	9.10E-12	8.99E-07	1.94E-05
100	UCART1	313898.7	3822214	5.54E-12	4.19E-12	9.54E-07	2.15E-07	1.45E-05	1.35E-05	9.72E-12	9.54E-07	1.45E-05
101	UCART2	303323.7	3811639	4.26E-09	3.25E-09	0.00073892	0.0001658	0.0020349	0.0019052	7.51E-09	0.000739	0.002035
102	UCART2	303673.7	3811639	4.27E-09	3.21E-09	0.0007423	0.00016583	0.0022092	0.0020679	7.48E-09	0.000742	0.002209
103	UCART2	304023.7	3811639	3.32E-09	2.53E-09	0.00055241	0.00012785	0.0018693	0.0017613	5.84E-09	0.000552	0.001869
104	UCART2	304373.7	3811639	1.47E-09	1.14E-09	0.00023974	5.66E-05	0.00090695	0.00085613	2.61E-09	0.00024	0.000907
105	UCART2	304723.7	3811639	2.76E-09	2.08E-09	0.00045832	0.00010616	0.0027828	0.0026097	4.84E-09	0.000458	0.002783
106	UCART2	305073.7	3811639	2.67E-09	2.10E-09	0.00051445	0.00010732	0.0021519	0.0020041	4.77E-09	0.000514	0.002152
107	UCART2	305423.7	3811639	2.17E-09	1.59E-09	0.00038895	8.45E-05	0.0019396	0.0018143	3.76E-09	0.000389	0.00194
108	UCART2	305773.7	3811639	2.00E-09	1.48E-09	0.00035571	7.80E-05	0.0017269	0.001619	3.49E-09	0.000356	0.001727
109	UCART2	306123.7	3811639	1.76E-09	1.28E-09	0.00030734	6.81E-05	0.0014784	0.0013899	3.04E-09	0.000307	0.001478
110	UCART2	306473.7	3811639	1.59E-09	1.16E-09	0.00027867	6.15E-05	0.0013303	0.0012522	2.75E-09	0.000279	0.00133
111	UCART2	303323.7	3811989	4.87E-09	3.75E-09	0.00088774	0.00019226	0.0015857	0.0014756	8.62E-09	0.000888	0.001586
112	UCART2	303673.7	3811989	5.80E-09	4.55E-09	0.0010833	0.00023099	0.0019172	0.0017885	1.03E-08	0.001083	0.001917
113	UCART2	304023.7	3811989	5.89E-09	4.57E-09	0.0011366	0.00023622	0.0021387	0.0019875	1.05E-08	0.001137	0.002139
114	UCART2	304373.7	3811989	5.23E-09	4.07E-09	0.0010297	0.00021079	0.002571	0.0023873	9.30E-09	0.00103	0.002571
115	UCART2	304723.7	3811989	3.74E-09	2.75E-09	0.00068911	0.00014676	0.0026136	0.0024425	6.49E-09	0.000689	0.002614
116	UCART2	305073.7	3811989	3.68E-09	2.79E-09	0.0006769	0.00014517	0.0027933	0.0026151	6.47E-09	0.000677	0.002793
117	UCART2	305423.7	3811989	3.09E-09	2.30E-09	0.00056481	0.00012138	0.0025387	0.0023718	5.40E-09	0.000565	0.002539
118	UCART2	305773.7	3811989	2.76E-09	2.03E-09	0.00049126	0.00010746	0.0022209	0.0020846	4.79E-09	0.000491	0.002221
119	UCART2	306123.7	3811989	2.40E-09	1.77E-09	0.00043178	9.38E-05	0.0018396	0.001729	4.17E-09	0.000432	0.00184
120	UCART2	306473.7	3811989	2.24E-09	1.65E-09	0.00040692	8.76E-05	0.0015337	0.0014454	3.89E-09	0.000407	0.001534
121	UCART2	303323.7	3812339	4.56E-09	3.55E-09	0.0008208	0.00017974	0.0013914	0.0013132	8.11E-09	0.000821	0.001391
122	UCART2	303673.7	3812339	6.53E-09	5.10E-09	0.0012028	0.00025903	0.0020878	0.0019624	1.16E-08	0.001203	0.002088
123	UCART2	304023.7	3812339	8.47E-09	6.66E-09	0.0015935	0.00033822	0.0026537	0.0024929	1.51E-08	0.001594	0.002654
124	UCART2	304373.7	3812339	8.54E-09	6.53E-09	0.0016459	0.00034138	0.0033207	0.0031131	1.51E-08	0.001646	0.003321
125	UCART2	304723.7	3812339	6.65E-09	5.04E-09	0.0012863	0.00026554	0.0037108	0.0034557	1.17E-08	0.001286	0.003711
126	UCART2	305073.7	3812339	6.01E-09	4.62E-09	0.0011539	0.00024022	0.0040947	0.0038059	1.06E-08	0.001154	0.004095
127	UCART2	305423.7	3812339	4.98E-09	3.81E-09	0.00093422	0.00019776	0.0034944	0.0032615	8.79E-09	0.000934	0.003494
128	UCART2	305773.7	3812339	4.13E-09	3.08E-09	0.00076855	0.00016295	0.0027784	0.0026053	7.21E-09	0.000769	0.002778
129	UCART2	306123.7	3812339	3.93E-09	3.00E-09	0.00066989	0.00015245	0.0027475	0.0025994	6.93E-09	0.00067	0.002748
130	UCART2	306473.7	3812339	1.29E-09	1.02E-09	0.00022974	5.09E-05	0.00056474	0.00052978	2.31E-09	0.00023	0.000565
131	UCART2	303323.7	3812689	3.93E-09	3.04E-09	0.00068648	0.00015355	0.0014741	0.0013889	6.99E-09	0.000686	0.001474
132	UCART2	303673.7	3812689	6.40E-09	5.04E-09	0.0011396	0.00025225	0.0020033	0.0018938	1.14E-08	0.00114	0.002003
133	UCART2	304023.7	3812689	1.10E-08	8.60E-09	0.0019418	0.00043152	0.0030504	0.0028917	1.96E-08	0.001942	0.00305
134	UCART2	304373.7	3812689	1.81E-08	1.45E-08	0.0034857	0.00072907	0.0046675	0.0043794	3.26E-08	0.003486	0.004668

REC	NETID	X	Y	1_4f_W	5_25f_W	1_4f_W Max	5_25f_W Max	1_4f_W Max	5_25f_W Max	Total	Overall	Overall
				Cancer Risk	Cancer Risk	Chronic	Chronic	Acute Hazard	Acute Hazard	Cancer	Max	Max
				Sum	Sum	Hazard Index	Hazard Index	Index	Index	Risk Sum	Chronic	Acute
135	UCART2	304723.7	3812689	1.61E-08	1.28E-08	0.0035291	0.00067042	0.006197	0.005735	2.89E-08	0.003529	0.006197
136	UCART2	305073.7	3812689	1.18E-08	9.51E-09	0.0025482	0.00049173	0.0065349	0.0059979	2.14E-08	0.002548	0.006535
137	UCART2	305423.7	3812689	2.15E-09	1.81E-09	0.00042657	8.81E-05	0.0014202	0.0013297	3.96E-09	0.000427	0.00142
138	UCART2	305773.7	3812689	8.05E-09	6.28E-09	0.0013919	0.00031458	0.004147	0.0039541	1.43E-08	0.001392	0.004147
139	UCART2	306123.7	3812689	6.20E-09	4.79E-09	0.0011668	0.00024689	0.0021749	0.0020453	1.10E-08	0.001167	0.002175
140	UCART2	306473.7	3812689	5.05E-09	3.88E-09	0.00091582	0.00019902	0.0017374	0.0016242	8.93E-09	0.000916	0.001737
141	UCART2	303323.7	3813039	2.48E-09	1.89E-09	0.00043246	9.67E-05	0.001502	0.0014171	4.37E-09	0.000432	0.001502
142	UCART2	303673.7	3813039	4.10E-09	3.20E-09	0.00071942	0.00016072	0.002068	0.0019481	7.30E-09	0.000719	0.002068
143	UCART2	304023.7	3813039	7.77E-09	6.10E-09	0.001318	0.00030247	0.0031999	0.0030349	1.39E-08	0.001318	0.0032
144	UCART2	304373.7	3813039	2.07E-08	1.71E-08	0.0035047	0.00081431	0.0053068	0.0050265	3.78E-08	0.003505	0.005307
145	UCART2	304723.7	3813039	8.09E-08	8.16E-08	0.017808	0.0035358	0.009677	0.0090861	1.62E-07	0.017808	0.009677
146	UCART2	305073.7	3813039	5.02E-08	5.23E-08	0.017192	0.0025343	0.013618	0.012418	1.02E-07	0.017192	0.013618
147	UCART2	305423.7	3813039	1.28E-08	1.05E-08	0.0024062	0.00051597	0.0018926	0.0018033	2.33E-08	0.002406	0.001893
148	UCART2	305773.7	3813039	4.02E-09	3.07E-09	0.00070021	0.00015663	0.00066276	0.00062951	7.09E-09	0.0007	0.000663
149	UCART2	306123.7	3813039	8.64E-09	6.44E-09	0.0014171	0.00033057	0.0036514	0.003447	1.51E-08	0.001417	0.003651
150	UCART2	306473.7	3813039	2.07E-09	1.61E-09	0.00034533	8.02E-05	0.00047602	0.00044647	3.68E-09	0.000345	0.000476
151	UCART2	303323.7	3813389	1.61E-09	1.28E-09	0.00029442	6.40E-05	0.0014937	0.0014053	2.89E-09	0.000294	0.001494
152	UCART2	303673.7	3813389	2.40E-09	1.93E-09	0.00044412	9.57E-05	0.0021721	0.0020429	4.32E-09	0.000444	0.002172
153	UCART2	304023.7	3813389	3.59E-09	2.96E-09	0.00068899	0.00014541	0.0031403	0.0029489	6.55E-09	0.000689	0.00314
154	UCART2	304373.7	3813389	6.11E-09	5.23E-09	0.0011817	0.0002497	0.005166	0.0048838	1.13E-08	0.001182	0.005166
155	UCART2	304723.7	3813389	1.87E-08	2.06E-08	0.0041631	0.00083521	0.010812	0.0099538	3.92E-08	0.004163	0.010812
156	UCART2	305073.7	3813389	1.04E-08	8.54E-09	0.0016005	0.00039947	0.0036018	0.0034327	1.89E-08	0.001601	0.003602
157	UCART2	305423.7	3813389	3.87E-09	2.79E-09	0.00056793	0.00014357	0.00094839	0.00091033	6.56E-09	0.000568	0.000948
158	UCART2	305773.7	3813389	2.07E-09	1.49E-09	0.00031395	7.73E-05	0.0005487	0.00052115	3.65E-09	0.000314	0.000549
159	UCART2	306123.7	3813389	1.73E-09	1.28E-09	0.00027029	6.55E-05	0.00048385	0.00045576	3.02E-09	0.00027	0.000484
160	UCART2	306473.7	3813389	1.85E-09	1.37E-09	0.00028616	6.98E-05	0.0007102	0.00067326	3.22E-09	0.000286	0.00071
161	UCART2	303323.7	3813739	1.28E-09	1.03E-09	0.00024079	5.13E-05	0.0015564	0.0014652	2.31E-09	0.000241	0.001556
162	UCART2	303673.7	3813739	2.24E-10	1.77E-10	3.75E-05	8.71E-06	0.00042878	0.00040289	4.02E-10	3.75E-05	0.000429
163	UCART2	304023.7	3813739	1.00E-09	7.89E-10	0.00015445	3.83E-05	0.0015609	0.0014874	1.79E-09	0.000154	0.001561
164	UCART2	304373.7	3813739	3.55E-10	2.68E-10	6.04E-05	1.37E-05	0.00056826	0.00052469	6.23E-10	6.04E-05	0.000568
165	UCART2	304723.7	3813739	1.16E-09	8.74E-10	0.00018524	4.42E-05	0.0010911	0.0010245	2.03E-09	0.000185	0.001091
166	UCART2	305073.7	3813739	7.06E-10	5.11E-10	0.00011021	2.66E-05	0.0007218	0.00068543	1.22E-09	0.00011	0.000722
167	UCART2	305423.7	3813739	6.32E-10	4.52E-10	9.76E-05	2.37E-05	0.00046713	0.00043913	1.08E-09	9.76E-05	0.000467
168	UCART2	305773.7	3813739	6.32E-10	4.62E-10	9.82E-05	2.38E-05	0.00031581	0.00029774	1.09E-09	9.82E-05	0.000316
169	UCART2	306123.7	3813739	5.32E-10	3.88E-10	8.47E-05	2.01E-05	0.00024485	0.00023099	9.20E-10	8.47E-05	0.000245
170	UCART2	306473.7	3813739	4.43E-10	3.21E-10	7.06E-05	1.68E-05	0.00020644	0.00019346	7.64E-10	7.06E-05	0.000206
171	UCART2	303323.7	3814089	1.23E-10	9.40E-11	2.04E-05	4.73E-06	0.00026322	0.00024663	2.17E-10	2.04E-05	0.000263
172	UCART2	303673.7	3814089	9.98E-11	7.60E-11	1.68E-05	3.86E-06	0.0002069	0.00019382	1.76E-10	1.68E-05	0.000207
173	UCART2	304023.7	3814089	2.38E-10	1.85E-10	3.97E-05	9.21E-06	0.00040098	0.00037291	4.23E-10	3.97E-05	0.000401
174	UCART2	304373.7	3814089	2.11E-10	1.57E-10	3.56E-05	8.11E-06	0.00032032	0.00029377	3.67E-10	3.56E-05	0.00032
175	UCART2	304723.7	3814089	3.52E-10	2.56E-10	5.59E-05	1.33E-05	0.00049196	0.00046074	6.08E-10	5.59E-05	0.000492
176	UCART2	305073.7	3814089	2.76E-10	2.03E-10	4.46E-05	1.05E-05	0.00033415	0.00031268	4.79E-10	4.46E-05	0.000334
177	UCART2	305423.7	3814089	2.92E-10	2.10E-10	4.64E-05	1.10E-05	0.00034615	0.00032644	5.02E-10	4.64E-05	0.000346
178	UCART2	305773.7	3814089	2.42E-10	1.74E-10	3.85E-05	9.13E-06	0.00021313	0.00019964	4.15E-10	3.85E-05	0.000213
179	UCART2	306123.7	3814089	2.03E-10	1.47E-10	3.26E-05	7.70E-06	0.00013203	0.00012478	3.50E-10	3.26E-05	0.000132
180	UCART2	306473.7	3814089	1.77E-10	1.31E-10	2.89E-05	6.75E-06	0.00011406	0.00010656	3.08E-10	2.89E-05	0.000114
181	UCART2	303323.7	3814439	5.79E-11	4.30E-11	9.65E-06	2.22E-06	0.00013125	0.00012143	1.01E-10	9.65E-06	0.000131
182	UCART2	303673.7	3814439	1.21E-10	9.30E-11	2.05E-05	4.69E-06	0.00026348	0.00024375	2.14E-10	2.05E-05	0.000263
183	UCART2	304023.7	3814439	9.29E-11	7.25E-11	1.61E-05	3.63E-06	0.00022152	0.00020004	1.65E-10	1.61E-05	0.000222
184	UCART2	304373.7	3814439	1.24E-10	9.01E-11	2.03E-05	4.72E-06	0.00019027	0.00017707	2.14E-10	2.03E-05	0.00019
185	UCART2	304723.7	3814439	1.27E-10	9.04E-11	2.07E-05	4.82E-06	0.0002273	0.00021148	2.18E-10	2.07E-05	0.000227
186	UCART2	305073.7	3814439	1.23E-10	9.17E-11	2.04E-05	4.72E-06	0.00016266	0.00014954	2.15E-10	2.04E-05	0.000163
187	UCART2	305423.7	3814439	1.39E-10	1.02E-10	2.27E-05	5.29E-06	0.00018134	0.00016967	2.40E-10	2.27E-05	0.000181
188	UCART2	305773.7	3814439	1.09E-10	7.93E-11	1.78E-05	4.15E-06	0.00014489	0.00013421	1.88E-10	1.78E-05	0.000145
189	UCART2	306123.7	3814439	1.07E-10	7.86E-11	1.76E-05	4.10E-06	9.50E-05	8.88E-05	1.86E-10	1.76E-05	9.50E-05
190	UCART2	306473.7	3814439	9.27E-11	6.71E-11	1.52E-05	3.53E-06	6.71E-05	6.25E-05	1.60E-10	1.52E-05	6.71E-05
191	UCART2	303323.7	3814789	4.48E-11	3.27E-11	7.69E-06	1.72E-06	0.00011624	0.00010676	7.74E-11	7.69E-06	0.000116
192	UCART2	303673.7	3814789	7.21E-11	5.53E-11	1.24E-05	2.81E-06	0.00018732	0.00017103	1.27E-10	1.24E-05	0.000187
193	UCART2	304023.7	3814789	8.37E-11	6.12E-11	1.39E-05	3.20E-06	0.00014371	0.00013366	1.45E-10	1.39E-05	0.000144
194	UCART2	304373.7	3814789	7.14E-11	5.01E-11	1.17E-05	2.70E-06	0.00012727	0.00011821	1.21E-10	1.17E-05	0.000127
195	UCART2	304723.7	3814789	6.88E-11	5.04E-11	1.15E-05	2.63E-06	0.00015853	0.00014663	1.19E-10	1.15E-05	0.000159
196	UCART2	305073.7	3814789	5.94E-11	4.47E-11	1.00E-05	2.29E-06	0.00013502	0.00012363	1.04E-10	1.00E-05	0.000135
197	UCART2	305423.7	3814789	6.86E-11	5.06E-11	1.14E-05	2.63E-06	8.65E-05	8.07E-05	1.19E-10	1.14E-05	8.65E-05
198	UCART2	305773.7	3814789	8.24E-11	5.92E-11	1.35E-05	3.13E-06	0.00011185	0.00010465	1.42E-10	1.35E-05	0.000112
199	UCART2	306123.7	3814789	7.28E-11	5.33E-11	1.21E-05	2.78E-06	9.96E-05	9.21E-05	1.26E-10	1.21E-05	9.96E-05
200	UCART2	306473.7	3814789	6.05E-11	4.46E-11	1.00E-05	2.32E-06	6.25E-05	5.81E-05	1.05E-10	1.00E-05	6.25E-05
201	UCART2	305181.2	3813150	7.15E-08	5.46E-08	0.010392	0.002677	0.013891	0.013602	1.26E-07	0.010392	0.013891

REC	NETID	X	Y	1_4f_W	5_25f_W	1_4f_W Max	5_25f_W Max	1_4f_W Max	5_25f_W Max	Total	Overall	Overall
				Cancer Risk	Cancer Risk	Chronic	Chronic	Acute Hazard	Acute Hazard	Cancer	Max	Max
				Sum	Sum	Hazard Index	Hazard Index	Index	Index	Risk Sum	Chronic	Acute
202		305175.1	3813184	6.33E-08	4.79E-08	0.008553	0.0023323	0.0083058	0.0081252	1.11E-07	0.008553	0.008306
203		304930.6	3812926	2.88E-08	2.78E-08	0.0086089	0.0013665	0.0099171	0.008718	5.66E-08	0.008609	0.009917
204		304812.5	3812740	1.66E-08	1.34E-08	0.0038069	0.0007026	0.0068445	0.0062771	3.00E-08	0.003807	0.006844
205		304595.7	3812860	3.38E-08	2.84E-08	0.0072483	0.0014132	0.0070783	0.0066211	6.22E-08	0.007248	0.007078
206		304652.6	3813041	6.40E-08	6.18E-08	0.01241	0.0026829	0.0087016	0.0082218	1.26E-07	0.01241	0.008702
207		304658.1	3813202	3.59E-08	3.42E-08	0.0068764	0.0014968	0.0099643	0.0094428	7.02E-08	0.006876	0.009964
208		304641.4	3812566	1.22E-08	9.41E-09	0.002496	0.00049561	0.0050321	0.0046902	2.16E-08	0.002496	0.005032
209		304590.2	3812613	1.46E-08	1.13E-08	0.003014	0.00059599	0.0050193	0.004673	2.59E-08	0.003014	0.005019
210		305548.4	3813385	2.43E-09	1.72E-09	0.00036121	9.03E-05	0.00056587	0.00053969	4.15E-09	0.000361	0.000566
211		304971.4	3813575	1.50E-09	1.10E-09	0.00023055	5.66E-05	0.0012629	0.0012022	2.61E-09	0.000231	0.001263
212		304670.5	3813774	9.08E-10	6.95E-10	0.00014585	3.48E-05	0.00089863	0.00084285	1.60E-09	0.000146	0.000899
213		304345	3813766	3.09E-10	2.32E-10	5.28E-05	1.20E-05	0.00052721	0.00048418	5.41E-10	5.28E-05	0.000527
214		304954.2	3813207	1.81E-07	7.49E-07	0.081463	0.015408	0.025619	0.025619	9.29E-07	0.081463	0.025619
215		304956.3	3813189	1.66E-07	6.51E-07	0.076165	0.013879	0.027183	0.027183	8.17E-07	0.076165	0.027183
216		304958.3	3813171	1.33E-07	4.32E-07	0.098021	0.012235	0.026824	0.026824	5.65E-07	0.098021	0.026824
217		304960.3	3813154	1.07E-07	2.80E-07	0.1024	0.010473	0.024126	0.024126	3.88E-07	0.1024	0.024126
218		304952.7	3813138	9.12E-08	2.06E-07	0.097888	0.0091685	0.02064	0.02064	2.97E-07	0.097888	0.02064
219		304945.1	3813123	8.54E-08	1.55E-07	0.11158	0.0092924	0.01644	0.01644	2.41E-07	0.11158	0.01644
220		304937.6	3813108	7.99E-08	1.23E-07	0.1071	0.008625	0.016243	0.013918	2.02E-07	0.1071	0.016243
221		304930	3813093	7.63E-08	1.03E-07	0.10342	0.0081687	0.016364	0.013834	1.80E-07	0.10342	0.016364
222		304922.5	3813078	7.23E-08	8.97E-08	0.095866	0.0075504	0.016168	0.013605	1.62E-07	0.095866	0.016168
223		304914.9	3813063	6.52E-08	7.75E-08	0.071636	0.0059924	0.015677	0.013126	1.43E-07	0.071636	0.015677
224		304899.4	3813053	6.25E-08	7.15E-08	0.054446	0.0049657	0.015353	0.012606	1.34E-07	0.054446	0.015353
225		304884.3	3813044	6.18E-08	6.69E-08	0.045232	0.0044197	0.014176	0.012035	1.29E-07	0.045232	0.014176
226		304869.2	3813035	6.16E-08	6.40E-08	0.037529	0.0039798	0.01325	0.011563	1.26E-07	0.037529	0.01325
227		304854.1	3813026	6.16E-08	6.21E-08	0.031682	0.0036505	0.012431	0.010998	1.24E-07	0.031682	0.012431
228		304846	3813012	5.72E-08	5.61E-08	0.025964	0.0031931	0.011651	0.01035	1.13E-07	0.025964	0.011651
229		304837.5	3812997	5.32E-08	5.10E-08	0.021747	0.0028318	0.011016	0.0098277	1.04E-07	0.021747	0.011016
230		304829.1	3812982	4.97E-08	4.66E-08	0.018609	0.0025437	0.010428	0.0093268	9.62E-08	0.018609	0.010428
231		304820.7	3812968	4.64E-08	4.27E-08	0.016187	0.0023067	0.0099622	0.0089368	8.91E-08	0.016187	0.009962
232		304812.2	3812953	4.35E-08	3.94E-08	0.014264	0.0021071	0.0097015	0.0087445	8.28E-08	0.014264	0.009702
233		304803.8	3812938	4.08E-08	3.64E-08	0.012703	0.0019361	0.0094711	0.0085751	7.72E-08	0.012703	0.009471
234		304802.4	3812938	4.09E-08	3.64E-08	0.012689	0.0019377	0.0094582	0.0085691	7.73E-08	0.012689	0.009458
235		304787.5	3812948	4.51E-08	4.03E-08	0.013846	0.0021293	0.0093177	0.0084786	8.53E-08	0.013846	0.009318
236		304772.6	3812957	4.95E-08	4.44E-08	0.014767	0.002317	0.0094446	0.0086304	9.39E-08	0.014767	0.009445
237		304757.6	3812966	5.39E-08	4.88E-08	0.015353	0.0024893	0.0095619	0.0087908	1.03E-07	0.015353	0.009562
238		304742.7	3812976	5.81E-08	5.32E-08	0.015577	0.0026356	0.0093696	0.0086467	1.11E-07	0.015577	0.00937
239		304727.8	3812985	6.17E-08	5.71E-08	0.015491	0.0027491	0.0093528	0.0086814	1.19E-07	0.015491	0.009353
240		304712.8	3812995	6.44E-08	6.05E-08	0.015177	0.0028256	0.009286	0.0086515	1.25E-07	0.015177	0.009286
241		304697.9	3813004	6.60E-08	6.28E-08	0.014688	0.0028577	0.0090096	0.0084204	1.29E-07	0.014688	0.00901
242		304698	3813022	7.11E-08	6.92E-08	0.01527	0.0030632	0.0092848	0.0087227	1.40E-07	0.01527	0.009285
243		304698.6	3813040	7.56E-08	7.53E-08	0.015707	0.0032463	0.0093846	0.0088396	1.51E-07	0.015707	0.009385
244		304699.1	3813057	7.95E-08	8.09E-08	0.015979	0.0034012	0.0095012	0.0089641	1.60E-07	0.015979	0.009501
245		304699.7	3813074	8.23E-08	8.55E-08	0.016074	0.0035121	0.0095697	0.0090328	1.68E-07	0.016074	0.00957
246		304700.2	3813092	8.36E-08	8.82E-08	0.015974	0.0035613	0.010082	0.0095453	1.72E-07	0.015974	0.010082
247		304701	3813112	8.30E-08	8.86E-08	0.015605	0.0035309	0.010415	0.0098774	1.72E-07	0.015605	0.010415
248		304701.8	3813132	7.98E-08	8.57E-08	0.014902	0.0033944	0.010563	0.010009	1.65E-07	0.014902	0.010563
249		304702.7	3813152	7.36E-08	7.90E-08	0.013824	0.0031364	0.010742	0.010173	1.53E-07	0.013824	0.010742
250		304703.5	3813171	6.46E-08	6.85E-08	0.012391	0.0027576	0.011054	0.010471	1.33E-07	0.012391	0.011054
251		304704.3	3813191	5.39E-08	5.63E-08	0.010747	0.0023151	0.011071	0.010479	1.10E-07	0.010747	0.011071
252		304705.1	3813211	4.38E-08	4.54E-08	0.0090954	0.0018965	0.011108	0.010493	8.92E-08	0.009095	0.011108
253		304705.9	3813231	3.56E-08	3.70E-08	0.0076213	0.0015548	0.01127	0.010624	7.26E-08	0.007621	0.01127
254		304706.7	3813251	2.96E-08	3.10E-08	0.0064705	0.0013015	0.01116	0.010499	6.06E-08	0.006471	0.01116
255		304707.5	3813271	2.54E-08	2.69E-08	0.0056403	0.0011255	0.011107	0.01042	5.24E-08	0.00564	0.011107
256		304708.3	3813291	2.26E-08	2.42E-08	0.0050676	0.0010062	0.011039	0.010335	4.68E-08	0.005068	0.011039
257		304709.1	3813311	2.06E-08	2.20E-08	0.0046495	0.00091837	0.010909	0.010217	4.26E-08	0.00465	0.010909
258		304709.9	3813331	1.92E-08	2.02E-08	0.0043479	0.00085244	0.010779	0.010061	3.94E-08	0.004348	0.010779
259		304710.8	3813351	1.81E-08	1.91E-08	0.004136	0.00080637	0.010672	0.0099277	3.72E-08	0.004136	0.010672
260		304711.6	3813371	1.76E-08	1.91E-08	0.0040478	0.00079087	0.010378	0.0096038	3.67E-08	0.004048	0.010378
261		304712.4	3813390	1.78E-08	1.93E-08	0.0039345	0.00079101	0.010614	0.009792	3.71E-08	0.003935	0.010614
262		304713.2	3813410	1.87E-08	1.90E-08	0.003698	0.00079684	0.011702	0.010884	3.77E-08	0.003698	0.011702
263		304714	3813430	1.84E-08	1.77E-08	0.0033005	0.00075731	0.012508	0.011689	3.62E-08	0.003301	0.012508
264		304715.6	3813431	1.88E-08	1.79E-08	0.0033616	0.00077184	0.012518	0.011698	3.68E-08	0.003362	0.012518
265		304729.9	3813419	1.86E-08	1.95E-08	0.0038946	0.00081008	0.010923	0.010077	3.82E-08	0.003895	0.010923
266		304744.3	3813407	1.96E-08	2.14E-08	0.0043049	0.00087056	0.010877	0.0099807	4.09E-08	0.004305	0.010877
267		304758.6	3813395	2.09E-08	2.33E-08	0.0047538	0.00094277	0.011154	0.010215	4.42E-08	0.004754	0.011154
268		304772.9	3813383	2.38E-08	2.75E-08	0.0054831	0.001086	0.012123	0.011074	5.13E-08	0.005483	0.012123

REC	NETID	X	Y	1_4f_W	5_25f_W	1_4f_W Max	5_25f_W Max	1_4f_W Max	5_25f_W Max	Total	Overall	Overall
				Cancer Risk	Cancer Risk	Chronic	Chronic	Acute Hazard	Acute Hazard	Cancer	Max	Max
				Sum	Sum	Hazard Index	Hazard Index	Index	Index	Risk Sum	Chronic	Acute
269		304787.2	3813371	2.81E-08	3.33E-08	0.006385	0.0012843	0.013868	0.012711	6.14E-08	0.006385	0.013868
270		304801.5	3813359	3.19E-08	3.77E-08	0.0063132	0.0014086	0.017112	0.015901	6.96E-08	0.006313	0.017112
271		304815.8	3813347	3.14E-08	3.28E-08	0.0054568	0.0013068	0.02038	0.019492	6.43E-08	0.005457	0.02038
272		304830.1	3813335	3.18E-08	2.83E-08	0.0047939	0.0012366	0.026268	0.025757	6.00E-08	0.004794	0.026268
273		304844.4	3813322	3.16E-08	3.00E-08	0.0049715	0.0012591	0.023167	0.022755	6.16E-08	0.004972	0.023167
274		304858.7	3813310	4.43E-08	4.15E-08	0.0067057	0.0017448	0.034127	0.033626	8.58E-08	0.006706	0.034127
275		304873	3813298	6.74E-08	6.91E-08	0.011029	0.002754	0.038779	0.03787	1.36E-07	0.011029	0.038779
276		304887.3	3813286	7.29E-08	1.18E-07	0.018553	0.0037332	0.018887	0.017474	1.91E-07	0.018553	0.018887
277		304901.6	3813274	8.04E-08	1.80E-07	0.029356	0.0050529	0.017408	0.017408	2.60E-07	0.029356	0.017408
278		304915.9	3813262	8.62E-08	2.54E-07	0.044159	0.0066614	0.020886	0.019841	3.40E-07	0.044159	0.020886
279		304930.2	3813250	9.14E-08	3.39E-07	0.058893	0.0083573	0.020159	0.020159	4.30E-07	0.058893	0.020159
280		304938.4	3813236	1.20E-07	5.49E-07	0.075078	0.011821	0.021398	0.021398	6.69E-07	0.075078	0.021398
281		304946.2	3813221	1.61E-07	7.44E-07	0.080862	0.014888	0.02292	0.02292	9.06E-07	0.080862	0.02292
282		304715	3813430	1.88E-08	1.79E-08	0.003343	0.00076925	0.012527	0.011702	3.67E-08	0.003343	0.012527
283		304701.2	3813092	8.41E-08	8.88E-08	0.01608	0.0035834	0.010084	0.0095458	1.73E-07	0.01608	0.010084
284		304698.5	3813005	6.63E-08	6.31E-08	0.014751	0.0028712	0.0090169	0.0084277	1.29E-07	0.014751	0.009017
285		304802.9	3812939	4.10E-08	3.66E-08	0.01277	0.0019466	0.0094729	0.0085803	7.76E-08	0.01277	0.009473
286		304853.5	3813027	6.21E-08	6.27E-08	0.032012	0.0036867	0.012428	0.010999	1.25E-07	0.032012	0.012428
287		304914	3813063	6.60E-08	7.81E-08	0.074604	0.0061748	0.015766	0.013164	1.44E-07	0.074604	0.015766
288		304959.3	3813154	1.07E-07	2.81E-07	0.10484	0.010615	0.024282	0.024282	3.89E-07	0.10484	0.024282
289		304953.2	3813207	1.83E-07	7.71E-07	0.083383	0.015779	0.026099	0.026099	9.55E-07	0.083383	0.026099
290		304929.6	3813249	9.28E-08	3.56E-07	0.061913	0.0087059	0.020757	0.020757	4.49E-07	0.061913	0.020757

APPENDIX D

2016 SEIR GHG Analysis

4.4 Climate Change

The issue of climate change is not evaluated in the 1983 FEIR. The following discussion is provided to disclose the potential impacts of greenhouse gas emissions that would result from implementation of the proposed project. The estimate of project greenhouse gas emissions provided below is based on the analysis of greenhouse gas emissions included in the two October 19, 2015 memoranda prepared by the VCAPCD for the CRC Oil and Gas Project (PL13-0150). Mitigated Negative Declaration Addendum for Mirada Petroleum Project (Case No. LU11-0041) adopted by the Planning Commission on May 30, 2013. Staff of the Ventura County Air Pollution Control District (Chuck Thomas, pers. comm., March October 2015) has reviewed and found adequate the analysis presented herein.

4.4.1 Project Impact Discussion:

Utilizing the updated methodology that was employed to assess the greenhouse gas emissions of the oil and gas wells prepared in response to the administrative appeals of the approval of the PL13-0150 application, the annual Reactive Organic Compound (ROC) emissions for one new oil well is 0.365 tons of ROC per year (0.331 metric tonnes per year). The current proposed project (PL15-0060) involves the re-activation of three existing wells. Thus, the project involves an estimated increase of ROC emissions of 0.993 metric tonnes/year. According to the VCAPCD, a worst case estimate is that 85 percent of oil field emissions are methane, a greenhouse gas (GHG), and 10 percent are carbon dioxide (CO₂), also a GHG. The remaining five percent of oil field emissions are ROC.

The ratio of methane emissions to ROC emissions is 17:1 and the ratio of CO₂ to ROC emissions is 2:1. Using these ratios, the estimated methane emissions from the proposed project would be 16.9 metric tonnes/year of methane ($0.331 \times 3 \times 17 = 16.9$). The estimated CO₂ emissions from the proposed project would be 2.0 metric tonnes/year. ($0.662 \times 3 = 2.0$).

The global warming potential (GWP) of methane currently accepted for state and federal regulatory requirements (see Table A-1 of 40 CFR Part 98 Subpart A) is 25 times the GWP of carbon dioxide (CO₂). This means that one metric tonne of methane is equivalent to 25 metric tonnes of CO₂ equivalents (MTCO_{2e}), which is the standard unit for tracking GHG emissions. The direct, project-related GHG emissions are equivalent to 424 MTCO_{2e} [$(16.9 \times 25) + 2.0 = 424$]. (Refer to GHG emissions calculations in Appendix K.)

The project will cause indirect GHG emissions from generation of electricity to power the well pumps. Southern California Edison reported a GHG emission rate of 570 pounds CO_{2e} per megawatt-hour delivered in its 2014 Corporate Responsibility Report.

Using the worst-case assumptions of 150-horsepower motors for each pump and the maximum annual operating hours of 8,760 hours per year, the indirect greenhouse gas emissions were calculated. After unit conversions, this results in 762 MTCO₂e per year indirect GHG emissions from electricity generation for this project. It should be noted that the indirect GHG emissions from electricity generation are covered under California's GHG Cap-and-Trade requirements so they are already mitigated under that program. In addition, the VCAPCD has estimated that fluid hauling motor vehicle operations would contribute approximately 10 metric tons per year of GHG (refer to CalEEMod calculation summary in Appendix K).

As explained in the following discussion of climate change, this total level of direct and indirect GHG emissions, including fluid hauling motor vehicle operations, of up to 1,196 MTCO₂e per year, is below the applicable Threshold of Significance of 10,000 MTCO₂e per year.

Impacts involving greenhouse gas emissions pertain to changes in global climate. This is a cumulative effect that would not involve project-specific or local impacts. As indicated above, the estimated GHG emissions would be less than the applicable threshold. Thus, the contribution of the project to the impact of global climate change is not cumulatively considerable.

~~Utilizing the same methodology that was employed to assess the greenhouse gas emissions of the oil and gas wells included in the previous and separate Mirada Petroleum Project (Case No. LU11-0041), the annual Reactive Organic Compound (ROC) emissions for one new oil well is 0.48 tons/year (0.53 metric tons /year). The current proposed project (PL13-0158) involves the installation of up to three new wells and the re-drilling of an existing well. Thus, the project involves an estimated increase of ROC emissions of 2.1 metric tons/year. According to the VCAPCD, a reasonable estimate is that 90 percent of oil field emissions are methane, a greenhouse gas (GHG), and 10 percent are ROC. With these parameters, the estimated GHG emissions from the proposed project would be 18.9 tons/year of methane ($2.1 \times 9 = 18.9$). These methane emissions are equivalent to 397 metric tons/year of CO₂ ($18.9 \times 21 = 397$). If all six existing plus proposed oil wells are considered, the total GHG emissions from the project site will be an estimated 596 metric tons per year of CO₂ ($397 \times 6/4 = 596$). In addition, the VCAPCD has estimated that fluid hauling activities would contribute an estimated 34 metric tons per year of GHG (Chuck Thomas, VCAPCD, pers. commun.). As explained in the following discussion of climate change, this level (up to 630 metric tons per year) of greenhouse gas emissions is below the applicable Threshold of Significance of 10,000 metric tons/year of CO₂ equivalents.~~

~~Impacts involving greenhouse gas emissions pertain to changes in global climate. This is a cumulative effect that would not involve project-specific or local impacts. As indicated above, the estimated GHG emissions would be less than the applicable threshold. Thus, the contribution of the project to the impact of global climate change is not cumulatively considerable.~~

4.4.2 Background Information on Greenhouse Gas Emissions

Gases that trap heat in the atmosphere are known as greenhouse gases (GHGs). GHGs are emitted by natural processes and human activities. Examples of GHGs that are produced both by natural processes and industry include carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). GHGs in the atmosphere regulate the temperature of the earth's atmosphere. Without these natural GHGs, the Earth's surface would be about 61°F cooler (AEP 2007). However, emissions from fossil fuel combustion by humans have elevated the concentration of GHGs in the atmosphere to above current natural levels. Scientific evidence indicates a correlation between increasing global temperatures/climate change over the past century and human induced levels of GHGs. According to the United Nations' Intergovernmental Panel on Climate Change (IPCC) "Fourth Assessment Report, Climate Change 2007," most of the observed increase in global average temperatures since the mid-20th century is *very likely* due to the observed increase in anthropogenic concentrations of these three gases, collectively known as *Greenhouse Gases (GHG)*. The report states, "Global atmospheric concentrations of carbon dioxide, methane and nitrous oxide have increased markedly as a result of human activities since 1750 and now activities since 1750 far exceed pre-industrial values determined from ice cores spanning many thousands of years. The global increases in carbon dioxide concentration are primarily due to fossil fuel use and land use change, while those of methane and nitrous oxide are primarily due to agriculture" (IPCC 2007: Summary for Policymakers).

Some observed effects of climate change include shrinking glaciers, thawing permafrost, later freezing and earlier break-up of ice on rivers and lakes, a lengthened growing season, shifts in plant and animal ranges, and earlier flowering of trees (IPCC 2007). Other, longer term environmental impacts of global warming may include sea level rise, changing weather patterns with increases in the severity of storms and droughts, changes to local and regional ecosystems including the potential loss of species, and a significant reduction in winter snow pack. These GHG and other induced environmental changes are predicted to have severe negative environmental, economic, and social consequences around the globe. For example, one study estimates that the Sierra Nevada Mountains as a whole could lose as much as 50 percent of its average April snowpack compared to current levels by the end of the 21st century (California Department of Water Resources 2006). Current data suggests that in the next 25 years, in every season of the year, California will experience unprecedented heat, longer and more extreme heat waves, greater intensity and frequency of heat waves, and longer dry periods. More specifically, the California Climate Change Center predicted that California could witness the following events (Fried, et al 2006):

- Temperature rises between 3-10.5°F;

- 6-20 inches or more of sea level rise;
- 2-4 times as many heat wave days in major urban centers;
- 2-6 times as many heat related deaths in major urban centers;
- 1-1.5 times more critically dry years; and
- 10-55 percent increase in the expected risk of wildfires.

GHGs have varying amounts of global warming potential or GWP. ~~(GWP)~~. The GWP is the ability of a gas or aerosol to trap heat in the atmosphere. By convention, CO₂ is assigned a GWP of one. In comparison, CH₄ (methane or natural gas) has a GWP of 25 ~~24~~, which means that it has a global warming effect 25 ~~24~~ times greater than CO₂ on an equal-mass basis. To account for their GWP, GHG emissions are often reported as a CO₂ equivalent or CO₂e. ~~(CO₂e)~~. The CO₂e for a source is calculated by multiplying each GHG emission by its GWP, and adding the results together to produce a single, combined emission rate representing all GHGs.

To date, 12 states, including California, have set state GHG emission targets. Executive Order S-3-05 and the passage of AB 32, the California Global Warming Solutions Act of 2006, promulgated the California target to achieve 1990 GHG levels by the year 2020. This emissions reduction approach allows progress to be made in addressing climate change, and is a forerunner to the setting of emission limits. The Federal government and EPA have also begun regulating ~~the process to regulate~~ GHGs as pollutants (see discussion below).

4.4.3 Regulatory Setting

International Initiatives:

Over the past 15 years, various international, national, regional, state, and local initiatives have been adopted to address climate change. The foremost international climate change initiative is the United Nations Framework Convention on Climate Change (UNFCCC), commonly known as the Kyoto Protocol. Signed on March 21, 1994, the Kyoto Protocol calls for governments to gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change. There have been several international summits since Kyoto, most recently Copenhagen (December 2009), which seek to advance and cement climate change goals and programs, but no significant advances in this area have been accomplished since Kyoto.

Federal Initiatives and Regulations:

Although the U.S. has not ratified the Kyoto Protocol, it established a comprehensive policy to address climate change in 2002. The policy has three basic components: slowing the growth of GHG emissions; strengthening the science, technology, and institutions; and enhancing international cooperation. The federal government is implementing this policy through voluntary and incentive-based programs and has established major programs to advance climate technologies and improve climate science.

The U.S. government administers a wide array of public-private partnerships to reduce U.S. GHG intensity. These programs focus on energy efficiency, renewable energy, methane, and other non-carbon dioxide (non- CO₂) gases, agricultural practices and implementation of technologies to achieve GHG reductions. The United States Environmental Protection Agency (EPA) has the authority to regulate CO₂ or GHG emissions as an air pollutant under the federal Clean Air Act (42 U.S.C. § 7602(g)). The EPA also implements several voluntary programs that substantially contribute to the reduction of GHG emissions.

Final Mandatory Reporting of GHG Rule:

The EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule on October 30, 2009 (EPA 2009). The rule requires suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities with stationary sources that emit 25,000 metric tons or more per year of CO₂e emissions to collect emissions activity data and submit annual emissions reports to the EPA beginning with year 2010 operations. The rule does not apply to mobile sources of GHGs. This reporting system will provide a better understanding of GHG emission sources within the U.S. and it will guide the development of policies and programs to reduce GHG emissions. It was also intended to also will support implementation of the EPA Prevention of Significant Deterioration and Title V GHG Tailoring Rule. This rule has similarities to the California Regulation for the Mandatory Reporting of GHG Emissions, which also specifies a reporting threshold of 25,000 metric tons of CO₂e for stationary sources. Reporting of greenhouse gases by major sources in California is required by AB 32.

Prevention of Significant Deterioration (PSD) and Title V Greenhouse Gas Tailoring Rule:

On May 13, 2010, the EPA finalized the "GHG Tailoring Rule" to address GHG emissions from the largest stationary sources. The rule included includes a phased implementation schedule, where when Clean Air Act (CAA) permitting requirements for GHGs began will begin in January 2011 for large facilities that are already required to obtain PSD and Title V permits for other pollutants. However, on June 23, 2014, the Supreme Court of the United States (SCOTUS) vacated the GHG Tailoring Rule provisions which applied EPA permitting to sources solely due to their GHG emissions. In July 2011, CAA permitting requirements expanded to cover all new facilities with GHG emissions of at least 100,000 TPY CO₂e and modifications at existing facilities

that would increase these emissions by at least 75,000 TPY. The SCOTUS decision left intact the provisions applying PSD requirements to GHG emissions at sources subject to PSD due to increase in emissions of other PSD pollutants. These permits must demonstrate the use of best available control technologies (BACT) to minimize GHG emission increases when facilities are constructed or significantly modified.

California Initiatives and Regulations:

AB 32 - California Global Warming Solutions Act of 2006

The enactment of AB 32, "The California Global Warming Solutions Act of 2006" (Health & Safety Code § 38500 et seq), established a comprehensive program of regulatory and market mechanisms to achieve quantifiable reductions of GHGs within the state. The California Air Resources Board (ARB) is the primary state agency responsible for developing and maintaining a statewide inventory of GHG emissions and for formulating plans and action steps to reduce current GHG emissions statewide to 1990 GHG emission levels by the year 2020. AB 32 defines GHGs as CO₂, CH₄, N₂O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride.

From 2007 to 2009, the ARB promulgated several discrete early action measures to reduce GHG emissions prior to the full and final adoption of a plan to reduce aggregate California GHG emissions. Specifically, these discrete early action measures include (1) Green Ports/Electrification, (2) SmartWays truck efficiency, (3) PFCs in semiconductor manufacturing, (4) landfill gas capture, (5) tire inflation program, and (6) vehicle owner refrigerant (HFC-134e) servicing.

The Act instructed the ARB to establish a mandatory GHG reporting and verification program by January 1, 2008. In April 2008, the ARB finalized a regulation for the mandatory reporting of greenhouse gas emissions from major sources (ARB 2008c). In December 2008, the ARB approved the final Climate Change Proposed Scoping Plan ("Scoping Plan") which outlines the State's strategy for achieving the 2020 GHG emissions limit outlined under the law. The Scoping Plan includes recommendations for reducing GHG emissions from most sectors of the California economy.

On June 30, 2009, California was granted a CAA waiver (42 U.S.C. §7543(a)) from EPA to regulate automotive tailpipe CO₂ emissions. The ARB originally approved regulations to reduce GHG emissions from passenger vehicles in September 2004 based upon 2002 legislation, AB 1493 (Pavley). These regulations are expected to reduce passenger vehicle GHG emissions by approximately 22 percent in 2012 and 30 percent in 2016, while improving fuel efficiency and reducing motorists' costs.

In December 2009, the ARB promulgated a low carbon fuel standards (LCFS) in order to reduce the carbon intensity of transportation fuels used in California (i.e., gasoline, compressed natural gas (CNG), ethanol, liquefied natural gas (LNG), hydrogen, diesel, biodiesel, and electricity). It is expected that the LCFS will reduce carbon intensity from

the use of such fuels by an average of 10 percent per year. Carbon intensity is a measure of the GHG emissions associated with the combination of all the steps in the “lifecycle” of a transportation fuel.

AB 32 requires the ARB to incorporate the standards and protocols developed by the California Climate Action Registry (CCAR) into the state’s future GHG emissions reporting program, to the maximum extent feasible. The current GHG emission calculation methods used by CCAR are contained in *California Climate Action Registry—General Reporting Protocol*, Version 3.1, (CCAR 2009). This protocol categorizes GHG emission sources as either (1) direct (vehicles, on-site combustion, fugitive, and process emissions) or (2) indirect (from off-site electricity, steam, and co-generation).

Regulation for the Mandatory Reporting of Greenhouse Gas Emissions

As part of the AB 32 requirements, the ARB approved a mandatory GHG reporting regulation in December 2007, which became effective January 2009. The regulation requires operators of facilities in California that emit greater than 25,000 metric tons per year of CO₂ from stationary combustion sources in any calendar year after 2007 to report these emissions on an annual basis.

SB 97 – CEQA Guidelines for Greenhouse Gas Emissions

The Legislature also adopted Senate Bill 97 (SB 97) in 2007. As required by Under SB 97, the State Office of Planning and Research (OPR) developed is required to develop CEQA guidelines “for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions as required by this division.” (Pub. Res. Code § 21083.05(a)). According to the OPR website:

Those CEQA Guidelines amendments clarified several points, including the following:

- Lead agencies must analyze the greenhouse gas emissions of proposed projects, and must reach a conclusion regarding the significance of those emissions. (See CEQA Guidelines § 15064.4.)
- When a project’s greenhouse gas emissions may be significant, lead agencies must consider a range of potential mitigation measures to reduce those emissions. (See CEQA Guidelines § 15126.4(c).)
- Lead agencies must analyze potentially significant impacts associated with placing projects in hazardous locations, including locations potentially affected by climate change. (See CEQA Guidelines § 15126.2(a).)
- Lead agencies may significantly streamline the analysis of greenhouse gases on a project level by using a programmatic greenhouse gas emissions reduction plan meeting certain criteria. (See CEQA Guidelines § 15183.5(b).)

- CEQA mandates analysis of a proposed project's potential energy use (including transportation-related energy), sources of energy supply, and ways to reduce energy demand, including through the use of efficient transportation alternatives. (See CEQA Guidelines, Appendix F.)

As part of the administrative rulemaking process, the Natural Resources Agency developed a Final Statement of Reasons explaining the legal and factual bases, intent, and purpose of the CEQA Guidelines amendments. Other rulemaking documents can be accessed on the Natural Resources Agency's rulemaking website. The amendments to the CEQA Guidelines implementing SB 97 became effective on March 18, 2010.

OPR Technical Advisory - CEQA Review of Greenhouse Gases

On June 19, 2008, OPR issued a Technical Advisory, "CEQA AND CLIMATE CHANGE: Addressing Climate Change through California Environmental Quality Act" (CEQA) Review), to guide agencies before the final regulations are issued. This Technical Advisory noted:

Lead agencies should determine whether greenhouse gases may be generated by a proposed project, and if so, quantify or estimate the GHG emissions by type and source. Second, the lead agency must assess whether those emissions are individually or cumulatively significant. When assessing whether a project's effects on climate change are "cumulatively considerable" even though its GHG contribution may be individually limited, the lead agency must consider the impact of the project when viewed in connection with the effects of past, current, and probable future projects. Finally, if the lead agency determines that the GHG emissions from the project as proposed are potentially significant, it must investigate and implement ways to avoid, reduce, or otherwise mitigate the impacts of those emissions.

The Technical Advisory also noted the scientific knowledge and understanding of how best to perform this analysis was still evolving. The OPR Technical Advisory also explained that:

We realize that perhaps the most difficult part of the climate change analysis will be the determination of significance. Although lead agencies typically rely on local or regional definitions of significance for most environmental issues, the global nature of climate change warrants investigation of a statewide threshold of significance for GHG emissions. To this end, OPR has asked ARB technical staff to recommend a method for setting thresholds which will encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state. Until such time as state guidance is available on thresholds of significance for GHG emissions, we recommend the following approach to your CEQA analysis. Source:

www.opr.ca.gov/download.php?dl=ceqa/pdfs/june08-ceqa.pdf.

California Natural Resources Agency (Resources Agency) Final Statement of Reasons for Regulatory Action; Amendments to State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB 97 (December 2009)

Following extensive public review and comment on the proposed amendments to the CEQA Guidelines to address environmental impact analysis and mitigation of GHG emissions, the Resources Agency adopted amendments to the CEQA Guidelines (Title 14, Cal. Code of Regs., § 15000 et seq.) to comply with the mandate set forth in Public Resources Code section 21083.05.

4.4.3 Thresholds of Significance

CEQA Guidelines:

Due to the global nature of the effects of GHG emissions, the primary CEQA concern with GHG emissions is the cumulative impact of a project's incremental GHG emissions when viewed in connection to past, current and probable future project GHG emissions.

According to GHG amendments to the CEQA Guidelines, each public agency that is a CEQA lead agency needs to develop its own approach to performing a climate change analysis for projects that generate GHG emissions. A consistent approach should be applied for the analysis of all such projects, and the analysis must be based on best available information. For these projects, compliance with CEQA entails three basic steps:

- identify and quantify the GHG emissions;
- assess the significance of the impact on climate change; and
- if the impact is found to be significant, identify alternatives and/or mitigation measures that will reduce the impact below significance.

To date, in California, only a few public agencies have published CEQA thresholds of significance for project specific or cumulative anthropogenic GHG emissions. Moreover, how to address greenhouse gases under CEQA is evolving and fluid because formulating significance thresholds for CEQA purposes is especially problematic for GHG emissions. Unlike other air pollutant emissions that create impacts in local and regional air basins (i.e., air pollution nonattainment areas or toxic air contaminant hotspots), anthropogenic GHG emissions are implicated as a cause for *global climate change* regardless of their emission source or location. In addition, simply estimating GHG emissions from a specific project is not an adequate way to gauge the degree to which those emissions would contribute to global warming or climate change. Substantial additional scientific research and regulatory guidance are needed to determine whether a project's incremental GHG emissions impacts on climate change would be significant, and whether and how cumulative GHG emissions will affect global climate change.

The CEQA Guideline amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents. They do not, however, establish a specific threshold of significance. Public agencies are not required to adopt significance thresholds for any environmental issue area. The amendments do identify a general methodology for assessing the significance of impacts from project GHG emissions. Specifically, CEQA Guideline Section 15064.4 states:

“(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or

(2) Rely on a qualitative analysis or performance based standards.

(b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.”

These CEQA Guidelines amendments were adopted and became effective on March 18, 2010.

Air Pollution Control Agency GHG Thresholds:

Since the State CEQA Guidelines amendments were never intended to establish a uniform, widely accepted and adopted standard for determining the CEQA significance of project-specific GHG emissions, the ARB and some local air pollution control districts, such as the South Coast Air Quality Management District (SCAQMD), have been working to develop interim thresholds for evaluating GHG emissions. Both the ARB and SCAQMD prepared draft interim thresholds that would employ a tiered approach to determining significance.

In 2008, the ARB proposed an interim screening threshold of 7,000 metric tons (MT) CO₂e per year for industrial, non-transportation emissions, as well as a threshold that would evaluate compliance with “performance standards” for transportation and construction activities. The ARB has never adopted their interim thresholds. Also in 2008, the SCAQMD Governing Board adopted an interim GHG significance threshold for stationary air pollution sources, rules, and plans where the SCAQMD is the lead agency for CEQA purposes. The SCAQMD adopted a 5-tier approach for their interim threshold that includes consideration of direct, indirect, and, to the extent that information is available, life cycle emissions during project construction and operation. Construction emissions are amortized over the life of the project, defined as 30 years, and added to the operational emissions, which are then compared to the applicable interim GHG significance threshold tier. Tier 3 is a screening tier with a 10,000 MTCO₂e/yr threshold. It is based on the District’s policy objective of capturing 90 percent of GHG emissions from new industrial projects where the SCAQMD is the CEQA lead agency. The SCAQMD has not adopted GHG significance thresholds for projects where other agencies are the lead agency.

Both the Bay Area Air Quality Management District (BAAQMD) and the San Joaquin Valley Air Pollution Control District (SJVAPCD), the next two largest air pollution control districts in California following the SCAQMD, have also developed recommended thresholds of significance for land use projects.

On June 2, 2010, the BAAQMD’s Board of Directors unanimously adopted new and updated thresholds of significance to assist in the review of projects under the CEQA. The new thresholds included three sets of thresholds for GHGs: one for projects where the BAAQMD is the lead agency and two for land use development projects where other public agencies are the CEQA lead agencies.

The threshold for projects where the BAAQMD is the CEQA lead agency is 10,000 MTCO₂e/yr, the same as the SCAQMD’s Tier 3 screening threshold. The GHG thresholds for projects where other agencies are the CEQA lead agencies include a project-level (e.g., residential, commercial, industrial, and public land uses and facilities) threshold, and a plan-level (e.g., general plans and specific plans) threshold.

The BAAQMD’s project level threshold is compliance with a Qualified Climate Action Plan, or a numeric threshold of 1,100 MT CO₂e/yr, or a per capita efficiency metric of

4.6 MTCO₂e/SP/yr. [Note: "SP" refers to service population, which includes project residents and any employees that will work on the project site.] *~~(project residents + employees)~~. The threshold for plans is compliance with a qualified climate action plan (or similar criteria included in a general plan) or a per capita metric of 6.6 MTCO₂e/SP/yr. ~~(residents + employees)~~.

However, on March 5, 2012 the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted its latest set CEQA thresholds for various air pollutants, including for GHG emissions. The court did not determine whether the thresholds were valid on their merits, but found that the adoption of the thresholds was a project under CEQA. The court thus issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the District had complied with CEQA.

In view of the court's order, the BAAQMD is no longer recommending its new and updated air pollutant thresholds, including its GHG thresholds, as generally applicable measures of a project's significant air quality impacts. Lead agencies within the BAAQMD's boundaries will need to determine their own appropriate air quality thresholds of significance based on substantial evidence in the record. They may, however, continue to use the BAAQMD's 1999 set of thresholds as they find applicable. However, those thresholds are only for criteria air pollutants and do not include thresholds for GHG emissions.

SJVAPCD has chosen a slightly different approach to the CEQA significance threshold for GHG emissions. On December 17, 2009, the District adopted the guidance document: "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA," and the accompanying policy document: "District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency." The guidance and policy rely on the use of performance based standards, otherwise known as Best Performance Standards (BPS), to assess significance of project-specific greenhouse gas emissions on global climate change during the environmental review process required by CEQA.

Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual, is required to determine that a project would have a less than cumulatively significant impact. The guidance, however, does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project related impacts on global climate change.

On March 28, 2012, the San Luis Obispo Air Pollution Control District adopted CEQA greenhouse gas (GHG) emission thresholds for residential, commercial, and industrial projects. The thresholds were developed based on substantial evidence that adheres to

the requirements of Senate Bill 97 in a consistent and defensible manner, and ensures new development is able to provide its fair share of GHG reductions to meet the State's AB 32 GHG reduction goals.

The San Luis Obispo Air Pollution Control District adopted a menu approach for residential/commercial land use projects as the most effective approach for assessing the GHG emission impacts for development projects in San Luis Obispo County. Any of the following three options may be used to determine the significance of a residential or commercial project's GHG emission impacts: 1) Qualitative GHG Reduction Strategies (e.g., Climate Action Plans); or, 2) Bright-Line Threshold (1,150 MT CO₂e/yr); or, 3) Efficiency-Based Threshold (4.9 MTCO₂e/SP/yr). ~~(4.9 MT CO₂e/SP service population/yr).~~

The Santa Barbara County Air Pollution Control District (SBAPCD) adopted is developing GHG significance thresholds on April 30, 2015 for projects where the SBAPCD is the lead agency. Their ~~proposed~~ GHG threshold is 10,000 MTCO₂e/yr, the same as SCAQMD's Tier 3 screening threshold. ~~To date, the SBAPCD has not adopted its proposed GHG threshold.~~

The Ventura County Air Pollution Control District (VCAPCD) has not yet adopted any one of these approaches to setting a threshold of significance for land use development projects nor has it developed its own method of determining significance in the area of project GHG emissions. CEQA Guidelines §15064.7(c) states: *"When adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence."*

The recently adopted revisions to the State CEQA Guidelines, described above, added a new evaluation section for GHG emissions to the CEQA Guidelines initial study checklist (See Appendix G of the CEQA Guidelines). That section poses the following questions:

Would the project:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing emissions of GHGs?

Given the explicit requirements of these revised CEQA Guidelines, the County of Ventura has determined, with the assistance of VCAPCD, that it will use the following Threshold of Significance to determine the potential environmental impact significance of proposed GHG emissions. This Threshold was selected after an extensive review of

(1) federal, state, and regional agency GHG regulatory thresholds and (2) GHG CEQA thresholds of significance being developed or adopted by local air quality agencies in California. Thus, for purpose of the County's processing of discretionary permit applications, the Threshold of Significance (i.e. the point where a project's contribution to the impact of global warming is cumulatively considerable) is as follows:

A project has a cumulatively considerable impact on global climate change if it would cause an increase in GHG emissions in excess of 10,000 metric tonnes of CO₂e per year.

~~The project would generate GHG emissions (in CO₂e) in excess of 10,000 metric tons per year.~~

This threshold is consistent with CEQA significance thresholds adopted by the SCAQMD and the SBAPCD. ~~threshold proposals in the SCAQMD, the VCAPCD, and the SBAPCD.~~ Therefore, while not all local air quality districts have formally proposed or adopted this or any other threshold of significance for GHG emissions, it is considered a reasonably suitable threshold for this environmental impact analysis.

Because the project's anticipated annual direct and indirect GHG emissions (1,196 MTCO₂e per year) is far before this threshold of significance, no potentially significant impacts related to greenhouse gas emissions would occur with project implementation. Impacts would be less than significant (Class III).

~~(397 metric tons per year for the three new wells and one re-drilled well; 630 metric tons per year for all six wells at the facility and associated trucking) is far before this threshold of significance, no potentially significant impacts related to greenhouse gas emissions would occur with project implementation. Impacts would be less than significant (Class III).~~

4.5 Water Resources

4.5.1 Water Quantity

The operation of the oil and gas facility does not involve a long-term demand for water. Water will be consumed as part of the drilling process. It is estimated that approximately 3,500 barrels (147,000 gallons) of water will be consumed in the drilling of each new or modified well. In addition, about 20,000 gallons of water will be temporarily stored onsite for fire suppression purposes during drilling operations. Thus, a total of 14,000 barrels (588,000 gallons or 1.8 Acre-foot) of water will be consumed during well installation. Averaged over the 25-year life of the proposed project, the short-term water use would be equivalent to 0.07 Acre-Feet per year of water demand. With regard to groundwater quantity, the adopted County Initial Study Assessment Guidelines (ISAGs) state:

Final
Subsequent Environmental Impact Report
SCH # 2015021045

Appendix K

Memoranda prepared by the Ventura County Air
Pollution Control District

**VENTURA COUNTY
AIR POLLUTION CONTROL DISTRICT**
Memorandum

TO: Clerk of the Board – Ventura County Board of Supervisors **DATE:** October 19, 2015

CC: Brian Baca
RMA/Planning Division

FROM: Michael Villegas *MV*
Air Pollution Control Officer

SUBJECT: CALIFORNIA RESOURCES CORPORATION (CRC) APPLICATION TO RENEW
CUP 3344

As requested by the Ventura County Planning Department staff, Ventura County Air Pollution Control District (VCAPCD) staff reviewed the greenhouse gas (GHG) emissions estimates for Conditional Use Permit (CUP) 3344, which is a proposal for 19 oil wells. Moreover, Planning District staff provided District staff a Greenhouse Gas Emissions Technical Report prepared by InterAct (InterAct Report) at the request of CRC for the project (October 2015). InterAct is a local environmental consulting firm specializing in management of regulatory, permitting and compliance projects for oil and gas production facilities and drilling projects, with emphases on land use, air quality, water use and health risk assessments.

The InterAct Report estimates of GHG emissions from the project are based on several assumptions, which VCAPCD have determined to be reasonable and provides a conservative estimate of GHG emissions of the project. Since GHG emissions were not historically measured at the subject CRC facilities, the fugitive methane and carbon dioxide emissions from well operations were estimated based on the ratio of GHG emissions to regulated reactive organic gases (ROG) from oilfield production facilities.

VCAPCD staff recently conducted a review of its long-standing oil well ROG emission factor of two pounds of ROG per day per well during development of the upcoming 2016 Air Quality Management Plan. This review confirmed, by comparison to recent field data and modeling methods used by the Air Resources Board (ARB) and Santa Barbara County APCD, that the ROG emission factor used by the VCAPCD and for the InterAct report is appropriate.

The InterAct Report uses several “worst case” estimates in its analysis including methane content, ROG content and CO₂ content of the gas produced by the wells in this project. Using worst case estimates would be expected to significantly overestimate the GHG emissions from the proposed new CRC oil wells.

Clerk of the Board -- CUP 3344 (CRC)
October 19, 2015
Page 2

VCAPCD staff reviewed data from the California Air Resources Board (ARB) and the California Department of Oil, Gas and Geothermal Resources to determine the average methane emissions from oil wells statewide. Based on this review, VCAPCD staff determined the InterAct estimate of methane emissions from this project is more than four times the statewide average. Therefore, VCAPCD believes the estimate of methane emissions for this review is very conservative and thus overestimates the methane emissions that will occur as a result of the proposed 19 oil wells.

Since methane constitutes the vast majority of the direct GHG emissions from oil production activities, VCAPCD staff reviewed currently accepted global warming potential (GWP) estimates for methane. USEPA and ARB currently use a GWP for methane of 25 times that of carbon dioxide (CO₂) over 100 years for the EPA national inventory and the 2015 California GHG Inventory, respectively. This GWP value is based on the fourth assessment report by the Intergovernmental Panel on Climate Change (IPCC) issued in 2007 and is consistent with the First Update to the AB32 Scoping Plan (May 2014).

IPCC issued its fifth assessment report in 2014, which increased the GWP estimate of methane to 34 times that of CO₂ over 100 years. Others have advocated for shorter GWP time frames which would increase the GWP of methane and methane emission estimates even further. However, for official inventories and impact assessments, VCAPCD recommends using the GWP of 25 currently used by USEPA and ARB for regulatory inventories and related activities.

Based on these assumptions, VCAPCD staff conducted an independent analysis of the GHG emissions increase from this project. The VCAPCD analysis of project GHG emissions correlated very closely with the analysis presented in the InterAct Report. Therefore, VCAPCD staff agrees with the conclusion of the InterAct Report that the GHG emissions increase of the project will be less than significant.

If you have any questions, please contact me at (805) 645-1440.

**VENTURA COUNTY
AIR POLLUTION CONTROL DISTRICT**

Memorandum

TO: Mike Villegas
Air Pollution Control Officer

DATE: October 19, 2015

FROM: Tyler Harris 
Air Quality Engineer

SUBJECT: CALIFORNIA RESOURCES CORPORATION (CRC) APPLICATION TO
RENEW CUP 3344 – INDIRECT GREENHOUSE GAS (GHG) EMISSIONS
AND GHG SIGNIFICANCE THRESHOLDS

As requested by the Ventura County Planning Department staff, Ventura County Air Pollution Control District (VCAPCD) staff calculated estimates of the greenhouse gas (GHG) emissions increase for Ventura County Conditional Use Permit (CUP) 3344, which is a proposal for 19 new oil wells.

VCAPCD staff used assumptions provided by Planning Department staff and detailed in a Greenhouse Gas Emissions Technical Report prepared by InterAct (InterAct Report) at the request of CRC for the project (October 2015). The InterAct Report stated the project included 18 new oil wells, so VCAPCD recalculated emissions based on the correct project description of 19 new oil wells.

Using the site-specific assumptions provided, I estimated the proposed wells will each emit 5.64 metric tonnes (MT) of methane and 0.664 MT of CO₂ per year. It should be noted the statewide average methane emissions from oil wells is approximately 1.27 MT per year, so this estimate is over four times the statewide average.

GHG emissions are calculated in carbon dioxide equivalents (CO₂e) for emissions inventory and regulatory purposes. The United States Environmental Protection Agency (USEPA) and California Air Resources Board (CARB) currently use a global warming potential (GWP) of 25 pounds CO₂e per pound of methane for inventory and regulatory purposes. Therefore, direct GHG emissions from the proposed 19 oil wells will increase 2,691 MT CO₂e per year if the project is approved and fully implemented.

The InterAct Report also included information on the indirect GHG emissions from the generation of grid electricity used to power the proposed oil well pumps. Using the assumptions in the InterAct Report and correct number of proposed oil wells, I estimated the indirect GHG emissions increase as 5,968 MT CO₂e per year.

Mike Villegas – CUP 3344 (CRC) GHG Emissions
October 19, 2015
Page 2

However, these indirect emissions are covered under California's Cap and Trade (C&T) Regulation. The cap and trade program is part of the state of California's compliance with Assembly Bill 32, the Global Warming Solutions Act of 2006. All GHG emissions from entities covered under C&T should be considered fully compliant with the California Environmental Quality Act (CEQA) and fully mitigated.

The C&T program has undergone full CEQA review and survived multiple court challenges. The C&T program's GHG emissions cap is required by law to be the maximum technically feasible and cost-effective emissions reductions. In addition, all increases in GHG emissions at covered entities fall under the cap and so must be offset elsewhere for the whole program to maintain compliance. The cap also decreases with time, forcing additional emissions reductions from all covered GHG sources.

It is therefore appropriate to consider GHG from grid electricity used at a source to be fully mitigated and such indirect GHG emissions should not be considered when determining the significance of climate impacts from a project. Only the 2,691 MT CO₂e per year direct GHG emissions increase from the proposed project should be considered when determining if the proposal will have a significant impact on the environment.

Ventura County and VCAPCD have not adopted significance thresholds for GHG to determine if a project will cause significant adverse impacts related to a CEQA global climate change analysis. However, a few air districts and one neighboring county have adopted significance thresholds for CEQA GHG analyses. The most restrictive by far is the threshold adopted by Santa Barbara County which has adopted a significance threshold of 1,000 MT CO₂e per year. The most common CEQA GHG significance threshold is 10,000 MT CO₂e per year, which has been adopted by the South Coast and Sacramento Metropolitan Air Quality Management Districts, and Santa Barbara County and San Luis Obispo County Air Pollution Control Districts.

In contrast to these stringent thresholds, CARB has set the threshold for inclusion in the GHG Cap and Trade Program at 25,000 MT CO₂e per year facility-side, and USEPA has set a regulatory applicability threshold for GHG at an increase of 75,000 MT CO₂e per year. Antelope Valley APCD and Mojave Desert APCD have both adopted 100,000 MT CO₂e per year as their CEQA significance threshold.

While Ventura County regulatory agencies have not formally adopted greenhouse gas thresholds, they have used the threshold of 10,000 MT CO₂e per year to evaluate the significance of some previous projects in approved CEQA documents. Therefore, I recommend maintaining consistency with previous projects and comparing the GHG emissions increase from this proposal to the 10,000 MT CO₂e per year threshold. Since the estimated GHG increase from this project is 2,691 MT CO₂e per year, the impact is not significant.

GREENHOUSE EMISSIONS TECHNICAL REPORT

In Support of California Resources Corporation Application to Renew CUP 3344

Prepared for:



270 Quail Court, Suite 201
Santa Paula, CA 93060

Prepared by:

InterAct

4567 Telephone Rd., Suite 203
Ventura CA 93003
Contact: U. Micovic
Office: 805-658-5600, Cell: 805-218-4774

October 2015

1.0 Background

California Resources Corporation (CRC) has applied to the County of Ventura to renew Conditional Use Permit (CUP) 3344, because the previously approved CUP was expiring. The previously approved CUP contained allowance for 36 oil and gas wells, 18 of which have not been drilled at the time the permit expired. However all 36 wells, including the undrilled wells, have been approved through the California Environmental Quality Act (CEQA) review and approval process by the County (1978 and 1984 CEQA Documents).

It is understood that the previous CEQA evaluations have not addressed Greenhouse Gas (GHG) emissions from project because at the time the GHG was not part of the required evaluation. This report is prepared to demonstrate that the GHG emissions from the proposed project are below the current CEQA threshold and therefore the project does not have a significant impact to the Air Quality.

2.0 Greenhouse Gas (GHG) CEQA Threshold and Impacts Evaluation

GHG emissions are measured in terms of carbon dioxide (CO₂) equivalents (CO₂e). The current Ventura County CEQA threshold for GHGs is 10,000 Metric tons per year (MT/year) of CO₂e incrementally added by a proposed project. This threshold is also approved by the Ventura County Air Pollution Control District (VCAPCD).

Under CEQA, the existing operations or conditions are considered a baseline for a proposed project. Additional impacts from the proposed project activities are evaluated against the approved CEQA threshold. If impacts are below the threshold, the project impacts are deemed as less than significant under CEQA.

3.0 Estimation of the Greenhouse Gas (GHG) Emissions from Project

The CUP 3344 renewal project proposes drilling and operation of a maximum of 18 new oil and gas wells. The proposed project will not add any operational facilities; it does not propose additional operational traffic, nor traffic from routine maintenance. The wells will use electricity to power the pumping units that are needed to pump the oil and gas to the surface. It is assumed as a worst case scenario that each pumping unit would be a 150 horsepower (HP) motor.

Therefore, the only source of GHG emissions from the project would be from the additional wells: fugitive emissions of gas and indirect emissions due to electricity consumption by the pumping units.

3.1 GHG Emissions from Fugitive Leaks

Emissions from oil and gas wells occur through fugitive leaks in the valves and connections that are part of wells construction. Those well emissions are in the form of produced gas escaping through the minute leaks that are inherent to valves and connections and are accounted for and permitted by VCAPCD. Produced gas from an oil and gas well has methane (CH₄) as the majority compound. It also has Reactive Organic Compounds (ROCs) regulated by the VCAPCD, and it has carbon dioxide (CO₂). Methane and CO₂ are GHGs that have Global Warming Potential (GWP). GWP of CO₂ is assigned a value of one (1). The US EPA identifies methane as a GHG and assigns it a GWP of 25 times that of CO₂ (<http://www3.epa.gov/climatechange/glossary.html#M>):

"Methane (CH₄): A hydrocarbon that is a greenhouse gas with a global warming potential most recently estimated at 25 times that of carbon dioxide (CO₂). Methane is produced through anaerobic (without oxygen) decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion. The GWP is from the IPCC's Fourth Assessment Report (AR4)"

Knowing how much methane and CO₂ are emitted from fugitive leaks of the proposed wells, we can estimate the GHG emissions from those proposed wells and thus from the proposed project.

The VCAPCD dictates that emissions of ROCs from an oil and gas well be estimated at 2 lbs/day (see Attachment 1). As a worst case scenario, it is assumed that ROC portion in the produced gas is 5% (although it is typically higher). As a worst case scenario, it is assumed that there is 85% methane in the produced gas (for comparison, Santa Barbara APCD lists a worst case scenario of methane portion in produced gas at 84%), although gas analyses from the CRC leases typically have much lower percentage of methane. As a worst case scenario, it is assumed that there is 10% of CO₂ in the produced gas. Therefore, knowing emissions of ROCs from the wells, we can calculate emissions of methane and CO₂ from those wells

Emissions of the GHG from the project are estimated as follows:

$$\text{CH}_4 = (\text{ROC}) \times (\text{CH}_4 \text{ at } 85\% \text{ of total emissions}) / (\text{ROC at } 5\% \text{ of total emissions})$$

$$\text{CO}_2 = (\text{ROC}) \times (\text{CO}_2 \text{ at } 10\% \text{ of total emissions}) / (\text{ROC at } 5\% \text{ of total emissions})$$

$$\text{GHG Emissions} = [(\text{Emissions of CH}_4) \times (\text{GWP of } 25)] + (\text{Emissions of CO}_2)$$

3.2 Indirect GHG Emissions from Electricity Consumption

As a worst case scenario, it is assumed that each well will be equipped with a pumping unit with a 150 HP electrical motor (the majority of wells operate with 50 HP motors). The likely electricity supplier to the proposed project is So Cal Edison, which lists its current electricity GHG emissions as 705 CO₂e Emissions from Delivered Electricity Rate (lbs/MWh) (https://www.sce.com/wps/wcm/connect/68145014-2eba-40c2-8587-6482ce056977/CRR_08202013.pdf?MOD=AJPERES&ContentCache=NONE).

Thus electricity related GHG emissions from the 18 proposed wells would be:

$$\begin{aligned} &705 \text{ lbs/CO}_2\text{e per MWh} \times 18 \text{ wells} \times 150 \text{ HP/well} \times 0.746 \text{ HP/kWh} / 1000 \text{ kW/MW} \times 8700 \text{ hrs/yr} = \\ &= 5,654 \text{ MT CO}_2\text{e/year} \end{aligned}$$

3.3 Total GHG Emissions

The emissions factors, calculations, references and assumptions are shown in Figure 1 below. It is demonstrated that the combined emissions of methane CO₂ equivalents and CO₂ from the proposed project are below the CEQA threshold for GHGs and thus the project GHG impacts are less than significant.

4.0 Evaluation Preparer

This evaluation is prepared by Uliana Micovic of InterAct. Her credentials are presented in Attachment 2.

Figure 1 Project Worst Case GHG Emissions Estimates**Fugitive Leaks Emission Factors and Percentages**

Oil & Gas Well ROC EF, lbs/day-well*	ROCs % in produced gas	Methane % in produced gas	CO2 % in produced gas	Number of Wells**
2.00	5%	85%	10%	18

Methane (CH4) Emissions from Fugitives

Methane emissions, lbs/day/well	Methane emissions, all wells, lbs/day	Methane Emissions tons/year	Methane Emissions, MT/year	CH4 Global Warming Potential (CO2e)****	Methane CO2e Emissions, MT/year
34.00	612.00	111.69	101.54	25.00	2538.41

Carbon Dioxide (CO2) Emissions from Fugitives

CO2 Emissions, lbs/day/well	CO2 Emissions, all wells, lbs/day	CO2 Emissions, tons/year	CO2 Emissions, MT/year	CO2 Global Warming Potential ****	CO2e Emissions, MT/year
4.00	72.00	13.14	11.95	1.00	11.95

Indirect GHG Emissions from Electricity

HP of a well motor	HPs for Motors on all wells	HP-hours per year	kWh/year from all Motors	MWh/year from all Motors	CO2e Emissions, MT/year
150.00	2700.00	23,652,000	17644392	17644	5,654.23

GHG Emissions (Fugitive Leaks + Indirect from Electricity)

GHG Total Emissions (CO2e of CH4) + (CO2), MT/yr	CEQA Threshold for CO2e, MT/yr	Project Below threshold?
8,205	10,000	Yes

Factors and Coefficients

2 lbs/day

* Emission Factor for ROCs from Oil & Gas Well

Reference: VCAPCD PEETS

18 ** Number of new Wells on CUP 3344

84% *** SBCAPCD Definition of ROG

25 **** Methane Global Warming Potential

<http://www3.epa.gov/climatechange/glossary.html#C>

365 days/yr

2,000 lbs/ton

2,200 lbs/Metric Tonne or lbs/MT

0.746 kWh is equal to 1 hp-hr

705 lbs/MWH (per SCEdison)

ATTACHMENT 1

VCAPCD PEETS Emissions Factors

PEETS Emission Factors

SCC 31000122	Crude Oil Well	Pounds per Well-Day	Date of Change
Reactive Organics		2	7/30/1997
VCAPCD factor			

ATTACHMENT 2
Uliana Micovic Credentials
as an Air Quality Engineer

ULIANA MICOVIC



POSITION

Regulatory Services Manager / Sr. Air Quality Engineer

EXPERIENCE

Management of regulatory, permitting / compliance projects for oil and gas production facilities and drilling projects, with emphases on land use, air quality, water use, and health risk.

Over 17 years of experience in project management, permitting, compliance, and environmental analysis for the oil and gas industry. CEQA / NEPA specialist, concentrating in air quality, greenhouse gases, water quality, safety, and health risk assessments for oil and gas and other industrial projects. Experienced in injection well applications and Well Stimulation notices for hydraulic fracturing projects. Knowledgeable in the local, state, and federal air and water quality control rules and policies, and emission control technologies, land use issues and permitting strategies. Hands-on compliance with a variety of regulatory requirements, including special and conditional use permits, and CEQA mitigation measures. Additionally, 6 years of experience in analytical laboratory analysis requirements & methods (air and water quality and oil fingerprinting).

REPRESENTATIVE EXPERIENCE

Air Quality Evaluations, Permitting and Compliance

Preparation of Air Quality Impact assessments for Oil and Gas and other projects, including Greenhouse Gasses (GHGs):

- 2002 Tranquillon Ridge Project EIR (Nuevo).
- Paredon Project EIR (Venoco)
- Draft Elwood Full Field Development EIR (Venoco)
- Draft Carpinteria Field Development EIR (POOI)
- Draft EMT Lease Extension EIR (Venoco)
- Nacimiento Water Project EIR

Internal verifications of GHGs emissions for oil and gas facilities.

Analysis of various air quality control districts' regulations with respect to emissions control technologies for fuel burning and oil storage equipment.

Health Risk Assessments (HRA's) of oil production facilities.

Strategy development on meeting regulations with the best economic outcome for the client. Analysis of facility equipment, its installation schedule and sizing with the goal of minimizing or avoidance of emissions offsets payments. Comparative cost vs. emissions analysis for various Best Available Control Technologies (BACT).

Evaluation of drilling emissions, and preparation of Drilling Emission Reduction & Monitoring Plans. Emission Reduction Credits (ERCs) applications, budgeting & procurement.

ULIANA MICOVIC

Federal Permits (Title V, Part 70) permitting/compliance, permit application preparation, permit modifications.

Various Compliance Plans development and compliance: Inspection and Maintenance (I&M) Programs and Operator Management Plans for fugitive emissions and engines. Source Test Plans. Meter calibration and maintenance plans.

Meteorological station design per the EPA and SCAQMD requirements. Met data analysis and validation per the EPA's data quality assurance requirements.

CEQA / NEPA Projects

As Project Manager, managed all aspects of permit applications requiring CEQA, assisted clients in strategizing and agency communications.

As Principal Investigator, conducted CEQA / NEPA environmental analyses of oil and gas, and other industrial projects. Conducted air quality analysis (including GHGs), developed emission inventories and emissions reduction measures. Prepared Health Risk Assessments (HRA) according to the toxic emissions regulations. Performed noise propagation modeling, noise & vibration measurements and analysis (including drilling rig vibration analysis). Developed mitigation measures to decrease industrial noise, noise from traffic and project noise, as well as development of traffic mitigation measures, fire protection and safety measures for oil and gas and industrial projects. Prepared Conditional Use Permit applications. Prepared Hazards consequence analyses, and fault tree analyses. Performed process safety, hazards/risk assessments.

Oil and Gas Production Facilities and Drilling projects in California

Management/leading role in land use permitting of various projects, including air quality, conditional use and special use permit applications, permit modifications/renewals, zoning clearances, agency communications, CEQA review and mitigation measures issues and compliance; preparation of compliance plans and operator training materials, environmental documents audits/review in behalf of oil and gas operators.

Oil and Gas Facilities in the Gulf of Mexico

Permitting of decommissioning and removal of offshore platforms and pipelines (W&T, Louisiana). Regulatory and environmental due diligence review of an onshore gas plant and associated off- and onshore pipelines to assess liabilities for the future abandonment and removal (Yellowhammer Gas Plant, Alabama).

Industrial Projects in California

Conducted technical studies and development of SOPs as part of a comprehensive Risk Management Program (RMP) for 14 water and sewer treatment facilities that use chlorine and/or sulfur dioxide. Interacted with operating personnel to define operating tasks and with maintenance personnel to improve the procedures in the computer-based maintenance system. Participated in development of Process Safety and RMP programs for several other water treatment and refrigeration facilities that use anhydrous ammonia.

Developed risk management programs according to California Accidental Release Program and US EPA RMP. Coordinated and monitored a technical validation & testing program of a cutting edge hazardous materials remediation technology.

ULIANA MICOVIC



Analytical Laboratory Experience

Improvement / development of adsorbents manufacturing methods. Scale-up to production in accordance with ISO 9000. Development of SOPs and QC/QA methods. Design (materials flow, operation logistics) of an adsorbents manufacturing facility (2000 sq. ft.). Development of gas chromatography and gas purification equipment. Development of GC and GC/MS applications for U.S. EPA, USP, & ASTM methods. Market and customer database analysis; customer relations; promotional literature development.

PROFESSIONAL HISTORY

InterAct (formerly Pacific Management Tech. Inc. & Fairweather Pacific)	2007 – present
<i>Staff Engineer</i> , Marine Research Specialists (MRS), (formerly Arthur D. Little)	1998 – 2007
<i>Research Engineer</i> , Supelco (Analytical laboratory supplies manufacturer)	1994 – 1998

EDUCATION AND TRAINING

MS, Chemical Engineering, Michigan Technological University, Houghton, MI – 1993

BS, Chem. Eng., Mendeleev Institute of Chemical Technology, Moscow, Russia – 1991

PASSPORT industrial facility safety training

Fundamentals of Project Management, Fred Pryor Educational Resources, Inc.

Thermal Hazards Evaluation and Pressure Relief Design, Arthur D. Little, Inc.

Business Writing Course, Fred Pryor Educational Resources, Inc.

Marketing Management Certificate, Pennsylvania State University

Fundamentals of Glass Technology, Center for Professional Advancement

Business Environment Laws, Pennsylvania State University

OTHER

Professional Affiliations

Member of American Institute of Chemical Engineers (AIChE) since 1993

Presentations

"Oilfield Produced Water – Overview", EUCI Webinar, March 2015.

"Performing Well Integrity Reviews for Injection and Hydraulic Fracturing Permit Approval", at State Lands Commission "Prevention First" Conference, Oct 2014.

"Examining How to Streamline the Process for Attaining a UIC Permit to Allow Continued Production", at California Water Management 2014 Conference.

Mirada Agnew Lease Greenhouse Gas Emissions Calculations

Mirada Petroleum, PL13-0158
VCAPCD analysis, March 2016
Page 1 of 2

VCAPCD Emission Factor Conversion

VCAPCD ROC emission factor	2	lb ROC/well/day	
ROC emissions increase	0.365	short tons ROC/well-year	
conversion to metric tonnes	0.9072	MT/short ton	MT = metric tonnes = 1,000 kg = 2,200 lb
ROC emissions increase per well	0.3311	MT ROC/well-year	

Direct Project GHG Emissions

number of wells **3**

Methane Emissions	estimated ROC emissions	0.3311	MT ROC/well-year
	methane content of produced gas	85%	worst case from InterAct report
	ROC content of produced gas	5%	worst case from InterAct report
	ratio of methane emission to ROC	17	
	estimated methane emissions per project well	5.63	MT CH ₄ /well-year
	estimated project methane emissions increase	16.9	MT CH ₄ /year

California average CH₄ emissions per well (2005 data)
1.27 MT CH₄/well-year
4.43 ratio of project (worst case) to average

CO₂ Emissions	estimated ROC emissions	0.3311	MT ROC/well-year
	ROC content of produced gas	5%	worst case from InterAct report
	CO ₂ content of produced gas	10%	worst case from InterAct report
	ratio of CO ₂ emissions to ROC	2	
	estimated CO ₂ emissions per well	0.662	MT CO ₂ /well-year
	estimated project CO ₂ emissions increase	2.0	MT CO ₂ /year

Global Warming Potential of Methane	Total Mirada Agnew Lease Project Direct CO ₂ e (CO ₂ + CH ₄) Emissions Increase (MT/year)
25	424
28	475
34	576
36	610
72	1,218
86	1,454
100	1,691

Mirada Agnew Lease Greenhouse Gas Emissions Calculations

Mirada Petroleum, PL13-0158
VCAPCD analysis, March 2016
Page 2 of 2

Indirect GHG Emissions from Electric Pumps (subject to cap and trade program)

pumping unit power	150	hp (worst case estimate from InterAct report)
indirect GHG emission factor	705	lb CO ₂ e/MWh delivered (2012 Sustainability Report)
conversion	0.000746	MW/hp
maximum annual hours of operation	8,760	hr
annual indirect GHG emissions per well	314.1	MT CO ₂ e/well-year
indirect GHG emissions increase from project	942.4	MT CO ₂ e/year

Total (Direct + Indirect) Project GHG Emissions

Global Warming Potential of Methane	Total (Direct + Indirect) Mirada Agnew Lease Project CO ₂ e (Emissions Increase (MT/year)
25	1,367
28	1,417
34	1,519
36	1,552
72	2,160
86	2,397
100	2,633

Mirada Agnew Lease .8 HDD
Ventura County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Commercial	1.00	User Defined Unit	5.00	50.00	10

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2014
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - per applicant

Vehicle Trips - per applicant

Vehicle Emission Factors - per applicant

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017																332.0431
2018																25.2144
Total																357.2575

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017																332.0428
2018																25.2144
Total																357.2571

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area																2.0000e-005
Energy																0.0000
Mobile																9.7576
Waste																0.0000
Water																0.0000
Total																9.7576

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area																2.0000e-005
Energy																0.0000
Mobile																9.7576
Waste																0.0000
Water																0.0000
Total																9.7576

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Appendix C

Traffic Study

Associated Transportation Engineers

AGNEW OIL LEASE DEVELOPMENT MODIFIED CUP VENTURA COUNTY, CALIFORNIA

TRAFFIC STUDY



October 2, 2019

ATE Project 18070

Prepared for:

Carbon California
270 Quail Court, Suite "B"
Santa Paula, California 93060

Prepared by:

Darryl F. Nelson
Under the direction of
Richard L. Pool, P.E.



ASSOCIATED TRANSPORTATION ENGINEERS

100 N. Hope Avenue, Suite 4, Santa Barbara, CA 93110-1686 • (805) 687-4418 • FAX (805) 682-8509



Since 1978

ASSOCIATED TRANSPORTATION ENGINEERS

100 N. Hope Avenue, Suite 4, Santa Barbara, CA 93110 • (805) 687-4418 • FAX (805) 682-8509

Richard L. Pool, P.E.
Scott A. Schell, AICP, PTP

October 2, 2019

Ms. Jane Farkas
Carbon California
270 Quail Court, Suite "B"
Santa Paula, CA 93060

TRAFFIC STUDY FOR THE AGNEW OIL LEASE MODIFIED CUP, VENTURA COUNTY, CALIFORNIA

The following report presents the findings of the traffic study prepared by Associated Transportation Engineers (ATE) for the Agnew Oil Lease Modified Conditional Use Permit (CUP) application. It is our understanding that the traffic analysis will be used by Ventura County to assess the traffic impacts associated with the project, and to process the CUP modification application.

We appreciate the opportunity to assist Carbon California with this project.

Associated Transportation Engineers

Richard L. Pool, P.E.
President



TABLE OF CONTENTS

INTRODUCTION	1
PROJECT DESCRIPTION	1
EXISTING CONDITIONS	1
Street Network	1
Roadway Operations	3
Intersection Levels of Service	3
VENTURA COUNTY GENERAL PLAN POLICIES	7
PROJECT-SPECIFIC IMPACT ANALYSIS	9
Project Trip Generation	9
Project Trip Distribution and Assignment	10
Existing + Project Roadway Operations	10
Existing + Project Intersection Levels of Service	13
State Route 150/Koenigstein Road Project Site Access	13
CUMULATIVE (YEAR 2030) CONDITIONS	17
Cumulative Roadway Operations	17
Cumulative Intersection Levels of Service	19
SHORT-TERM DRILLING IMPACTS	22
REFERENCES AND PERSONS CONTACTED	23
TECHNICAL APPENDIX	24

LIST OF TABLES

Table 1	Existing Roadway Levels of Service	3
Table 2	Existing Intersection Levels of Service	6
Table 3	Minimum Acceptable Level of Service for Roadway Segments	7
Table 4	Thresholds of Significance for Changes in Levels of Service at Intersections	8
Table 5	Project Trip Generation	9
Table 6	Existing + Project Roadway Levels of Service	10
Table 7	Existing + Project Intersection Levels of Service	13
Table 8	Signal Warrant Results - State Route 150/Koenigstein	16
Table 9	Cumulative Roadway Level of Service	19
Table 10	Cumulative + Project Roadway Level of Service	19
Table 11	Cumulative Intersection Levels of Service - A.M. Peak Hour	21
Table 12	Cumulative Intersection Levels of Service - P.M. Peak Hour	21

LIST OF FIGURES

Figure 1	Existing Street Network/Project Site location	2
Figure 2	Existing Traffic Volumes	4
Figure 3	Existing Lane Geometry and Traffic Controls	5
Figure 4	Project Trip Distribution and Assignment	11
Figure 5	Existing + Project Traffic Volumes	12
Figure 6	Cumulative Traffic Volumes	18
Figure 7	Cumulative + Project Traffic Volumes	20

INTRODUCTION

The following traffic and circulation study contains an analysis of the potential traffic and circulation impacts associated with the continued operation of the Agnew Oil Lease site located north of Ste Route 150 and west of Koenigstein Road in the Upper Ojai Valley. The traffic and circulation study provides information relative to Existing, Existing + Project and Cumulative traffic conditions in the vicinity of the project site. The project site access via the State Route 150/Koenigstein Road intersection was also evaluated.

PROJECT DESCRIPTION

The Project is requesting a modified Conditional Use Permit (CUP) authorizing the continued operation of an existing oil and gas facility for an additional 25 years, the installation and operation of three new oil wells and the re-drilling of one existing well and use of Koenigstein Road for access to the project site. The existing CUP-3543 permits 12 tanker truck loads per week (24 truck trips per week). The modification would reduce the number of tanker truck loads to 8 per week (16 truck trips per week). The current CUP does not limit the number of vehicle trips associated with the maintenance and operation of the production facilities, the applicant proposes to limit the traffic to 14 maintenance visits per week (28 maintenance vehicle trips per week). The current CUP authorizes access to the facility during drilling and production operations from private road connected to State Route 150 at a point southwest of the Project site. This private roadway was destroyed during flooding in 1995. Since that time Koenigstein Road has been used to serve the oil production facility as there is no other access road. The modification would authorize the use of Koenigstein Road for access to State Route 150 during drilling and production. A private road connected to Koenigstein Road would provide direct access to the Project site. The Project site location is illustrated on Figure 1.

EXISTING CONDITIONS

Street Network

The Project site is served by a circulation system comprised of highway and local roads which are illustrated on Figure 1 and discussed in the following text.

State Route 150, located south of the Project site is a 2-lane conventional highway that connects U.S. Highway 101 in Santa Barbara County to State Route 126 in Ventura County, linking the cities of Carpinteria, Ojai and Santa Paula. State Route 150 (Ojai Avenue) is a principal east-west arterial through the City of Ojai. The unsignalized State Route 150/Koenigstein Road intersection will provide access to the Project site.

Koenigstein Road, is a 2-lane north-south roadway that extends north from State Route 150. Koenigstein Road provides access to several private residences and existing oil and gas leases in the Ojai Oil Field. A private road connection to Koenigstein Road will continue to provide direct access to the Project site.



EXISTING STREET NETWORK/PROJECT SITE LOCATION

FIGURE 1

EKM - ATE#18070

Roadway Operations

Existing average daily traffic (ADT) volumes for the study-area roadway segments are illustrated on Figure 2. The roadway segment volume was collected by ATE in May of 2018. In determining the operational characteristics of these roadway segments, "Levels of Service (LOS) "A" through "F" are applied, with LOS "A" indicating very good operations and LOS "F" indicating poor operations (more complete definitions of levels of service are contained in the Technical Appendix).

Levels of Service for the study-area roadway segments were determined based on Ventura County roadway engineering design capacities, which are summarized in the Technical Appendix. The results are presented in Table 1.

Table 1
Existing Roadway Segment Levels of Service

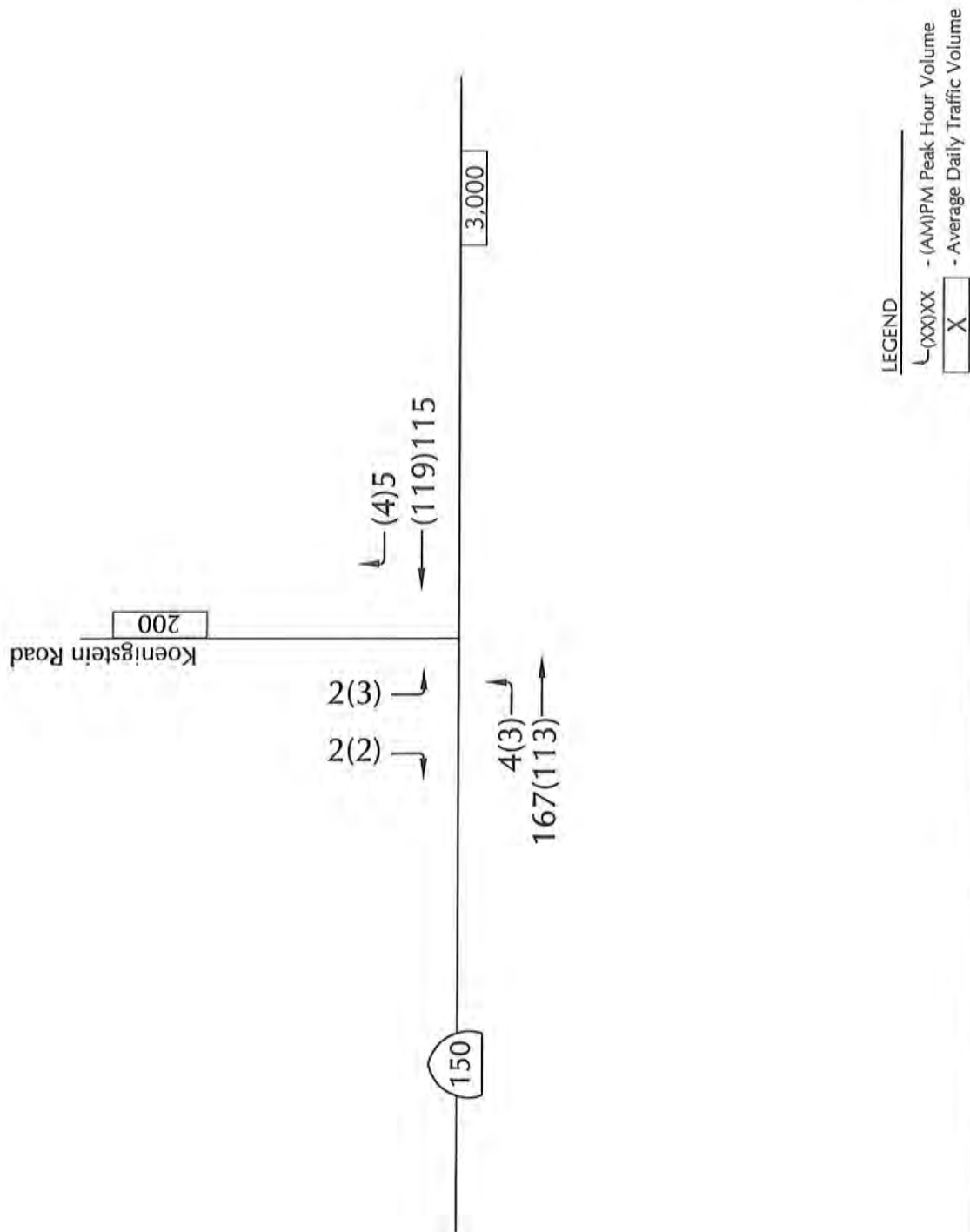
Roadway	Classification	Geometry	ADT	LOS E Capacity	LOS
State Route 150	Class II	2-lane	3,000	21,000	LOS B
Koenigstein Road	Class III	2-lane	200	16,000	LOS A

The data presented in Table 1 indicates that the study-area roadway segments currently operate in the LOS "A" - "B" range based on the County's level of service criteria. Note that the 2015 Baseline conditions presented in the August 2015 Subsequent Environmental Impact Report for the Mirada Petroleum Oil and Gas Project - Agnew Lease utilized 2015 ADT traffic volumes of 2,900 on State Route 150 and 250 on Koenigstein Road. The 2018 traffic counts utilized by ATE indicate that the Baseline conditions have not changed relative to roadway levels of service.

Intersection Levels of Service

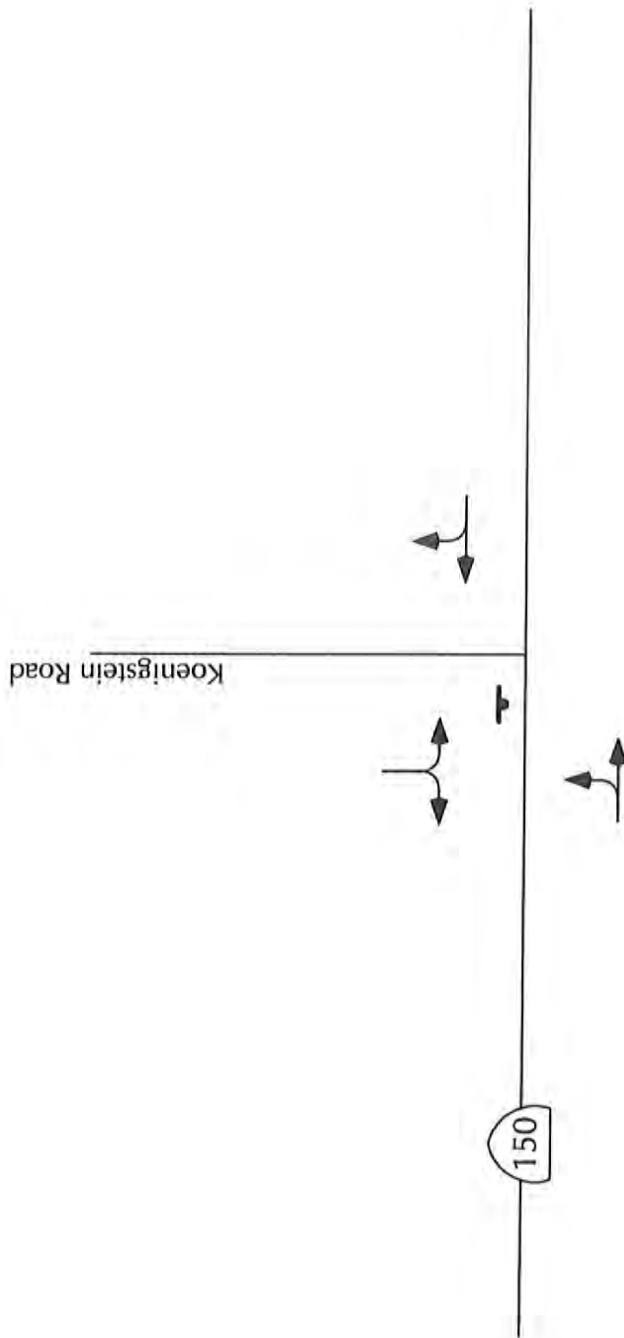
Because traffic flow on urban arterials is most restricted at intersections, a detailed analysis of traffic flow must examine the operating conditions of critical intersections during peak flow periods. As with roadway segments "Levels of Service" (LOS) "A" through "F" are used to rate intersection operations.

Existing A.M. and P.M. peak hour turning volumes for the study-area intersection is shown on Figure 2. The peak hour turning volumes were collected by ATE in May of 2018 in conjunction with this study. Figure 3 illustrates the study-area intersection existing traffic control and the intersection geometry.



EXISTING TRAFFIC VOLUMES

FIGURE 2



LEGEND

- - Stopped Approach

- - Lane Geometry



ASSOCIATED
TRANSPORTATION
ENGINEERS



EXISTING LANE GEOMETRY AND TRAFFIC CONTROLS

FIGURE 3

EKM - ATE#18070

Level of service for the study-area intersection was calculated using the Highway Capacity Manual unsignalized intersection methodology. The Technical Appendix contains the level of service calculation worksheets for the study-area intersection. Table 2 lists the type of traffic control and the existing A.M. and P.M. peak hour levels of service for the study-area intersection.

Table 2
Existing Intersection Levels of Service

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		Delay	LOS	Delay	LOS
State Route 150/Koenigstein Road eastbound left-turn: southbound approach:	STOP-Sign	7.5 sec.	LOS A	7.5 sec.	LOS A
		9.6 sec.	LOS A	9.7 sec.	LOS A

The data presented in Table 2 indicates that the study-area intersection delayed movements currently operate at LOS "A" or better during the A.M. peak hour and P.M. peak hour periods, which meets the County's LOS "C" standard.

VENTURA GENERAL PLAN POLICIES

Roadways: The thresholds established by Ventura County¹ that are outlined in Table 3 were used to assess the significance of roadway and intersection impacts associated with project generated traffic.

Table 3
Minimum Acceptable Level of Service For Roadway Segments and Intersections

Minimum LOS	County of Ventura - Description
C	All County maintained local roads.
D	All County thoroughfares and state highways within the unincorporated area of the County, except as provided below
E	1. State Route 33 between the end of the Ojai freeway and the City of Ojai. 2. State Route 118 between Santa Clara Avenue and the City of Moorpark. 3. State Route 34 (Somis Road) north of the City of Camarillo. 4. Santa Rosa Road between Camarillo city limit line and Thousand Oaks city limit line. 5. Moorpark Road north of Santa Rosa Road to Moorpark city limit line.
Varies	The LOS prescribed by the applicable city for all state highways, city thoroughfares, and city maintained local roads located within that city, if the city has formerly adopted General Plan policies, ordinances or a reciprocal agreement with the County, pertaining to development in the city that would individually or cumulatively affect the LOS of state highways, county thoroughfares and county-maintained local roads in the unincorporated area of the County.
	County LOS standards are applicable for any city that has not adopted its own standards or has not executed a reciprocal agreement with the County pertaining to impacts to County roads.
At any intersection between two roads, each of which has a prescribed minimum acceptable LOS, the less stringent LOS of the two shall be the minimum acceptable LOS of that intersection.	

Project-Specific Impacts - A significant adverse project specific traffic impact is assumed to occur on any road segment if any one of the following results from the project:

- a. If the project would cause the existing LOS on a roadway segment to fall to an unacceptable level as defined in Table 3.
- b. If the project will add one or more PHT to a roadway segment that is currently operating at an unacceptable LOS as defined in Table 3.

Cumulative Impacts – A potentially significant adverse cumulative traffic impact is assumed to occur on any road segment if any one of the following results from the project:

- a. If the project will add one or more PHT to a roadway segment that is part of the regional road network and the roadway segment is currently operating at an unacceptable LOS as defined in Table 3.

¹ Ventura County Initial Study Assessment Guidelines, County of Ventura, April 26, 2011.

- b. If the project will add 10 or more PHT to a roadway segment which is part of the regional road network and is projected to reach an unacceptable LOS as defined in Table 3 by the Year 2020.

All projects that generate traffic contribute to cumulative traffic impacts. The analysis of cumulative traffic impacts, as contained in the Final Subsequent EIR prepared for the County General Plan Update (2005) and subsequent addendum (2007), would normally be considered sufficient analysis of traffic impacts. In such cases, payment of County's Traffic Impact Mitigation Fees (TIMF) is intended to mitigate the project's contribution to the cumulative traffic impacts for road segments outside of the Ojai Valley.

The County of Ventura's traffic impact thresholds for the Ojai area also focus on the segment of State Route 33 in the Casitas Springs community, located south of the City of Ojai. The threshold states that a project would contribute to significant cumulative impacts if it adds one or more southbound trips during the A.M. peak period or adds one or more northbound trips during the P.M. peak period to State Route 33 in Casitas Springs.

Intersections: A potentially significant adverse project-specific traffic impact is assumed to occur at any intersection on the Regional Road Network if the project will exceed the thresholds established in Table 4.

Table 4
Threshold of Significance For Changes in Level of Service at Intersections

Significant Changes in LOS	
Intersection Level of Service (Existing)	Increase in V/C or Trips Greater Than
LOS A	0.20
LOS B	0.15
LOS C	0.10
LOS D	10 Trips*
LOS E	5 Trips*
LOS F	1 Trip*
*To critical movements. These are the highest combination of left and opposing through/right-turn PHTM.	

If the project involves County General Plan land use designation changes, zone changes or intensification of use, such that the projects impacts could not have been anticipated and were not included in either analysis for the current General plan or TIMF Program, or the project is located within the boundaries of the Ojai Area Plan, additional cumulative impact analysis and mitigation measures may be required at the discretion of the Director, County PWA - Transportation Department.

PROJECT-SPECIFIC IMPACT ANALYSIS

The following section evaluates the average daily trips (ADT), A.M. and P.M. project-specific impacts related to the continues operation of the Agnew Oil Lease based on Ventura County criteria.

Project Trip Generation

Trip generation estimates for the Agnew Oil Lease CUP Modification were calculated based on operational data presented in the August 2015 Subsequent Environmental Impact Report for the Mirada Petroleum Oil and Gas Project - Agnew Lease.

Production operation will include tanker truck transport of produced oil and wastewater from the site to offsite oil refining and wastewater disposal facilities. All tanker truck operations would occur between the hours of 7:30 A.M. to 6:30 P.M. Monday through Saturday. The currently permitted maximum truck loads is 2 loads per day or 4 daily trips. The CUP modification would not change the permitted maximum production truck loads per day or daily trips. In addition to production trucks trips there will be trips related to the maintenance and operation of production facilities. These trips will be limited to 28 truck trips per week. The following represents the maximum daily operations that potentially could occur:

Tanker Truck Daily Trips:	2 in and 2 out
Maintenance Truck Daily Trips:	2 in and 2 out

Table 5
Project Trip Generation

Trucks	ADT	A.M. Peak Hour			P.M. Peak Hour		
		Trips	In	Out	Trips	In	Out
Tanker Trucks	4	2	1	1	2	1	1
Maintenance Trucks	4	2	1	1	2	1	1
Total Trip Generation:	8	4	2	2	4	2	2

Note: The trip generation is based on peak day operational data provided by the applicant.

The Agnew Oil Lease Project will generate a maximum of 8 average daily trips, 4 A.M. peak hour trips and 4 P.M. peak hour trips which will be added onto the adjacent street network.

Under the existing CUP-3543 the operator is limited to 12 truckloads per week (24 truck trips per week). However, this truck limitation is not applicable to the use of Koenigstein Road as such use is currently prohibited under CUP-3543. Since tanker trucks are prohibited on the segment of Koenigstein Road proposed to be used, and the oil wells on the Project site are currently not operating the existing (Baseline) condition is zero truck trips.

Project Trip Distribution and Assignment

The project trip distribution is based on truck route presented in August 2015 Subsequent Environmental Impact Report for the Mirada Petroleum Oil and Gas Project - Agnew Lease. Trucks are route to and from east towards the City of Santa Paula. Figure 4 illustrates the distribution pattern used to assign the truck trips associated with the operation of the Agnew Oil Lease.

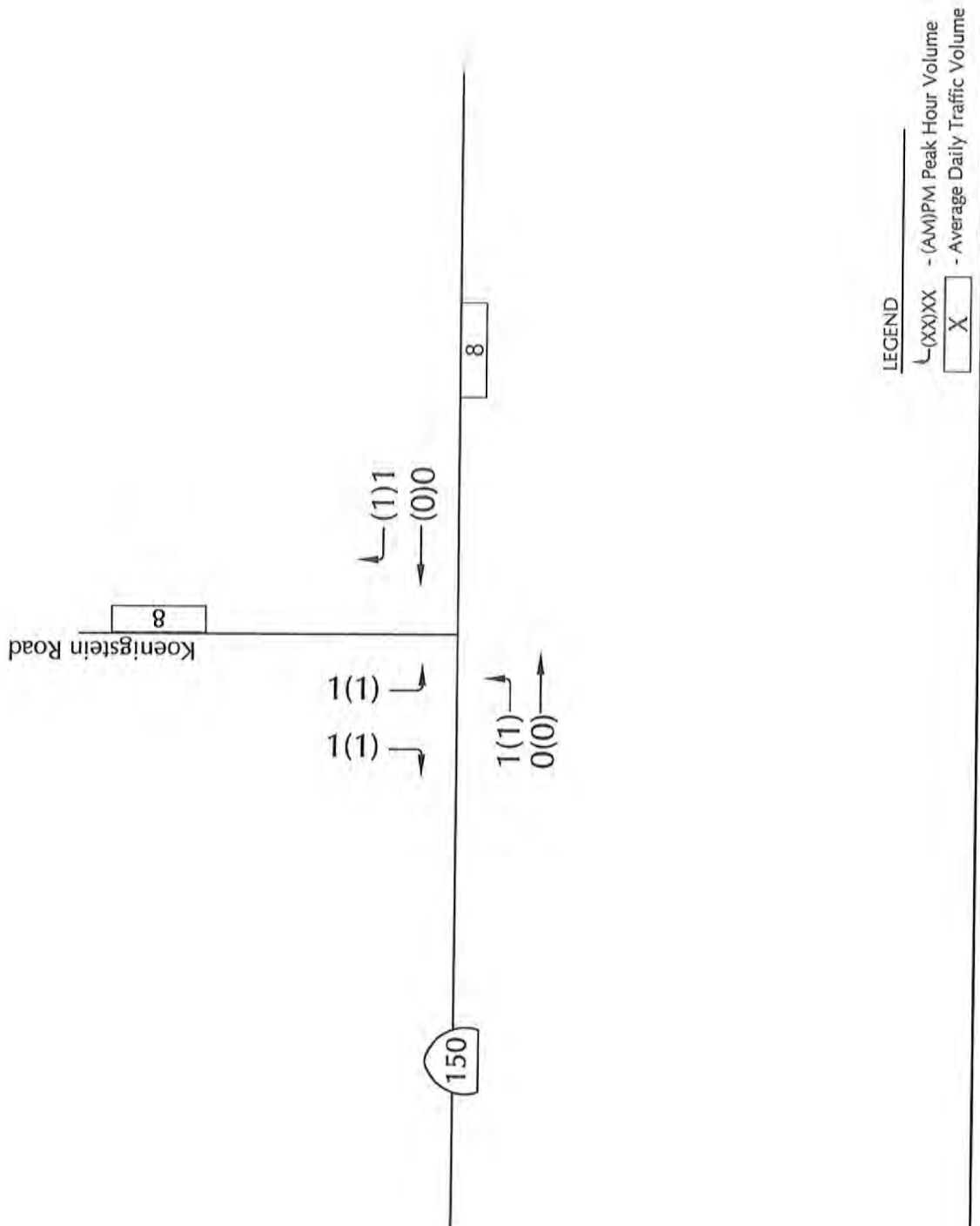
Existing + Project Roadway Operations

Existing + Project average daily traffic (ADT) volume for the study-area roadway segment is illustrated on Figure 5. Levels of Service for the study-area roadway segment was determined based on Ventura County roadway engineering design capacities, the results are presented in Table 6.

Table 6
Existing + Project Roadway Levels of Service

Roadway Segment	Existing Geometry	Roadway Classification	Existing + Project ADT	LOS D Capacity	LOS
State Route 150	2-lanes	Class II	3,006	21,000	LOS B
Koenigstein Road.	2-lanes	Class III	206	16,000	LOS A

The data presented in Table 6 indicates that the study-area roadway segments would continue to operate in the LOS "A" - "B" range with project-generated traffic based on the County's level of service criteria.

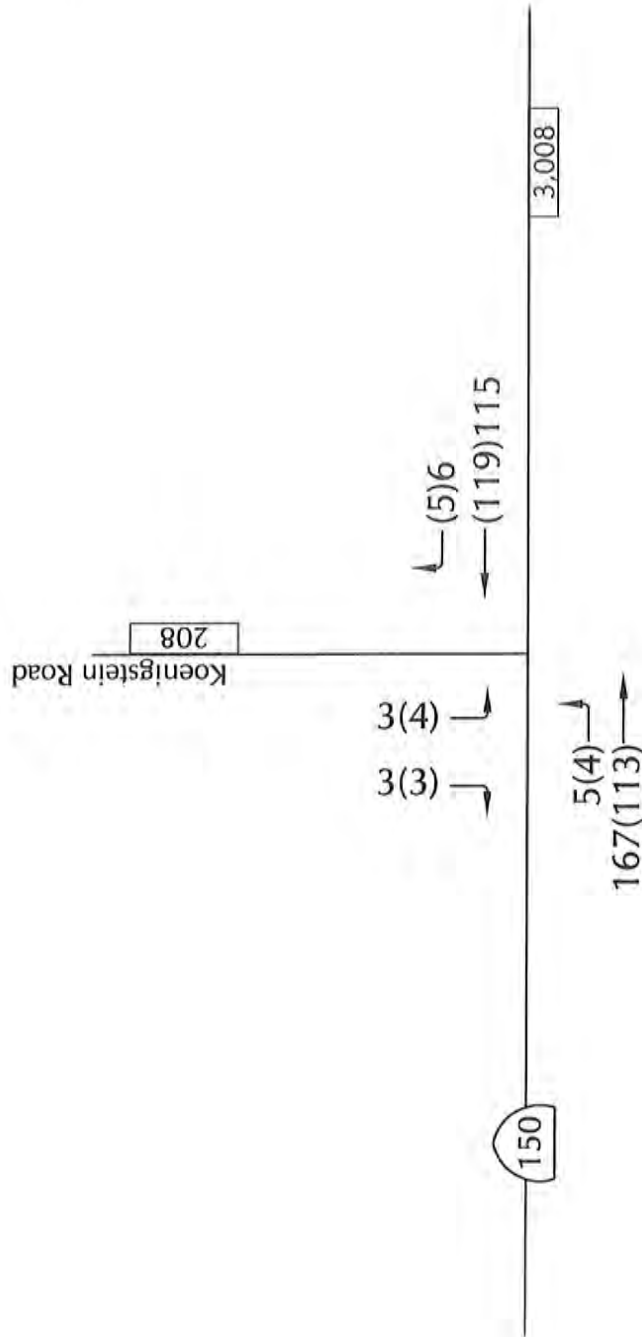


ASSOCIATED
TRANSPORTATION
ENGINEERS

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

FIGURE 4

EKM - ATE#18070



LEGEND
 L (XX)XX - (AM)PM Peak Hour Volume
 X - Average Daily Traffic Volume

EXISTING + PROJECT TRAFFIC VOLUMES

FIGURE 5

EKM - ATE#18070



Existing + Project Intersection Levels of Service

Intersection levels of service for the study-area intersections were calculated assuming the Existing + Project traffic volumes shown on Figure 5. Worksheets illustrating the calculations are provided in the Technical Appendix. Table 7 list the results of the calculations and Existing + Project level of service ratings.

Table 7
Existing + Project Intersection Levels of Service

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		Delay	LOS	Delay	LOS
State Route 150/Koenigstein Road eastbound left-turn: southbound approach:	STOP-Sign	7.5 sec. 9.6 sec.	LOS A LOS A	7.5 sec. 9.7 sec.	LOS A LOS A

The data presented in Table 7 indicate that the project would not generate significant impacts at the study-area intersection during weekday peak hour periods. The study-area unsignalized intersection delayed movements would continue to operate in the LOS "A" range with the addition of project-generated traffic volumes.

State Route 150/Koenigstein Road Project Site Access

The requested modified CUP would authorize the use of Koenigstein Road. In 1995 the permitted access road was destroyed by flooding. The August 2015 Subsequent Environmental Impact Report for the Mirada Petroleum Oil and Gas Project - Agnew Lease concluded that the reconstruction of the destroyed access road across Sisar Creek was not feasible. The site of the former crossing is now an active stream channel that supports sensitive wildlife habitat. Construction of a new at-grade crossing or bridge spanning the creek would result in potentially significant impacts on the biological resources. It is unlikely the required State permits to alter the streambed could be obtained given the availability of Koenigstein Road to serve the Project.

Ventura County Safety and Design of Public Road Threshold of Significance Criteria

Project-Specific Impacts

1. A project that impacts Public Road or intersections will have a less-than significant impact on the design of the Public Road system or intersections only if the existing Public Road or intersection complies with current County Road standards and the proposed Public Road or intersection improvement or encroachment associated with the project or required by the CEQA lead agency also complies with County Road Standards.

2. A project that either individually impacts a Public Road intersection so that the intersection exceeds any one of the traffic signal warrants established by the Manual for Uniform Traffic Control Devices as supplemented and adopted by the State of California (MUTCD/CA) has the potential to cause a significant impact.
3. A project that impacts Public Roads or intersections will have a less-than-significant impact on the safety and design of the Public Road System only if the existing Public Road or intersection complies with current County Road Standards and if the affected Public Road or intersection has a collision or incident rates at or below state wide averages for similar facilities.
4. A project has a potentially significant adverse project-specific traffic impact on any road segment of the roadway segment has been identified by SWITRS as experiencing a high incident rate.
5. A project has a potentially significant adverse project-specific traffic impact on the affected road segment if that roadway segment is identified as being a part of an existing road system that is non-compliant with current County road standards.
6. A proposed project located in the unincorporated area where the existing road systems were developed prior to any safety engineering standards will have a significant adverse impact on the road safety.
7. A project will have a potentially significant adverse project-specific traffic impact at any un-signalized intersection on the Public Road system if the project-specific impacts results in any of the warrants established by the MUTCD/CA being met.
8. A project with project-specific impacts to any intersection that has been identified in the Substandard Impact Area Vicinity, Upper Ojai Substandard Impact Area, Santa Susana Area Substandard Impact Area, Ventu Park Area Substandard Impact Area, Yerba Buena Area Substandard Impact Area, or the Sant Susana Knolls Area Substandard Impact Area Maps shall be considered significantly unless mitigated.

Cumulative Impacts

1. A project will have a potentially significant adverse cumulative traffic impact on any road segment if the affected road segment has been identified as experiencing a high incident rate.
2. A project that individually impacts a Public Road intersection so that the intersection exceeds any one of the traffic signal warrants established by the Manual for Uniform Traffic Control Devices as supplemented and adopted by the State of California (MUTCD/CA) has the potential to cause a significant cumulative impact.

3. A proposed project along with past, present or probable future projects that uses existing substandard public road in the areas shown on the Substandard Impact Areas Vicinity, Upper Ojai Substandard Impact Area, Santa Susana Area Substandard Impact Area, Ventu Park Area Substandard Impact Area, Yerba Buena Substandard Impact Area, or Santa Susana Knoll Are Substandard Impact Area Maps (see attachments) is considered to have cumulative impacts on the operational safety if he public road system in these areas.

4. A project will have a potentially significant adverse cumulative traffic impact to any un-signalized intersection on the Public Road System if the project-specific impacts along with the other past, present or probably future projects results in any of the warrants established by the MUTCD/CA being met

5. Any proposed project, along with other past, present or probably future project, that causes impacts at any intersection that has been identified in the Substandard Impact Areas Vicinity, Upper Ojai Substandard Impact Area, Santa Susana Area Substandard Impact Area, Ventu Park Area Substandard Impact Area, Yerba Buena Substandard Impact Area, or Santa Susana Knoll Are Substandard Impact Area Maps will also be considered cumulatively significant.

The State Route 150/Koenigstein Road intersection is outside of the Upper Ojai Substandard Impact area. With an existing pavement width of 22 feet, Koenigstein Road does not comply with current Ventura County Road standards of 32 feet. The following is an evaluation for the State Route 150/Koenigstein Road intersection as it relates to the use of tanker trucks. ATE has conducted a field review of the intersection to determine the sight distance, evaluated collision data on State Route 150. ATE evaluated the intersection based on the use by oil tanker trucks which will not exceed the legal limits as defined in Section 35401 of the State of California Vehicle Code. Oversized trucks would be required to have a valid Transportation Permit issued by the State.

Sight Distances. ATE conducted a field review to determine if sufficient sight distance exists for tanker trucks at the State Route 150/Koenigstein Road intersection. The Caltrans Highway Design Manual² sight distance standards were used for the sight distance analysis. The segment of State Route 150 is rolling and posted 35 MPH. Based on Caltrans criteria, the minimum required sight distance standard for a 35 MPH design speed is 250 feet.

The sight distance looking east along State Route 150 was measured at 350 feet, in excess of the 250-foot minimum. The sight distance looking west along State Route 150 was measured at 500 which also exceeds the 250-foot minimum. The measured sight distance at the State Route 150/Koenigstein Road intersection exceeds the minimum site distance standard.

² Highway Design Manual, Caltrans, 6th Edition.

Collision Data. ATE requested and reviewed collision data on file with Caltrans for the State Route 150/Koenigstein Road intersection. The collision data records covered a period from 2016 to 2019. The collision record provided by Caltrans is provided in the Technical Appendix. There were no collisions reported at the intersection. The August 2015 Subsequent Environmental Report for the Mirada Oil and Gas Project - Agnew Lease found that from 2002 to 2013 only two accidents occurred at the intersection and neither involved oil tanker trucks.

The Koenigstein Road bridge over Sisar Creek is approximately 22 feet wide which makes it inadequate for passing trucks. This condition would be an inconvenience but would not create a safety hazard due to low traffic volumes that utilize the bridge.

A supplemental analysis letter prepared for the State Route 150/Koenigstein Road intersection by ATE in July of 2016 is included in the Technical Appendix.

Signal Warrants. A signal warrant analysis was conducted for the State Route 150/Koenigstein Road intersection. The traffic signal warrant analysis was completed based on the Manual on Uniform Traffic Control Devices (MUTCD), California Supplement, 8-Hour, 4-Hour, Crash and Average Daily Traffic vehicular volume warrant criteria. The Rural Warrants were used. Table 8 summarizes the results of the signal warrant analysis.

Table 8
Signal Warrant Results - State Route 150/Koenigstein Road

Warrant	Type	Warrant Satisfied ?		
		Existing	Existing + Project	Cumulative + Project
#1	8-Hour Condition "A" - Minimum Vehicle Volume Condition "B" - Interruption of Continuous Traffic	No No	No No	No No
#2	4-Hour	No	No	No
#3	Peak Hour	Does Not Apply		
#4	Pedestrian Volume	Does Not Apply		
#5	School Crossing	Does Not Apply		
#6	Coordinated Signal System	Does Not Apply		
#7	Crash	No	N/A	N/A
#8	Roadway Network	Does Not Apply		
#9	Intersection Near a Grade Crossing	Does Not Apply		
ADT	ADT Condition "A" - Minimum Vehicle Volume Condition "B" - Interruption of Continuous Traffic	No No	No No	No No

The approach volumes on the minor street at the State Route 150/Koenigstein Road intersection do not satisfy the 8-Hour and the 4-Hour vehicular volume warrants under the Existing, Existing + Project and Cumulative + Project scenarios. In order to satisfy the 8-Hour warrant, a minimum of 53 vehicles per hour are necessary on the minor street approach with one lane. In order to satisfy the 4-Hour warrant, a minimum of 60 vehicles per hour are necessary on the minor street approach with one lane. The Cumulative + Project traffic volumes are below 53 vehicles per hour during both the 8 hour and the 4 hour periods. Neither Condition "A" or "B" of the 8-Hour volumes warrant is 80 percent satisfied.

The approach volumes on the minor street at the State Route 150/Koenigstein Road intersection do not satisfy the ADT vehicular volume warrants under the Existing, Existing + Project and Cumulative + Project scenarios. In order to satisfy the ADT warrant, a minimum of 850 vehicles per day in one direction are necessary on the minor street approach with one lane. The estimated Cumulative + Project exiting traffic volumes is 119 (238 ADT/2) vehicles per day.

CUMULATIVE (YEAR 2030) CONDITIONS

Cumulative traffic volumes were forecast for the study-area intersections assuming development of other projects proposed within the study-area. There is little proposed development in the study-area, given the constraint on development due to the County's General Plan policy regarding State Route 33. Based on historical (2011 to 2017) Caltrans traffic count data a 15 percent growth factor was applied to the existing traffic volumes to account for ambient traffic growth. The following section discusses the cumulative (Year 2030) scenario which includes the traffic generated by the Project.

Cumulative Roadway Operations

Cumulative daily traffic (ADT) volume for the study-area roadway segment is illustrated on Figure 6. Levels of Service for the study-area roadway segments was determined based on Ventura County roadway engineering design capacities, the results are presented in Table 9.

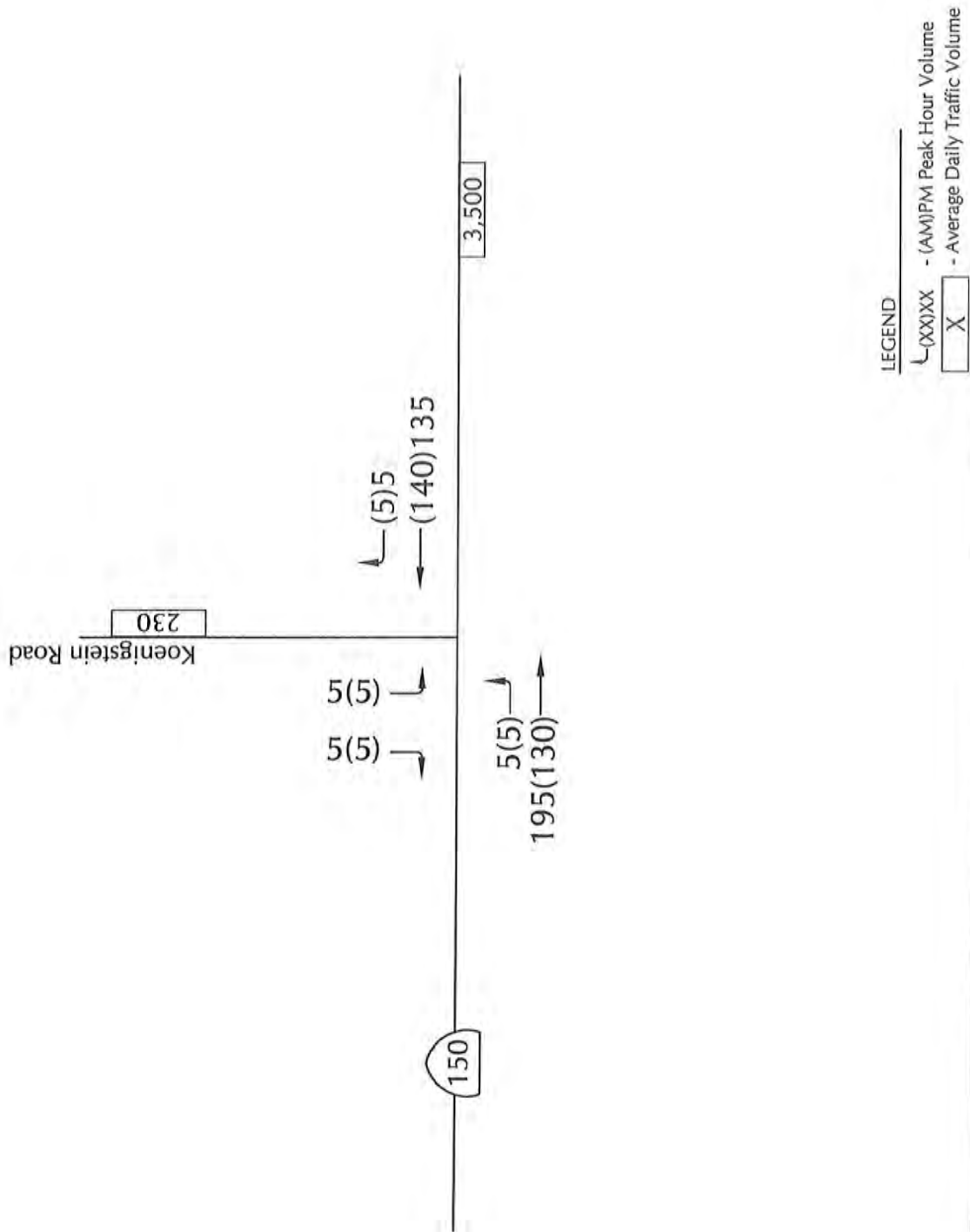


Table 9
Cumulative Roadway Levels of Service

Roadway Segment	Existing Geometry	Roadway Classification	Cumulative ADT	LOS D Capacity	LOS
State Route 150	2-lanes	Class I	3,500	21,000	LOS B
Koenigstein Road	2-lanes	Class II	230	16,000	LOS A

The data presented in Table 9 indicates that the study-area roadway segment would operate in the LOS "A" - "B" range under Cumulative conditions based on the County's level of service criteria.

Cumulative + Project daily traffic (ADT) volume for the study-area roadway segment is illustrated on Figure 7. Levels of Service for the study-area roadway segment was determined based on Ventura County roadway engineering design capacities, the results are presented in Table 10.

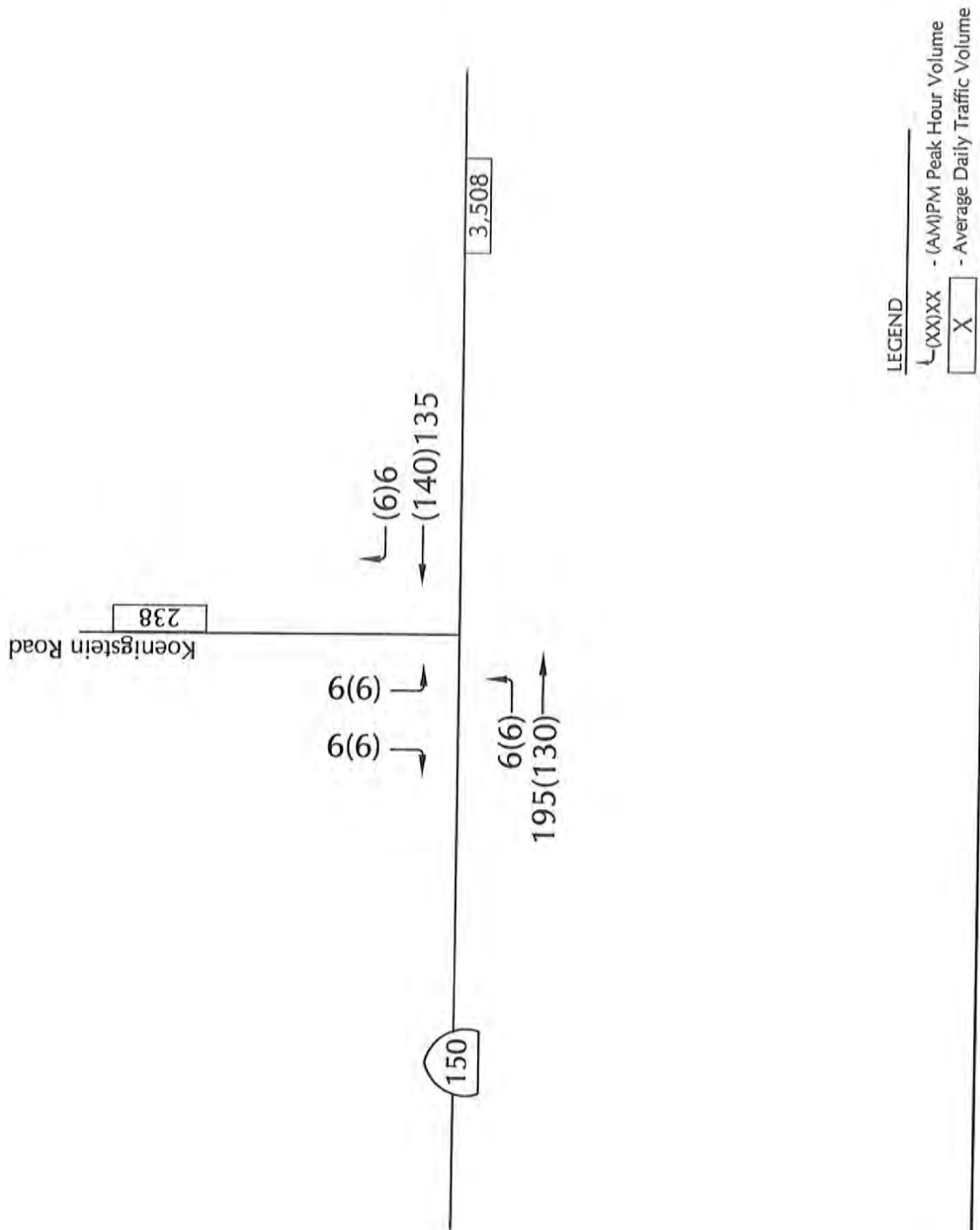
Table 10
Cumulative + Project Roadway Levels of Service

Roadway Segment	Existing Geometry	Roadway Classification	Cumulative + Project ADT	LOS D Capacity	LOS
State Route 150	2-lanes	Class II	3,506	21,000	LOS B
Koenigstein Road	2-lanes	Class III	236	16,000	LOS A

The data presented in Table 10 indicates that the study-area roadway segments would continue to operate in the LOS "A" - "B" range under Cumulative + Project conditions traffic based on the County's level of service criteria.

Cumulative Intersection Levels of Service

Figures 6 and 7 illustrate the Cumulative and Cumulative + Project traffic volumes respectively. Tables 11 and 12 show the A.M. and P.M. peak hour intersection levels of service for the Cumulative scenarios with and without project-generated traffic volumes. Level of service worksheets are contained in the Technical Appendix.



CUMULATIVE + PROJECT TRAFFIC VOLUMES

FIGURE 7

Table 11
Cumulative Intersection Levels of Service – A.M. Peak Hour

Intersection	Delay - Level of Service			
	Cumulative		Cumulative + Project	
	Delay	LOS	Delay	LOS
State Route 150/Koenigstein Road eastbound left-turn:	7.6 sec.	LOS A	7.6 sec.	LOS A
southbound approach:	9.7 sec.	LOS A	9.8 sec.	LOS A

Table 12
Cumulative Intersection Levels of Service – P.M. Peak Hour

Intersection	Delay - Level of Service			
	Cumulative		Cumulative + Project	
	Delay	LOS	Delay	LOS
State Route 150/Koenigstein Road eastbound left-turn	7.5 sec.	LOS A	7.6 sec.	LOS A
southbound approach	10.0 sec.	LOS A	10.0 sec.	LOS A

Tables 11 and 12 show that the study-area intersections are forecast to operate at LOS "A" range during the peak hour periods with General Plan Buildout volumes. The proposed project is subject to the Ventura County traffic mitigation fee programs, with collected fees used for transportation improvements required to accommodate future traffic volumes.

SHORT-TERM DRILLING IMPACTS

The CUP modification includes the drilling of three new wells and the re-drilling of one existing well. The drilling period is short-term (1 well drilled per year over approximately 10 days per year). The drilling will include 20 workers and 16 trucks. Over a two day period 16 trucks (8 trucks per day) will bring drilling equipment to the site. Then over a two day period 16 trucks (8 trucks per day) will remove drilling equipment from the site.

Drilling is planned to occur 24 hours, truck trips will occur during daylight hours generally between the hours of 7:00 A.M. and 6:00 P.M. The traffic generated during the drilling period would include truck traffic hauling drilling equipment to site and employee trips to/from the site. Access to the Project site will be via Koenigstein Road. During the 10 day drilling period the following represents the maximum daily operations that potentially could occur:

Drill Equipment Daily Trucks Trips:	16 per day over 2 days (8 in and 8 out each day)
Light Duty Truck Daily Trips:	40 per day over 10 days (20 in and 20 out each day)

Traffic generated by the drilling of wells is short-term in nature. No substantial increase in traffic would result from the drilling of wells over the long-term because the proposed infrastructure would require only occasional maintenance and no new employees would be hired for on-going operations. Therefore, the drilling of wells would not contribute to cumulative traffic impacts.

■ ■ ■

REFERENCES AND PERSONS CONTACTED

Associated Transportation Engineers

Richard L. Pool, P.E., Principal Engineer
Darryl F. Nelson, Senior Transportation Planner
Erica K. Monson, Transportation Planner

Persons Contacted

Ben Emami, Engineering Manager, County of Ventura

Written Material

Highway Capacity Manual, Transportation Research Board, 2010.

Mirada Petroleum Oil and Gas Project - Agnew Lease, Subsequent Environmental Impact Report, August 2015.

TECHNICAL APPENDIX

CONTENTS:

TRAFFIC COUNT DATA

LEVEL OF SERVICE DEFINITIONS

LEVEL OF SERVICE CALCULATION WORKSHEETS

Reference 1 - State Route 150/Koenigstein Road

COLLISION DATA

ATE SUPPLEMENTAL TRAFFIC ANALYSIS

SIGNAL WARRANT CRITERIA

TRAFFIC COUNT DATA

VOLUME

Koenigstein Rd N/O SR 150

Day: Wednesday

Date: 8/22/2018

City: Ojai

Project #: CA18_5529_001

DAILY TOTALS					NB	SB	EB		WB		Total
					102	99	0		0		201
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	0	0			0	12:00	4	2			6
00:15	0	0			0	12:15	1	4			5
00:30	0	0			0	12:30	1	3			4
00:45	0	0			0	12:45	1	7	0	9	16
01:00	0	0			0	13:00	1	2			3
01:15	0	0			0	13:15	2	0			2
01:30	0	0			0	13:30	1	1			2
01:45	0	0			0	13:45	1	5	2	5	10
02:00	0	0			0	14:00	0	1			1
02:15	0	0			0	14:15	2	2			4
02:30	0	0			0	14:30	0	1			1
02:45	0	0			0	14:45	1	3	0	4	7
03:00	0	0			0	15:00	2	0			2
03:15	0	0			0	15:15	5	3			8
03:30	0	0			0	15:30	0	0			0
03:45	0	0			0	15:45	1	8	1	4	12
04:00	0	0			0	16:00	2	1			3
04:15	0	0			0	16:15	2	0			2
04:30	0	0			0	16:30	2	1			3
04:45	0	0			0	16:45	3	9	2	4	13
05:00	0	0			0	17:00	2	1			3
05:15	0	0			0	17:15	2	3			5
05:30	0	0			0	17:30	3	1			4
05:45	0	0			0	17:45	3	10	1	6	16
06:00	2	3			5	18:00	0	3			3
06:15	0	2			2	18:15	2	0			2
06:30	2	2			4	18:30	3	2			5
06:45	1	5	1	8	2	18:45	1	6	2	7	13
07:00	1	4			5	19:00	0	1			1
07:15	1	2			3	19:15	2	2			4
07:30	0	1			1	19:30	3	2			5
07:45	1	3	0	7	1	19:45	1	6	0	5	11
08:00	5	2			7	20:00	0	1			1
08:15	5	1			6	20:15	0	1			1
08:30	2	3			5	20:30	1	0			1
08:45	0	12	1	7	1	20:45	0	1	0	2	3
09:00	2	1			3	21:00	4	0			4
09:15	1	1			2	21:15	1	0			1
09:30	1	3			4	21:30	1	0			1
09:45	2	6	2	7	4	21:45	1	7	0		7
10:00	0	3			3	22:00	1	0			1
10:15	1	3			4	22:15	2	0			2
10:30	0	2			2	22:30	1	0			1
10:45	3	4	1	9	4	22:45	0	4	2	2	6
11:00	2	2			4	23:00	0	0			0
11:15	1	2			3	23:15	0	1			1
11:30	1	7			8	23:30	0	0			0
11:45	2	6	1	12	3	23:45	0	0	1		1
TOTALS	36	50			86	TOTALS	66	49			115
SPLIT %	41.9%	58.1%			42.8%	SPLIT %	57.4%	42.6%			57.2%

DAILY TOTALS					NB	SB	EB				WB	Total
					102	99	0				0	201
AM Peak Hour	07:45	11:30	11:30			PM Peak Hour	16:45	12:00			16:45	
AM Pk Volume	13	14	22			PM Pk Volume	10	9			17	
Pk Hr Factor	0.650	0.500	0.688			Pk Hr Factor	0.833	0.563			0.850	
7 - 9 Volume	15	14	0	0	29	4 - 6 Volume	19	10	0	0	29	
7 - 9 Peak Hour	07:45	07:00	07:45			4 - 6 Peak Hour	16:45	16:30			16:45	
7 - 9 Pk Volume	13	7	0	0	19	4 - 6 Pk Volume	10	7	0	0	17	
Pk Hr Factor	0.650	0.438	0.000	0.000	0.679	Pk Hr Factor	0.833	0.583	0.000	0.000	0.850	

Day: Wednesday
Date: 08/22/2018

ID: 18-05530-001

City: Ojai

Koenigstein Rd

SOUTHBOUND

AM	2	0	3	0	7	AM
NOON	0	0	0	0	0	NOON
PM	2	0	2	0	9	PM

0

0

0

0

0

CONTROL

0		
TEV	244 AM	0 NOON
PHF	0.90	0.90

0

0

0

0

0

NORTHBOUND

PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

Koenigstein Rd

Day: Wednesday

Date: 08/22/2018

SR-150 EASTBOUND

AM	NOON	PM
121	0	117
0	0	0
3	0	4
113	0	167
0	0	0

AM NOON PM

SR-150 WESTBOUND

PM	NOON	AM
5	0	4
115	0	119
0	0	0
0	0	0
169	0	116

PM NOON AM

Total Vehicles (AM)

Total Vehicles (NOON)

Total Vehicles (PM)

Total Vehicles (AM)

Total Vehicles (NOON)

Total Vehicles (PM)

Pedestrians (Crosswalks)

PM	NOON	AM	PM	NOON	AM	PM	NOON	AM	PM	NOON	AM
0	0	0	0	0	0	0	0	0	0	0	0

LEVEL OF SERVICE DEFINITIONS

LEVEL OF SERVICE DEFINITIONS

"Levels of Service" (LOS) A through F are used to rate roadway and intersection operating conditions, with LOS A indicating very good operations and LOS F indicating poor operations. More complete level of service definitions are:

LOS	Definition
A	Low volumes; primarily free flow operations. Density is low and vehicles can freely maneuver within traffic stream. Drivers can maintain their desired speeds with little or no delay.
B	Stable flow with potential for some restriction of operating speeds due to traffic conditions. Maneuvering is only slightly restricted. Stopped delays are not bothersome and drivers are not subject to appreciable tension.
C	Stable operations, however the ability to maneuver is more restricted by the increase in traffic volumes. Relatively satisfactory operating speeds prevail but adverse signal coordination or longer queues cause delays.
D	Approaching unstable traffic flow where small increases in volume could cause substantial delays. Most drivers are restricted in their ability to maneuver and their selection of travel speeds. Comfort and convenience are low but tolerable.
E	Operations characterized by significant approach delays and average travel speeds of one-half to one-third of free flow speed. Flow is unstable and potential for stoppages of brief duration. High signal density, extensive queuing, or signal progression/timing are the typical causes of delays.
F	Forced flow operations with high approach delays at critical signalized intersections. Speeds are reduced substantially and stoppages may occur for short or long periods of time because of downstream congestion.

Signalized Intersection Level of Service Definitions

LOS	Delay ^a	V/C Ratio	Definition
A	< 10.0	< 0.60	Progression is extremely favorable. Most vehicles arrive during the green phase. Many vehicles do not stop at all.
B	10.1 - 20.0	0.61 - 0.70	Good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.
C	20.1 - 35.0	0.71 - 0.80	Only fair progression, longer cycle lengths, or both, result in higher cycle lengths. Cycle lengths may fail to serve queued vehicles, and overflow occurs. Number of vehicles stopped is significant, though many still pass through intersection without stopping.
D	35.1 - 55.0	0.81 - 0.90	Congestion becomes more noticeable. Unfavorable progression, long cycle lengths and high v/c ratios result in longer delays. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	55.1 - 80.0	0.91 - 1.00	High delay values indicate poor progression, long cycle lengths and high v/c ratios. Individual cycle failures are frequent
F	> 80.0	> 1.00	Considered unacceptable for most drivers, this level occurs when arrival flow rates exceed the capacity of lane groups, resulting in many individual cycle failures. Poor progression and long cycle lengths may also contribute to high delay levels.

^a Average control delay per vehicle in seconds.

Unsignalized Intersection Level of Service Definitions

The HCM¹ uses *control delay* to determine the level of service at unsignalized intersections. Control delay is the difference between the travel time actually experienced at the control device and the travel time that would occur in the absence of the traffic control device. Control delay includes deceleration from free flow speed, queue move-up time, stopped delay and acceleration back to free flow speed.

LOS	Control Delay Seconds per Vehicle
A	< 10.0
B	10.1 - 15.0
C	15.1 - 25.0
D	25.1 - 35.0
E	35.1 - 50.0
F	> 50.0

¹ Highway Capacity Manual, National Research Board, 2000



FIGURE 4.2.2

AVERAGE DAILY TRAFFIC (ADT) LEVEL OF SERVICE (LOS) THRESHOLDS COUNTY ROADS AND CONVENTIONAL STATE HIGHWAYS					
LOS	CLASS I			CLASS II	CLASS III
	2 LANES	4 LANES	6 LANES	2 LANES	2 LANES
A	2,400	19,000	29,000	1,500	350
B	5,600	28,000	42,000	3,900	2,000
C	10,000	38,000	57,000	7,000	3,300
D	16,000	47,000	70,000	11,000	5,900
E	27,000	58,000	87,000	21,000	16,000

ADT/LOS THRESHOLDS FREEWAYS				
LOS	4 LANES	6 LANES	8 LANES	10 LANES
A	31,000	46,000	62,000	77,000
B	48,000	71,000	95,000	119,000
C	68,000	102,000	136,000	169,000
D	82,000	123,000	164,000	205,000
E	88,000	132,000	176,000	220,000

SOURCE: VENTURA COUNTY PUBLIC WORKS AGENCY 9/94

R. 12/20/94

LEVEL OF SERVICE CALCULATION WORKSHEETS

Reference 1 - State Route 150/Koenigstein Road

HCS 2010 Two-Way Stop Control Summary Report

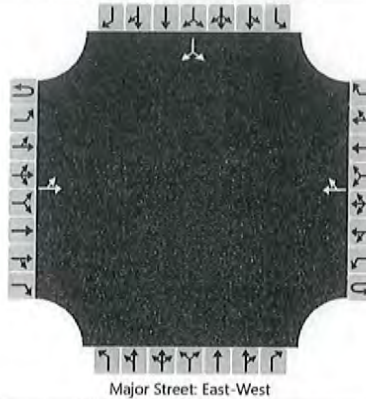
General Information

Analyst	Darryl Nelson
Agency/Co.	ATE
Date Performed	9/27/2018
Analysis Year	2018
Time Analyzed	A.M. Peak Hour
Intersection Orientation	East-West
Project Description	Agnew Oil Lease

Site Information

Intersection	S.R. 150/Koengstein
Jurisdiction	Ventura County
East/West Street	State Route 150
North/South Street	Koengstein Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume (veh/h)		3	113				119	4						3		2
Percent Heavy Vehicles		3												3		3
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		126													5	
Capacity		1444													791	
v/c Ratio		0.09													0.01	
95% Queue Length		0.0													0.0	
Control Delay (s/veh)		7.5													9.6	
Level of Service (LOS)		A													A	
Approach Delay (s/veh)	0.2												9.6			
Approach LOS													A			

HCS 2010 Two-Way Stop Control Summary Report

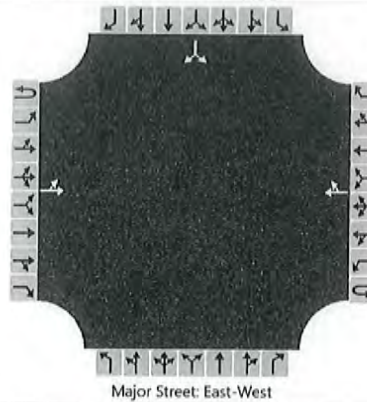
General Information

Analyst	Darryl Nelson
Agency/Co.	ATE
Date Performed	9/27/2018
Analysis Year	2018
Time Analyzed	P.M. Peak Hour
Intersection Orientation	East-West
Project Description	Agnew Oil Lease

Site Information

Intersection	S.R. 150/Koengstein
Jurisdiction	Ventura County
East/West Street	State Route 150
North/South Street	Koengstein Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume (veh/h)		4	167				115	5						2		2
Percent Heavy Vehicles		3												3		3
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

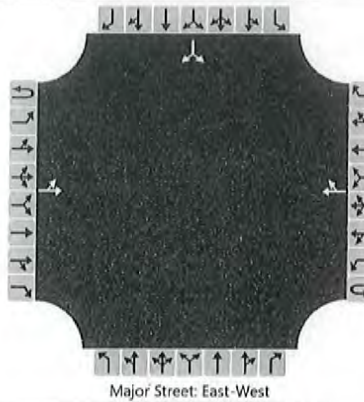
Flow Rate (veh/h)		186													4	
Capacity		1448													775	
v/c Ratio		0.13													0.01	
95% Queue Length		0.0													0.0	
Control Delay (s/veh)		7.5													9.7	
Level of Service (LOS)		A													A	
Approach Delay (s/veh)	0.2												9.7			
Approach LOS													A			

HCS 2010 Two-Way Stop Control Summary Report

General Information

Analyst	Darryl Nelson	Intersection	S.R. 150/Koengstein
Agency/Co.	ATE	Jurisdiction	Ventura County
Date Performed	9/27/2018	East/West Street	State Route 150
Analysis Year	2018 <i>+ Project</i>	North/South Street	Koengstein Road
Time Analyzed	A.M. Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Agnew Oil Lease		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume (veh/h)		4	113				119	5						4		3
Percent Heavy Vehicles		3												3		3
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		127													7	
Capacity		1443													794	
v/c Ratio		0.09													0.01	
95% Queue Length		0.0													0.0	
Control Delay (s/veh)		7.5													9.6	
Level of Service (LOS)		A													A	
Approach Delay (s/veh)	0.3												9.6			
Approach LOS													A			

HCS 2010 Two-Way Stop Control Summary Report

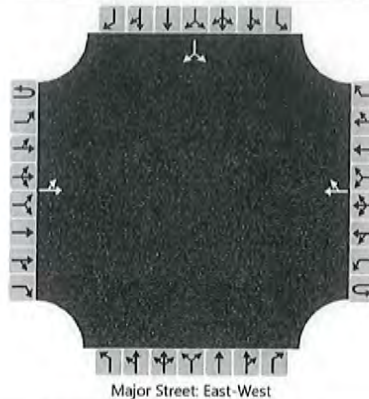
General Information

Analyst	Darryl Nelson
Agency/Co.	ATE
Date Performed	9/27/2018
Analysis Year	2018 + Project
Time Analyzed	P.M. Peak Hour
Intersection Orientation	East-West
Project Description	Agnew Oil Lease

Site Information

Intersection	S.R. 150/Koengstein
Jurisdiction	Ventura County
East/West Street	State Route 150
North/South Street	Koengstein Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume (veh/h)		5	167				115	6						3		3
Percent Heavy Vehicles		3												3		3
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

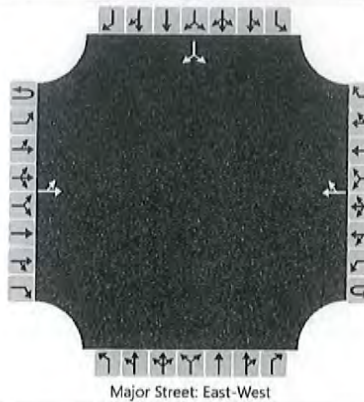
Flow Rate (veh/h)		187													6	
Capacity		1445													774	
v/c Ratio		0.13													0.01	
95% Queue Length		0.0													0.0	
Control Delay (s/veh)		7.5													9.7	
Level of Service (LOS)		A													A	
Approach Delay (s/veh)	0.2												9.7			
Approach LOS													A			

HCS 2010 Two-Way Stop Control Summary Report

General Information

Analyst	Darryl Nelson	Intersection	S.R. 150/Koengstein
Agency/Co.	ATE	Jurisdiction	Ventura County
Date Performed	9/27/2018	East/West Street	State Route 150
Analysis Year	2030	North/South Street	Koengstein Road
Time Analyzed	A.M. Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Agnew Oil Lease		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume (veh/h)		5	130				140	5						5		5
Percent Heavy Vehicles		3												3		3
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

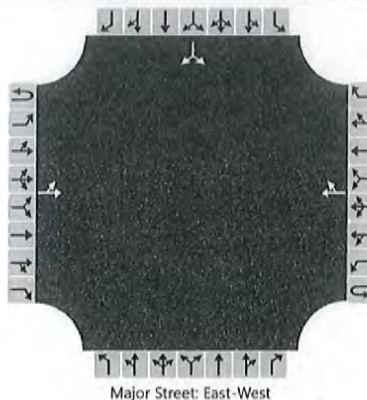
Flow Rate (veh/h)		146													10	
Capacity		1415													771	
v/c Ratio		0.10													0.01	
95% Queue Length		0.0													0.0	
Control Delay (s/veh)		7.6													9.7	
Level of Service (LOS)		A													A	
Approach Delay (s/veh)	0.3												9.7			
Approach LOS													A			

HCS 2010 Two-Way Stop Control Summary Report

General Information

Analyst	Darryl Nelson	Intersection	S.R. 150/Koengstein
Agency/Co.	ATE	Jurisdiction	Ventura County
Date Performed	9/27/2018	East/West Street	State Route 150
Analysis Year	2030	North/South Street	Koengstein Road
Time Analyzed	P.M. Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Agnew Oil Lease		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume (veh/h)		5	195				135	5						5		5
Percent Heavy Vehicles		3												3		3
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		217													10	
Capacity		1421													735	
v/c Ratio		0.15													0.01	
95% Queue Length		0.0													0.0	
Control Delay (s/veh)		7.5													10.0	
Level of Service (LOS)		A													A	
Approach Delay (s/veh)	0.2												10.0			
Approach LOS													A			

HCS 2010 Two-Way Stop Control Summary Report

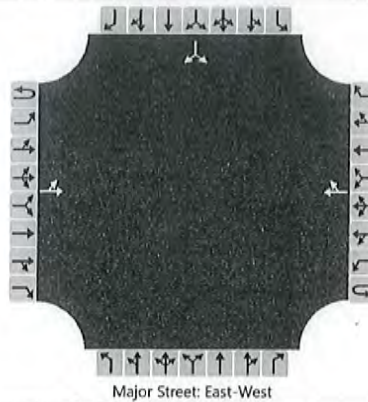
General Information

Analyst	Darryl Nelson
Agency/Co.	ATE
Date Performed	9/27/2018
Analysis Year	2030 + Project
Time Analyzed	A.M. Peak Hour
Intersection Orientation	East-West
Project Description	Agnew Oil Lease

Site Information

Intersection	S.R. 150/Koengstein
Jurisdiction	Ventura County
East/West Street	State Route 150
North/South Street	Koengstein Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume (veh/h)		6	130				140	6						6		6
Percent Heavy Vehicles		3												3		3
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

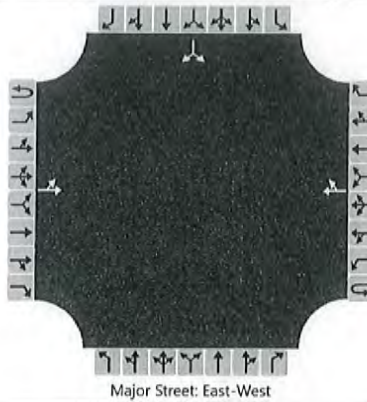
Flow Rate (veh/h)		148													14	
Capacity		1413													767	
v/c Ratio		0.10													0.02	
95% Queue Length		0.0													0.1	
Control Delay (s/veh)		7.6													9.8	
Level of Service (LOS)		A													A	
Approach Delay (s/veh)	0.4												9.8			
Approach LOS													A			

HCS 2010 Two-Way Stop Control Summary Report

General Information

Analyst	Darryl Nelson	Intersection	S.R. 150/Koengstein
Agency/Co.	ATE	Jurisdiction	Ventura County
Date Performed	9/27/2018	East/West Street	State Route 150
Analysis Year	2030 <i>+ Project</i>	North/South Street	Koengstein Road
Time Analyzed	P.M. Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Agnew Oil Lease		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume (veh/h)		6	195				135	6						6		6
Percent Heavy Vehicles		3												3		3
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		219													14	
Capacity		1419													732	
v/c Ratio		0.15													0.02	
95% Queue Length		0.0													0.1	
Control Delay (s/veh)		7.6													10.0	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)	0.3												10.0			
Approach LOS													B			

COLLISION DATA

California Department of Transportation

OTM22215

TSAR - ACCIDENT SUMMARY

Policy controlling the use of Traffic Accident Surveillance and Analysis System (TASAS) - Transportation Systems Network (TSN) Reports

1. TASAS - TSN has officially replaced the TASAS - "Legacy" database.
2. Reports from TSN are to be used and interpreted by the California Department of Transportation (Caltrans) officials or authorized representative.
3. Electronic versions of these reports may be emailed between Caltrans' employees only using the State computer system.
4. The contents of these reports shall be considered confidential and may be privileged pursuant to 23 U.S.C. Section 409, and are for the sole use of the intended recipient(s). Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply e-mail and destroy all copies of the original message. Do not print, copy or forward.

California Department of Transportation

OTM22215

TSAR - ACCIDENT SUMMARY

REPORT PARAMETERS:

REPORT DATE : 06/18/2019
REFERENCE DATE : 06/18/2019
SUBMITTOR : T7JFONSE
REPORT TITLE : ' Public Information Nelson, D.
EVENT ID : All Accidents Koenigstein Rd (Current) '

LOCATION CRITERIA: 4127485

FROM: 07-VEN-150 026.141 TO: 07-VEN-150 026.142

SELECTION CRITERIA:

Accidents Date Range:

From -- 04/01/2016 To -- 03/31/2019

No Data Selected With This Request

ATE SUPPLEMENTAL TRAFFIC ANALYSIS



ASSOCIATED TRANSPORTATION ENGINEERS

100 N. Hope Avenue, Suite 4, Santa Barbara, CA 93110 • (805) 687-4418 • FAX (805) 682-8509

Since 1978

Richard L. Pool, P.E.
Scott A. Schell, AICP, PTP

July 26, 2016

16060L05.WPD

Mr. Scott Price
Mirada Petroleum
15500 West Telegraph Road, Suite D#32
Santa Paula, California 93060

STATE ROUTE 150 AND KOENIGSTEIN ROAD ANALYSIS, VENTURA COUNTY, CALIFORNIA

Pursuant to your request, Associated Transportation Engineers (ATE) is providing the following evaluation for the State Route 150/Koenigstein Road intersection as it relates to the use of tanker trucks. ATE has conducted a field review of the intersection to determine the sight distance, evaluated collision data and existing traffic volumes on State Route 150. ATE evaluated the intersection based on the use by oil tanker trucks which will not exceed the legal limits. Oversized trucks would required to have a valid Transportation Permit.

Sight Distances. ATE conducted a field review to determine if sufficient sight distance exists for tanker trucks at the State Route 150/Koenigstein Road intersection. The Caltrans Highway Design Manual¹ sight distance standards were used for the sight distance analysis. The segment of State Route 150 is rolling and posted 35 MPH. Based on Caltrans criteria, the minimum required sight distance standard for a 35 MPH design speed is 250 feet.

The sight distance looking east along State Route was measured at 350 feet, in excess of the 250-foot minimum. The sight distance looking west along State Route 150 was measured at 500 which also exceeds the 250-foot minimum. The measured sight distance at the State Route 150/Koenigstein Road intersection exceeds the minimum site distance standard.

Collision Data. ATE reviewed the Caltrans collision data for the State Route 150/Koenigstein Road intersection contained in Appendix F of the December 2015 Subsequent Environmental Report for the Mirada Oil and Gas Project - Nesbitt Lease. The collision data covers a 12-year period from 2002 to 2013. The collision data is attached. There were 2 collisions with no reported fatalities and none involved large trucks.

¹ Highway Design Manual, Caltrans, 6th Edition.

Roadway Operation. Current traffic counts show that State Route 150 carries 2,800 vehicles per day in the vicinity of the project site. Existing traffic volumes and levels of service are summarized in Table 1. Levels of service are based on Ventura County engineering design capacities, which show that 2-lane highway such as State Route 150 has the capacity to carry approximately 11,000 vehicles per day.

Table 1
Traffic Volumes and Levels of Service

Roadway Segment	Roadway Classification	Roadway Capacity	Existing	
			ADT	LOS
State Route 150	Class II	11,000 ADT	2,800	LOS B
Note: LOS based on Ventura County Standard Engineering Design Capacities.				

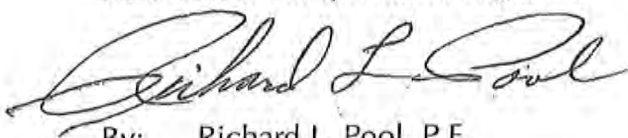
State Route 150 in the study-area roadways currently operates at LOS B. With the addition of less than 3 tanker trucks per day from the Agnew and Nesbitt CUP Modifications, State Route 150 would continue to operate at LOS B. LOS B represents relatively free flow operations with no congestion.

CONCLUSION

The operation of the Koenigstein Road/Highway 150 intersection has not exhibited any safety issues over the past 20 years. This observation is based upon data we collected and/or obtained this year.

It is ATE's staff conclusion that the intersection will continue to operate satisfactorily based upon the accident record data, where there were two accidents noted (neither involved tanker trucks), over a 12-year period. Koenigstein Road has a low traffic volume, the sight distance at the intersection in both directions, as measured, meets or exceeds the Caltrans value for the prevailing speed. ATE also reviewed the intersection geometry. The proposed addition of less than 3 one-way tanker trips per day through this intersection will not alter this condition. The expected tanker trucks utilized by the project will not exceed the legal limits. Oversized trucks would be required to have a valid Transportation Permit.

Associated Transportation Engineers



By: Richard L. Pool, P.E.
President



SIGNAL WARRANT CRITERIA

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE _____
 CALC _____ DATE _____
 CHK _____ DATE _____

DIST _____ CO _____ RTE _____ PM _____

Major St: _____ Critical Approach Speed _____ mph
 Minor St: _____ Critical Approach Speed _____ mph

Speed limit or critical speed on major street traffic > 40 mph ☐
 In built up area of isolated community of < 10,000 population ☐
☐ or ☐ } RURAL (R)
☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☐
 (Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume

100% SATISFIED YES ☐ NO ☐
 80% SATISFIED YES ☐ NO ☐

		MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				80% SATISFIED YES <input type="checkbox"/> NO <input type="checkbox"/>								
		U	R	U	R									
APPROACH LANES		1		2 or More										
Both Approaches Major Street		500 (400)	350 (280)	600 (480)	420 (336)									
Highest Approach Minor Street		150 (120)	105 (84)	200 (160)	140 (112)									

Condition B - Interruption of Continuous Traffic

100% SATISFIED YES ☐ NO ☐
 80% SATISFIED YES ☐ NO ☐

MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)					80% SATISFIED YES <input type="checkbox"/> NO <input type="checkbox"/>											
		U	R	U	R											
APPROACH LANES	1		2 or More													
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)												Hour
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)												

Combination of Conditions A & B

SATISFIED YES ☐ NO ☐

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes <input type="checkbox"/> No <input type="checkbox"/>
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes <input type="checkbox"/> No <input type="checkbox"/>

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume

SATISFIED* YES ☐ NO ☐

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street			
Higher Approach - Minor Street			

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<u>OR</u> , All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes <input type="checkbox"/>	No <input type="checkbox"/>

**WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied)**

SATISFIED YES ☐ NO ☐

PART A

SATISFIED YES ☐ NO ☐

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; <u>AND</u>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes <input type="checkbox"/>	No <input type="checkbox"/>

PART B

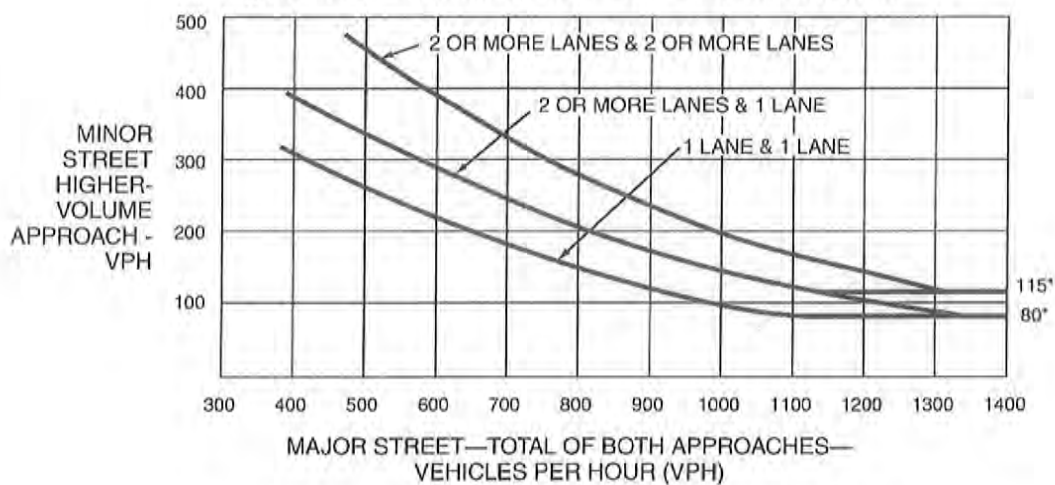
SATISFIED YES ☐ NO ☐

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street			
Higher Approach - Minor Street			

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes <input type="checkbox"/>	No <input type="checkbox"/>

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

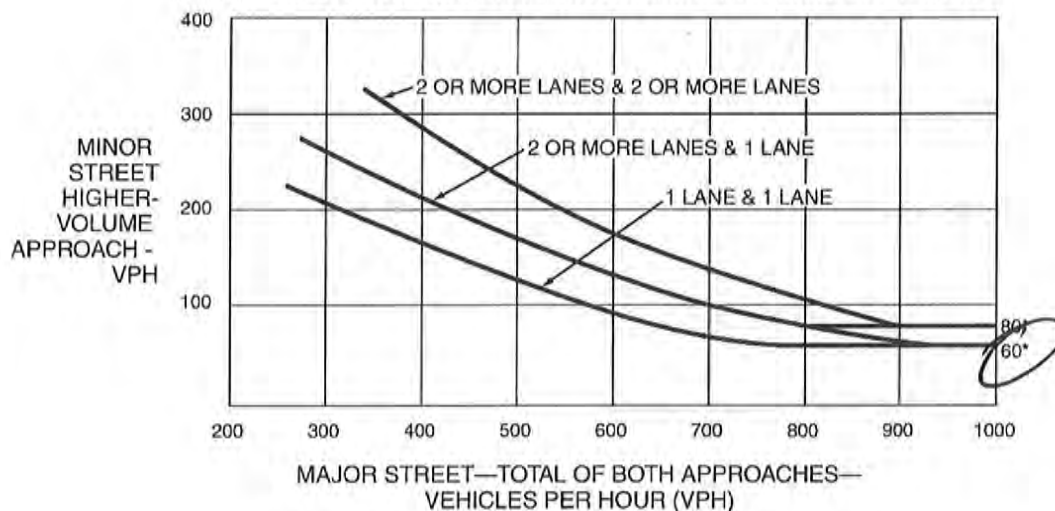
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 4 of 5)

**WARRANT 6 - Coordinated Signal System
(All Parts Must Be Satisfied)**

SATISFIED YES ☐ NO ☐

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	Yes <input type="checkbox"/> No <input type="checkbox"/>
On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.		Yes <input type="checkbox"/> No <input type="checkbox"/>
OR, On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.		

**WARRANT 7 - Crash Experience Warrant
(All Parts Must Be Satisfied)**

SATISFIED YES ☐ NO ☐

Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency.		Yes <input type="checkbox"/> No <input type="checkbox"/>	
REQUIREMENTS	Number of crashes reported within a 12 month period susceptible to correction by a traffic signal, and involving injury or damage exceeding the requirements for a reportable crash.	Yes <input type="checkbox"/> No <input type="checkbox"/>	
5 OR MORE			
REQUIREMENTS	CONDITIONS	Yes <input type="checkbox"/> No <input type="checkbox"/>	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		✓
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		
	OR, Warrant 4, Pedestrian Volume Condition Ped Vol ≥ 80% of Figure 4C-5 through Figure 4C-8		

**WARRANT 8 - Roadway Network
(All Parts Must Be Satisfied)**

SATISFIED YES ☐ NO ☐

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULFILLED
1000 Veh/Hr	During Typical Weekday Peak Hour _____ Veh/Hr and has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.		Yes <input type="checkbox"/> No <input type="checkbox"/>
	OR During Each of Any 5 Hrs. of a Sat. or Sun _____ Veh/Hr		
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ROUTE A	MAJOR ROUTE B
Hwy. System Serving as Principal Network for Through Traffic			
Rural or Suburban Highway Outside Of, Entering, or Traversing a City			
Appears as Major Route on an Official Plan			
Any Major Route Characteristics Met, Both Streets		Yes <input type="checkbox"/> No <input type="checkbox"/>	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

**Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)**

COUNT DATE _____

CALC _____ DATE _____

CHK _____ DATE _____

DIST _____ CO _____ RTE _____ PM _____

Major St: _____ Critical Approach Speed _____ mph

Minor St: _____ Critical Approach Speed _____ mph

Speed limit or critical speed on major street traffic > 40 mph..... ☐ or ☐ } **RURAL (R)**

In built up area of isolated community of < 10,000 population..... ☐ } **URBAN (U)**

(Based on Estimated Average Daily Traffic - See Note)

URBAN..... RURAL.....		Minimum Requirements EADT			
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied _____ Not Satisfied _____					
Number of lanes for moving traffic on each approach		Urban	Rural	Urban	Rural
Major Street	Minor Street				
1.....	1.....	8,000	5,600	2,400	1,680
2 or More.....	1.....	9,600	6,720	2,400	1,680
2 or More.....	2 or More.....	9,600	6,720	3,200	2,240
1.....	2 or More.....	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied _____ Not Satisfied _____					
Number of lanes for moving traffic on each approach		Urban	Rural	Urban	Rural
Major Street	Minor Street				
1.....	1.....	12,000	8,400	1,200	850
2 or More.....	1.....	14,400	10,080	1,200	850
2 or More.....	2 or More.....	14,400	10,080	1,600	1,120
1.....	2 or More.....	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B		2 CONDITIONS 80%		2 CONDITIONS 80%	
Satisfied _____ Not Satisfied _____					
No one condition satisfied, but following conditions fulfilled 80% or more..... A _____ B _____					

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Appendix D

Ventura County APCD

Agnew Lease Permit to Operate

APPENDIX F



Ventura County
Air Pollution
Control District

669 County Square Drive
Ventura, California 93003

tel 805/645-1400
fax 805/645-1444
www.vcapcd.org

Michael Villegas
Air Pollution Control Officer

PERMIT TO OPERATE Number 00004

Valid October 1, 2018 to September 30, 2019

This Permit Has Been Issued To The Following:

Company Name / Address:

Carbon California Operating
Co., LLC
270 Quail Ct., Suite B
Santa Paula, CA 93060

Facility Name / Address:

Carbon California Operating
Company
Ojai Oil Field Leases
Santa Paula, CA 93060

Permission Is Hereby Granted To Operate The Following:

This permit has been issued pursuant to Rule 35, "Elective Emission Limits" and therefore is not subject to Rule 33, "Part 70 Permits". As required by Rule 35.B.1, the permit and permitted emissions include emission units exempt from permit pursuant to Rule 23, "Exemptions From Permit".

The ROC permitted emissions from oil wells are considered to be fugitive emissions and are not subject to the ROC applicability thresholds of Rule 33, "Part 70 Permits".

Ojai Fee Lease (Former VCAPCD Permit No. 0004)

81 - Ojai Fee Lease Oil Wells (Nos. 45, 46, 47, 49, 51 - 59, 61, 62, 63, 64, 68, 69, 70, 71, 77, 78, 79, 80, 81, 82, 84 - 99, 100 - 110, 112 - 128, 130, 133, 205, 206, 207, 501, 502, 504, 505, 507)

Tank Farm No. 1

- 1 - 2400 Barrel Wash Tank (T-3503)
- 1 - 1000 Barrel Produced Water Tank (ID T-3505, AC-410)
- 1 - 1000 Barrel Crude Oil Storage Tank (T-3781)
- 1 - 1000 Barrel Crude Oil Storage Tank (T3782), Standby
- 1 - 1000 Barrel LACT Tank (T-3508), Standby
- 1 - 1000 Barrel LACT Tank (T-3509)
- 1 - 1000 Barrel Wash Tank (T-3504, AC-410)
- 1 - 750 Barrel Wash Tank (T-3353)
- 1 - 250 Barrel Gauge Test Tank (T-3354)
- 1 - 225 Barrel Gauge Test Tank (T-3355)
- 1 - 12.57 Sqft-Surface Sump
- 1 - Oil Loading Facility, emergency use only
- 1 - 165 BHP IR JVG-6 Natural Gas Engine, rich burn, equipped with a NSCR system for NOx control (OOS)
- 1 - 225 BHP IR JVG-8 Natural Gas Engine, rich burn, equipped with a NSCR system for NOx control

VCAPCD Permit To Operate Number 00004
Issued To Carbon California Operating Company
Valid October 1, 2018 to September 30, 2019

- 1 - 0.08 MMBTU/hr Glycol Reboiler, part of a Dehydrator System rated at 2.4 MMSCFD, electric powered reboiler, with glycol vent piped to the V.R. system at the crude oil storage tanks, utilizing triethylene glycol (TEG). Control system is equipped with a liquid separator.
- 1 - 4.25 MMBTU/hr Rite Model 425-SG Boiler, equipped with Low NOx burners and Flue Gas Recirculation System (OOS)
- 1 - 4.25 MMBTU/hr Ajax Model SGXB 4250-D Boiler, Standby (OOS)
- 1 - Emergency Flare (Ojai Fee Lease), consisting of two flare tips attached to a single gas line, combined capacity estimated at 45 MMBTU/hr, flare tip height: 20 feet

Tank Farm No. 2

- 1 - 500 Barrel Crude Oil Storage Tank (1)
- 2 - 500 Barrel Gauge Test Tanks (2, 3)
- 1 - 200 Barrel Gauge Test Tank
- 1 - 0.13 MMBTU/hr Glycol Reboiler, part of a Dehydrator System rated at 2.4 MMSCFD, with glycol vent piped to the reboiler burner, utilizing triethylene glycol (TEG). The control system is equipped with a liquid separator.

Tank Farm No. 3

- 1 - 500 Barrel Crude Oil Storage Tank (R29358)
- 2 - 250 Barrel Gauge Test Tanks (R29353, R29354)

Silverthread Area (Former VCAPCD Permit No. 0951)

- 24 - Silverthread Lease Oil Wells (Nos. 1, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29)
- 3 - 1000 Barrel LACT Tanks (T-3540, T-3541, T-3539 [Standby])
- 1 - 500 Barrel Produced Water Tank
- 1 - 500 Barrel Produced Water Tank (overflow), rectangular
- 1 - 240 Sqft-Surface Sump (open top sump tank), exempt from all requirements: ROC < 5 mg/l
- 1 - 180 BHP Ajax DPC-180 Natural Gas Engine (Unit 1), operated less than 200 hours per year for VCAPCD Rule 74.9.D.2 compliance (OOS)
- 1 - Oil Loading Facility, emergency use only
- 1 - 0.12 MMBTU/hr Glycol Reboiler, part of a Dehydrator System rated at 1.0 MMSCFD with glycol vent piped to the vapor recovery system, utilizing triethylene glycol (TEG). Control system is equipped with a natural draft condenser and a two phase separator.
- 1 - Emergency Flare (Silverthread), consisting of two flare tips attached to a single gas line, combined capacity estimated at 40 MMBTU/hr, flare tip height: 20'

Hamp Lease (Former VCAPCD Permit No. 00388)

- 22 - Hamp Lease Oil Wells (Nos. 29, 39, 40, 45, 46, 47, 48, 49,

VCAPCD Permit To Operate Number 00004
Issued To Carbon California Operating Company
Valid October 1, 2018 to September 30, 2019

- 52, 53, 59, 61, 62, 63, 65, 66, 67, 68, 70, 71, 73, 99)
- 1 - 1000 Barrel LACT Tank (Well Site No. 2, Tank No. T-4632)
- 3 - 1000 Barrel LACT Tanks (T-4622, T-4623, and T-4621)
- 1 - 500 Barrel Produced Water Tank (T-4643)
- 1 - 300 Barrel Produced Water Tank (T-4647)
- 1 - 1000 Barrel Produced Water Tank (Storm Water) (T-4645)
- 1 - 300 Barrel Wash Tank, Diameter 9.25', Height 24' (T-4624)
- 1 - 0.7 MMBTU/hr Glycol Reboiler, 5.0 MMSCFD, with glycol vent piped to the suction side of the existing vapor recovery system at the 1,000 bbl LACT (1047), utilizing triethylene glycol (TEG)
- 1 - Gas Membrane Separator, with treated gas to sales pipeline, waste gas to flare or for use as fuel in the engines or heaters
- 1 - 20 MMBTU/hr Sur-Lite, Model SLF 555, Flare, Equipped with electric ignitor, combustion air intake louvers controlled by temperature sensors, and a rectangular stack equipped with three 4-inch sample ports. The flare combusts a low BTU permeate gas from the CO2 membrane unit. (OOS)
- 1 - Oil Loading Facility, emergency use only
- 1 - Emergency Flare (Hamp Lease), capacity estimated at 40 MMBTU/hr, flare tip height: 8'

Ferndale Ranch Lease (Former VCAPCD Permit to Operate No. 0380)

- 11 - Ferndale Ranch Lease Oil Wells (Nos. 1, 3, 4, 107, 110, 211, 214, 215, 712, 716, 717)
- 2 - 64 Sqft-Surface Sumps

Harth Lease (Former PO No. 00381)

- 2 - Oil Wells (Nos. 1 and 2)
- 1 - 1000 Barrel Crude Oil Storage Tank
- 1 - 150 Barrel Wash Tank
- 1 - 120 Barrel Waste Water Tank
- 2 - 64 Sqft-Surface Sumps
- 1 - Oil Loading Facility

Hamp Fee Lease (Former PO No. 00493)

- 16 - Oil Wells (Nos. 30, 34, 36, 37, 38, 41, 43, 44, 50, 51, 55, 57, 58, 64, 69, 73)
- 2 - 250 Barrel Crude Oil Storage Tanks
- 1 - 500 Barrel Crude Oil Storage Tank
- 1 - 160 Barrel Wash Tank
- 1 - 200 Barrel Produced Water Tank
- 1 - 3" Emergency Flare, rating estimated at 11.7 MMBTU/hr, height: 16', equipped with totalizing gas flow meter
- 1 - 2" Flare, Exempt from permit per Rule 23.C.1 (< 1 MMBTU/hr), included in permitted emissions per Rule 35
- 1 - 40 BHP Natural Gas (Field Gas) Engine, operating gas compressor, Exempt from permit per Rule 23.D.6 (< 50 BHP), included in permitted emissions pursuant to Rule 35

Agnew Lease (Former PO No. 00955)

VCAPCD Permit To Operate Number 00004
Issued To Carbon California Operating Company
Valid October 1, 2018 to September 30, 2019

- 3 - Oil Wells (Agnew Nos. 1, 2, 3)
- 1 - 500 Barrel Crude Oil Storage Tank (W - No. 1)
- 1 - 500 Barrel Wash Tank (E - No. 2)
- 2 - 250 Barrel Produced Water Tanks
- 1 - Oil Loading Facility
- 1 - 0.8 MMBTU/hr Agnew Lease Flare, Exempt from permit per Rule 23.C.1 (< 1 MMBTU/hr), included in permitted emissions pursuant to Rule 35

ADP Federal Lease (Former PO No. 07143)

- 1 - Oil Well (No. 1)
- 1 - 200 Barrel Crude Oil Storage Tank
- 1 - 200 Barrel Wash Tank
- 1 - 160 Barrel Wastewater Tank
- 1 - Oil Loading Facility
- 1 - 0.8 MMBTU/hr Flare, Exempt from permit per Rule 23.C.1 (< 1 MMBTU/hr), included in permitted emissions pursuant to Rule 35

Nesbitt Lease (Former PO No. 07143)

- 3 - Oil Wells (Nos. 1, 2, 4)
- 2 - 250 Barrel Crude Oil Storage Tanks
- 1 - 391 Barrel Wash Tank
- 1 - Oil Loading Facility

MP Lane Federal Lease (Former PO No. 07383)

- 1 - Oil Well (No. 1)
- 1 - 480 Barrel Crude Oil Storage Tank
- 1 - 36 Sqft-Surface Sump
- 1 - Oil Loading Facility

For Use Throughout The Leases

- 13 - 500 Barrel Portable Tanks (closed top)
- 1 - Wipe Cleaning Operation Using Solvent ≤ 25 g/l ROC (Exempt-Rule 23.F.10.b)

Heaters and/or Boilers - Maximum of ten (10) units rated at less than 1 MMBTU/hr (Included in permitted emissions pursuant to Rule 35. No fuel metering required. Permitted emissions based on full-time use.)

This Permit Has Been Issued Subject To The Following Conditions:

1. Permitted Emissions	Tons/Year	Pounds/Hour
Reactive Organics	86.16	44.08
Nitrogen Oxides	21.03	14.23
Particulate Matter	1.26	0.98
Sulfur Oxides	1.30	0.61

VCAPCD Permit To Operate Number 00004
 Issued To Carbon California Operating Company
 Valid October 1, 2018 to September 30, 2019

Carbon Monoxide	80.34	95.06
-----------------	-------	-------

2. The following annual limits shall not be exceeded:

FUEL CONSUMPTION LIMITS:

Ojai Fee Lease:		
225 BHP IR JVG-8 Engine	2.0	MMCF/Yr Natural Gas
Ojai Fee Emergency Flare - Planned Use	33.0	MMCF/Yr Natural Gas
Total Usage (Planned and Emergency)	99.0	MMCF/Yr Natural Gas

Silverthread Area:		
Silverthread Emergency Flare-Planned Use	28.8	MMCF/Yr Natural Gas
Total Usage (Planned and Emergency)	86.4	MMCF/Yr Natural Gas

Hamp Lease:		
0.7 MMBTU/hr Glycol Reboiler	5.4	MMCF/Yr Natural Gas
Hamp Lease Emergency Flare - Planned Use	10.5	MMCF/Yr Natural Gas
Total Usage (Planned and Emergency)	31.5	MMCF/Yr Natural Gas

Hamp Fee Lease:	
40 BHP Compressor Engine	No Limit
3" Emergency Flare	No Limit
2" Flare (< 1 MMBTU/Hr)	No Limit

Agnew Lease:	
0.8 MMBTU/hr Flare	No Limit

ADP Federal Lease:	
0.8 MMBTU/hr Flare	No Limit

CRUDE OIL THROUGHPUT LIMITS:

Ojai Fee Lease, Tank Farm No. 1:	
Tank Nos. T-3781 and T-3782 (combined)	292,700 BOPY
Tank No. T-3354	7,300 BOPY
Tank No. T-3355	7,300 BOPY
Crude Oil Loading Facility	153,298 BOPY

Ojai Fee Lease, Tank Farm No. 2:	
Tank No. 1	213,000 BOPY
Tank No. 2	130,200 BOPY
Tank No. 3	130,200 BOPY
Test Tank 200 bbl	36,500 BOPY

Ojai Fee Lease, Tank Farm No. 3:	
Tank No. R29358	77,000 BOPY
Tank No. R29353	5,000 BOPY
Tank No. R29354	5,000 BOPY

Silverthread Area	
Crude Oil Loading Facility	138,309 BOPY

VCAPCD Permit To Operate Number 00004
Issued To Carbon California Operating Company
Valid October 1, 2018 to September 30, 2019

Hamp Lease	
Crude Oil Loading Facility	329,100 BOPY
Harth Lease	
1,000 bbl Crude Oil Storage Tank	15,000 BOPY
Crude Oil Loading Facility	15,000 BOPY
Hamp Fee Lease	
Crude Oil Storage Tanks (combined t-put)	18,250 BOPY
Agnew Lease	
Crude Oil Storage Tank	7,300 BOPY
Crude Oil Loading Facility	7,300 BOPY
ADP Federal Lease	
Crude Oil Storage Tank	2,160 BOPY
Crude Oil Loading Facility	2,160 BOPY
Nesbitt Lease	
Crude Oil Storage Tanks (combined t-put)	9,465 BOPY
Crude Oil Loading Facility	9,465 BOPY
MP Lane Federal Lease	
Crude Oil Storage Tank	738 BOPY
Crude Oil Loading Facility	738 BOPY

In order to comply with this condition, the permittee shall maintain monthly records of fuel consumption and crude oil throughputs. The monthly fuel consumption levels and crude oil throughputs shall be summed for the previous 12 months. Fuel consumption and crude oil throughput totals for any of these 12 month periods in excess of the specified limits shall be considered a violation of this condition.

Note that there are planned flaring limits and total flaring limits for each flare. The total flaring limits include emergency use of the flares. The monthly flaring records shall differentiate between emergency usage and planned flaring events. Emergency use is defined as disposal of process gases in the event of unavoidable process upsets. A planned flaring event includes, but is not limited to, routine flaring to comply with Rule 71.1; or flaring due to planned maintenance performed on wells, equipment, or pipelines by the operator or performed by another operator accepting the produced gas. If a process upset (emergency use) cannot be rectified in a reasonable amount of time, the use of the flare may be determined to be a planned flaring event.

Prior to exceeding these limits, the permittee shall submit an application to modify this condition.

3. All permit conditions, throughput limits, and gas consumption limits on this permit are federally enforceable pursuant to Rule 35, "Elective Emission Limits". This was established pursuant to

Application No. 00004-401. Any subsequent new emissions units, throughput limit increases, or gas consumption limit increases are subject to Rule 26, "New Source Review", and are considered to be federally enforceable as Rule 26 is federally enforceable.

4. This permit has been issued pursuant to Rule 35, "Elective Emission Limits". Some exempt emissions units, pursuant to Rule 23, "Exemptions From Permit", have been included in the permitted emissions pursuant to Rule 35. There is one (1) less than 50 BHP compressor engine utilized at the facility (Hamp Fee Lease); permitted emissions have been included for this engine at full-time use pursuant to Rule 35. No other stationary engines rated less than 50 BHP (well, oil pump, water pump, compressor engines, etc.) shall be operated at this stationary source. Prior to operating any engines rated less than 50 BHP, the permittee shall submit an application to the District to modify the permit. The use of engines complying with the California Portable Equipment Registration Program (PERP) that are used for well drilling and/or repair and maintenance is not prohibited.

5. The following wells shall be free flowing, operated on gas lift, or operated with electric motor driven artificial lift equipment:

Ojai Fee Lease Nos. 77, 103, 104, 117, 122, 124, 126, 127, 128, 130, 133, 206, 207

Silverthread Lease Nos. 15, 23, 25, 26, 28, 29

Hamp Lease Nos. 46, 99

Ferndale Ranch Lease Nos. 712, 716, 717

Hamp Fee Lease Nos. 30, 34, 36, 37, 38, 41, 43, 44, 50, 51, 64, 73

Nesbitt Lease No. 2

Agnew Lease No. 3

This condition is applied as Best Available Control Technology (BACT).

6. Well ARCO No. 2 located on the Silverthread Lease shall be operated only as a water injection well. Prior to operating this well as a crude oil production well, permittee shall first apply for an Authority to Construct. This Authority to Construct will be subject to Rule 26 (New Source Review) and as such may be subject to BACT and offsets.

7. All well drilling activities shall comply with Rule 74.16, "Oilfield Drilling Operations". This includes, but is not limited to, the following requirements:

a) Pursuant to Rule 74.16.B.1, all drilling operations shall be powered by grid power unless exempted by Rule 74.16.C.

b) Pursuant to Rule 74.16.B.2, if a drilling operation is exempt from Rule 74.16.B.1, NOx emissions from drilling engines, or any exhaust stack of multiple engines permanently manifolded together, shall not exceed 515 ppmvd corrected to 15% oxygen.

This permit does not authorize the operation of any non-vehicular engine of 50 HP, or greater, for well drilling or workover operations. Prior to using such an engine, the engine owner shall obtain a Permit to Operate for the engine.

8. Tanks shall comply with Rule 71.1, "Crude Oil Production and Separation". This includes, but is not limited to, the following requirements:
 - a) Pursuant to Rule 71.1.B.1.a, tanks not listed above as being exempt from vapor recovery shall be equipped with a properly installed, maintained, and operated vapor recovery system. The vapor disposal portion of the vapor recovery system shall consist of a system that directs all vapors to a fuel gas system, a sales gas system, or to a permitted flare or a flare rated at less than 1.00 MMBTU per hour that combusts reactive organic compounds.
 - b) Pursuant to Rule 71.1.D.2, for tanks not listed above as being exempt from vapor recovery, the vapor recovery requirements of Rule 71.1.B.1.a shall not apply during maintenance operation on vapor recovery systems or tank batteries if the District Enforcement Section is notified verbally at least 24 hours prior to the maintenance operation, and if the maintenance operation will take no more than 24 hours to complete.
 - c) A tank's hatches and other inlet and outlet piping connections are components subject to the leak requirements of Rule 74.10, "Components at Crude Oil and Natural Gas Production and Processing Facilities".
9. Any portable tanks used at the facility shall comply with Rule 71.1, "Crude Oil Production and Separation". This includes, but is not limited to, the following requirements:
 - a) Pursuant to Rule 71.1.B.3, portable tanks used to store or hold crude oil shall be equipped with both a closed cover that is impermeable to ROC vapors and a pressure-vacuum valve set by the manufacturer or according to the manufacturer's recommendations. A portable tank shall be defined as a tank that can be moved from one location to another by attachment to a motor vehicle without having to be dismantled.
 - b) Pursuant to Rule 71.1.D.1.c, the vapor recovery requirements of Rule 71.1.B.1 shall not apply to portable tanks if the portable tank: is not used to increase the storage capacity of an existing tank battery, is not located within 150 feet of a tank battery that is required to have vapor recovery, and is being used during maintenance activity at a tank battery or well and has not held or stored crude oil for more than 60 days.
 - c) A portable tank's hatches and other inlet and outlet piping

connections are components subject to the leak requirements of Rule 74.10, "Components at Crude Oil and Natural Gas Production and Processing Facilities".

10. Permittee shall comply with all provisions of Rule 74.10, "Components at Crude Oil Production and Natural Gas Production and Processing Facilities". Permittee shall submit an Operator Management Plan to the District Compliance Division for approval and shall submit revisions to the plan as necessary. Permittee shall continue to implement the leak inspection and repair requirements of the Operator Management Plan.
11. The permittee shall comply with all applicable requirements of 40 CFR, Part 60, Subpart OOOO, "Standards of Performance (NSPS) for Crude Oil and Natural Gas Production, Transmission, and Distribution."
12. No produced fluids or ROC containing material, except those that might normally be present in storm water runoff shall be stored in the 1,000 bbl storm water tank (T-4645) at the Hamp Lease. The tank shall be emptied within a week of the end of a storm. Any request to the use the tank for purposes other than storm water storage shall be subject to District Rule 26, "New Source Review". This condition is applied as BACT.
13. The oil loading facilities at the Ojai Fee Lease, Silverthread Area, and Hamp Lease are for emergency purposes only and shall only be used at times that an oil pipeline is not available for use. The Hamp Lease emergency loading rack may be used for facility maintenance as noted below. These emergency loading racks are required to comply with the notification and vapor recovery requirements stated below. This condition is applied as BACT.

At least twenty-four (24) hours prior to commencing use of either of the crude oil loading facilities, the permittee shall notify the APCD Compliance Division in writing of such fact. The written notice shall include the reason requiring the use of the loading facility and the expected duration of the facility's use. Upon terminating use of the crude oil loading facility, permittee shall notify the APCD Compliance Division of such fact and the quantity of crude oil shipped by truck during the emergency period.

Vapor recovery shall be used at all times that the crude oil loading facility is in use. Loading of transport trucks shall be accomplished by bottom fill and all dome hatches on the transport truck being loaded shall be kept closed at all times during crude oil loading.

The permittee is authorized to transfer 20,000 bbl of oil per year through the Hamp Lease emergency loading rack for use within the lease for well and facility maintenance, provided that such use does not result in an increase in tank throughputs. The permittee shall keep records of the dates, the amount of oil transferred

through the loading rack for the purpose of well and facility maintenance, and a description of the maintenance activity.

Oil loading racks at following leases are not limited to the emergency use only requirements: Harth, Hamp Fee, Agnew, ADP Federal, Nesbitt, and MP Lane Federal. All oil shall leave any lease by pipeline if the lease does not have a permitted loading rack.

14. The crude oil loading facilities shall comply with Rule 71.3, "Transfer of Reactive Organic Compound Liquids". This includes, but is not limited to, the following requirements:
 - a) Pursuant to Rule 71.3.B.2.a, no person shall transfer ROC liquids into any ROC delivery vessel without utilizing a bottom-loaded vapor recovery system that prevents the displaced vapors during loading from being released into the atmosphere. The vapor recovery system shall be capable of collecting all ROC vapors, and shall have a vapor return or condensation system that connects to a gas pipeline recovery and distribution system or to a vapor disposal system with a control efficiency of at least 90 percent by weight.
 - b) Pursuant to Rule 71.3.B.2.b.2, no person shall transfer ROC liquids into any ROC delivery vessel without utilizing a combination of overfill devices and/or procedures, submitted in writing to the APCD, that is at least as effective in preventing overfill spillage as the system in Rule 71.3.B.2.b.1. The permittee has submitted an alternative primary and secondary overfill protection system and shall comply with Rule 71.3.B.2.b.2 as discussed below.
 - c) Pursuant to Rule 71.3.B.2.c, no person shall transfer ROC liquids into any ROC liquid delivery vessel without utilizing either a block and bleed valve system or other connectors with equivalent spill prevention characteristics.
 - d) Pursuant to Rule 71.3.D.1, permittee shall annually monitor one complete loading operation for leaks and for proper operation of the loading equipment and delivery vessel vapor recovery and overfill protection systems. Permittee shall maintain records of the loading inspection as required by Rule 71.3.F.1. These records shall be maintained at the facility for the previous two years and made available to APCD personnel upon request.
15. The crude oil loading facilities shall comply with Rule 71.3, "Transfer of Reactive Organic Compound Liquids". This includes, but is not limited to, the following requirements:
 - a) Pursuant to Rule 71.3.B.1, no person shall transfer crude oil into any crude oil delivery vessel without either using a submerged fill pipe or bottom loading.

16. In order to comply with the primary and secondary overfill protection system requirements of Rule 71.3, "Transfer of Reactive Organic Compound Liquids", permittee has submitted an alternative system and shall comply with Rule 71.3.B.2.b.2 by utilizing only delivery vessels equipped with a resettable turbine meter and the following procedure:
 - a) Determine the gravity of the oil.
 - b) Calculate the weight of the oil per barrel (use API Table 8).
 - c) Calculate the maximum net weight of the cargo, in barrels, that can legally be transported. This weight shall not exceed the capacity or weight limitation of any liquid delivery vessel.
 - d) Continuously observe the turbine meter in order to cease transfer at the calculated number of barrels.
 - e) Time each loading operation to determine an average time to fill a delivery vessel to legal weight. Utilize this time limit in conjunction with the turbine meter to prevent overfill.
17. Any sump or pit not listed above as exempt from a cover shall comply with Rule 71.4, "Petroleum Sumps, Pits, Ponds, and Well Cellars". This includes, but is not limited to, the following requirements:
 - a) Pursuant to Rule 71.4.B.2, no person shall use a second or third stage sump, pit, or pond unless it is equipped with a properly installed and maintained cover which does not leak, which is impermeable to ROC vapors, and which covers at least 90 percent of the liquid surface area of the sump, pit, or pond. All covers shall be closed at all times except during sampling or attended maintenance operations.
 - b) Pursuant to Rule 71.4.C.2, the cover requirements of Rule 71.4.B.2 shall not apply during maintenance operation on sumps or pits if the Air Pollution Control District is notified verbally at least 24 hours prior to the maintenance operation, and if the maintenance operation will take no more than 24 hours to complete.
 - c) The cover's sealing mechanism and other inlet and outlet piping connections are components subject to the leak requirements of Rule 74.10, "Components at Crude Oil and Natural Gas Production and Processing Facilities".
18. The 240 sqft-surface area sump located at the Silverthread Area is exempt from Rule 71.4 based on the ROC content of the liquid entering the sump to be less than 5 milligrams per liter. Pursuant to Rule 71.4.C.1.c, the ROC content of the liquid entering the sump shall not exceed 5 ml/l. The District may require an ROC content analysis of the liquid entering the sumpt pursuant to Rule 71.4.F.

19. The combustion units on permit shall be fired on gaseous fuel only.
20. Permittee shall comply with all provisions of Rule 71.5, "Glycol Dehydrators". This includes, but is not limited to, the following requirements:
 - a) The gas dehydration system's regenerator vents shall be controlled to reduce the emissions of ROC (Reactive Organic Compounds). Permittee has chosen to direct all glycol vent emissions into the gas gathering systems as required by Rule 74.5.B.1.a.1 for the Ojai Fee Tank Farm No. 1, Silverthread Area, and Hamp Lease glycol dehydrators. Upon entry into the tank vapor recovery system, the glycol vent emissions are subject to Rule 71.1, "Crude Oil Production and Separation".
 - b) The condensed hydrocarbon liquid stream from the glycol dehydration vent shall be stored and handled in a manner that will not cause or allow evaporation ROC into the atmosphere as required by Rule 71.5.B.2.
 - c) The glycol unit's emission control system shall be maintained in a leak-free condition as required by Rule 71.5.B.3.
 - d) Maintain a current file of glycol dehydrator information as required by Rule 71.5.D.1.
21. Permittee shall comply with all provisions of Rule 71.5, "Glycol Dehydrators". This includes, but is not limited to, the following requirements:
 - a) The gas dehydration system's regenerator vents shall be controlled to reduce the emissions of ROC (Reactive Organic Compounds). Pursuant to Rule 71.5.B.1.a.2, permittee has chosen to direct all glycol vent emissions into the reboiler burner of the Ojai Fee Tank Farm No. 2 glycol dehydrator which meets the requirements of Rule 71.5.B.1.b.
 - b) The condensed hydrocarbon liquid stream from the glycol dehydration vent shall be stored and handled in a manner that will not cause or allow evaporation ROC into the atmosphere as required by Rule 71.5.B.2.
 - c) The glycol unit's emission control system shall be maintained in a leak-free condition as required by Rule 71.5.B.3.
 - d) Maintain a current file of glycol dehydrator information as required by Rule 71.5.D.1.
22. Pursuant to Rule 71.5.B.1.b, the glycol reboiler that controls the ROC emissions from the glycol dehydrator shall have all of the following features, as a minimum:

- a) Operate continually in a smokeless mode.
 - b) Electronic controlled ignition system with a malfunction alarm system if the pilot flame fails.
 - c) Liquid knock out system to condense any condensable vapors.
 - d) Sight glass ports, if the flame is not visible.
23. Permittee shall maintain the following information for the glycol dehydrator: facility name, APCD Permit to Operate number, location, size of glycol dehydrator reboiler (MMBTU/Hr), amount of gas dehydrated (MMSCFD) and type of glycol used, description of ROC control system, flow diagram of dehydrator and ROC control system, and maintenance records of the ROC control system. These records shall be maintained at the facility for the previous two years and made available to APCD personnel upon request.
24. The Glycol Dehydrator(s) at this facility is exempt from the federal NESHAP requirements of 40 CFR Part 63, Subpart HH, "National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities". This NESHAP exempts a facility that exclusively processes, stores, or transfers "black oil" which is defined as hydrocarbon (petroleum) liquid with an initial producing gas-to-oil ratio (GOR) less than 0.31 cubic meters per liter and an API gravity of less than 40 degrees. This GOR is approximately equal to 1740 standard cubic feet per barrel.
25. The 225 BHP Ingersoll Rand JVG-8 Rich Burn Engine Emission Limitations:
- a) Oxides of nitrogen (NOx expressed as NO2) emissions shall not exceed 25 ppmvd referenced at 15% oxygen on a dry basis. Alternatively, a minimum NOx reduction of 96% by weight shall be maintained, as measured concurrently across an emission control device. This limitation is applied for Rule 74.9.B.1 and Rule 74.9.B.2 compliance.
 - b) Reactive organic compound (ROC) emissions shall not exceed 250 ppmvd referenced at 15% oxygen on a dry basis, expressed as methane. This limitation is applied for Rule 74.9.B.1 compliance.
 - c) Carbon monoxide (CO) emissions shall not exceed 4,500 ppmvd referenced at 15% oxygen on a dry basis. This limitation is applied for Rule 74.9.B.1 compliance.

In order to comply with this condition, the permittee shall have each engine's emissions tested no less than once every 24 months. Testing shall be performed by an independent testing contractor at the engine's expected maximum operating load in accordance with Rule 74.9.G, which includes California ARB Method 100 for oxides of nitrogen, carbon monoxide, and stack gas oxygen and EPA Method 18

or 25 for reactive organic compounds.

26. Pursuant to Rule 74.9.C, the permittee shall maintain a District approved Engine Operator Inspection Plan. The plan shall include a specific emission inspection procedure to assure that an engine is operated in continual compliance with the provisions of Rule 74.9. At a minimum, inspections shall be conducted quarterly unless the engine operated less than 32 hours in each of the three months of the applicable quarter, as measured by a non-resettable elapsed operating hour meter.

Pursuant to Rule 74.9.B.5, a screening analysis of NOx and CO emissions shall be performed quarterly unless the biennial source test specified in Subsection B.4 is required, or the engine operated less than 32 hours in each of the three months of the applicable quarter, as measured by a non-resettable elapsed operating hour meter. The screening analyses shall be performed using a portable analyzer either verified by the Environmental Protection Agency or approved in writing by the APCO. The portable analyzer shall be calibrated, maintained and operated in accordance with the recommendations of the manufacturer.

27. Pursuant to Rule 74.9.E, Recordkeeping Requirements, the permittee shall maintain an inspection log for each engine containing, at a minimum, the following data:
- a) Identification and location of each engine subject to Rule 74.9.
 - b) Date and results of each screening analysis and inspection and a summary of any emissions corrective maintenance action taken.
 - c) Any additional information required by the Engine Operator Inspection Plan.
 - d) For each engine exempt from quarterly screening analysis pursuant to Subsection B.5.b of Rule 74.9 and inspection pursuant to subsection C.4, total hours of operation shall be recorded monthly. Records shall be maintained for a period of 2 years after the date of each entry.

The permittee shall maintain the inspection log for a period of 2 years after the date of each entry. The log shall be made available for inspection by the District upon request.

28. Pursuant to Rule 74.9.F, Reporting Requirements, within 45 days of the end date of each permit renewal period, the operator of a permitted engine subject to the provisions of the rule shall provide the District with the following information:
- a) Engine manufacturer, model number, operator identification number and location of each engine.

- b) A summary of maintenance reports during the renewal period, including quarterly screening data if applicable.

For each engine exempt pursuant to Subsection D.2, total annual operating hours shall be reported annually. For each engine exempt pursuant to subsection D.3, total annual hours of maintenance operation shall be reported annually. Reports shall be provided to the District after every calendar year by February 15.

- 29. On and after October 19, 2013, the 225 BHP IR JVG-8 Rich Burn Engine shall comply with 40 CFR Part 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE NESHP). This includes, but is not limited to, the following requirements for non-emergency 4 stroke rich burn spark ignited engines rated at less than or equal to 500 BHP that commenced construction before June 12, 2006:

Pursuant to 40 CFR Part 63.6603, Table 2d, the permittee shall meet the following requirements:

- a) Change oil and filter every 1,440 hours of operation, or annually, whichever comes first. Permittee shall have the option to utilize an oil analysis program as described in 40 CFR Part 63.6625(i) in order to extend the specified oil change requirement; and
- b) Inspect spark plugs every 1,440 hours of operation, or annually, whichever comes first, and replace as necessary; and
- c) Inspect all hoses and belts every 1,440 hours of operation, or annually, whichever comes first, and replace as necessary.

During periods of startup, the permittee shall minimize the RICE time spent at idle and minimize the RICE startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes. The permittee shall operate and maintain the RICE and after-treatment control device (if any) according to the manufacturer's emission related instructions, or the permittee's own operation and maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

The permittee shall keep the records of RICE maintenance (oil, spark plugs, hoses and belts) required by the RICE operation and maintenance plan. The hours of operation records and maintenance records shall be maintained for 5 years following the date of each occurrence and shall be made available to the APCD upon request.

- 30. There are four emergency flares on permit (45 MMBTU/hr at Ojai Fee, 40 MMBTU/hr at Silverthread, 40 MMBTU/hr at Hamp, and 11.7 MMBTU/hr at Hamp Fee). These four emergency flares shall be operated in compliance with the following conditions:

- a) Each emergency flare shall be equipped with a totalizing fuel meter. The meter shall be accurate to plus or minus five (5) percent as certified by the manufacturer in writing.
 - b) Each emergency flare shall be equipped with a continuous pilot or a functional, operating pilotless electronic ignition system when operating as a portion of the vapor recovery system or when controlling produced gas as required by Rule 71.1.
 - c) The permittee shall test each emergency flare's ignition system monthly and shall maintain a monthly record of the flare's ignition system tests and maintenance activities, including the tests date and the operator's initials.
 - d) The sulfur content of the gas entering each emergency flare shall not exceed 20 ppmvd, calculated as hydrogen sulfide (H₂S) at standard conditions. Any flare gas H₂S pre-treatment system shall be operated whenever the flare is operated as necessary to comply with the 20 ppmvd limit. This condition is applied pursuant to Rule 54.
 - e) Annual testing for sulfur compounds in the flare gas shall be conducted using H₂S detector tubes, SCAQMD Method 307-91, or EPA Method 16, as applicable. This condition is applied pursuant to Rule 54.
 - f) The permittee shall maintain monthly and rolling twelve month records of the volume (MMCF or MCF) of gas combusted in the Ojai Fee, Silverthread, and Hamp Lease emergency flares. Monthly and twelve month rolling records shall be maintained for total flare usage and for planned flaring events (non-emergency use). Emergency use and planned flaring are defined above. The permittee shall maintain records which differentiate between emergency usage and planned flaring events. These records shall be maintained at the facility for the previous two years and be made available to APCD personnel upon request.
31. Any combustion unit designated as "Out of Service" (OOS) is shut down, shall not be operated, and shall not be connected to a fuel source. Any tank designated as "Out of Service" (OOS) is shut down, shall not be operated, and shall not contain any liquids. Demonstrations of specific rule compliance are not required for OOS emissions units.

At the request of the permittee, the annual fuel limit for the "Out of Service" combustion units has been reduced to zero (0.0) cubic feet of natural gas. Permit conditions for the "Out of Service" emissions units have been removed from the permit. Prior to Operating these emissions units the permittee shall submit an application to modify the permit and provide emission offsets, as necessary.

32. All oil well casings, produced gas, and vapor recovery gas from the

Hamp Lease shall be compressed using gas compressors powered by grid electricity purchased from the local utility. Internal combustion engines, including both engines under 50 BHP and greater than or equal to 50 BHP, shall not be used to power gas compressors at the Hamp Lease. This condition has been applied pursuant to Application No. 0004-311 and Rule 26.4, "New Source Review - Emission Banking" to enforce Emission Reduction Credit Certificate No. 1218.

33. Southern California Edison received Emission Reduction Credit Certificate No. 1094 for the conversion of I.C. engines to electric motors on the following wells:

Ojai Fee Nos. 45, 46, 47, 51, 52, 54, 57, 58, 62, 70, 71, 78, 79, 81, 82, 83, 84, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 98, 100, 101, 105, 106, 107, 109, 114, 116, 118, 120, 123, and 125

These wells shall be free flowing, on gas lift, or equipped with electric motor powered artificial lift equipment. This condition is applied pursuant to Application No. 00004-141.

34. Pursuant to Rule 74.6.B.1, wipe cleaning shall be performed using solvent that contains 25 grams per liter or less ROC as applied.
35. Permittee shall maintain records of monthly oil throughput at the crude oil storage tank(s). These records shall be maintained at the facility for the previous two years and made available to APCD personnel upon request.
36. Permittee shall maintain records of monthly oil throughput at the crude oil loading facility(s). These records shall be maintained at the facility for the previous two years and made available to APCD personnel upon request.
37. Permittee shall comply with all applicable requirements of the California ARB "Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities" (CARB Oil and Gas Regulation).

The vapor recovery and produced gas requirements of Rule 71.1 are more stringent than this CARB Oil and Gas Regulation and remain in effect. Many components, including components found on tanks, separators, wells, and pressure vessels that are subject to the leak detection and repair requirements of Rule 74.10 are exempt from the leak detection and repair requirements of this CARB Oil and Gas Regulation.

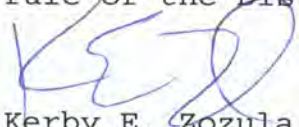
Pursuant to Section 95674(b)(2) of the CARB Oil and Gas Regulation, permittee shall register the subject equipment at each facility with CARB as specified in Appendix A Table A6. Updates to the facility registration must be filed with CARB no later than January 1 of the calendar year after the year in which any information required by the CARB Oil and Gas Regulation has changed.

VCAPCD Permit To Operate Number 00004
Issued To Carbon California Operating Company
Valid October 1, 2018 to September 30, 2019

Within 30 days after receipt of this permit, the permittee may petition the Hearing Board to review any new or modified condition (Rule 22).

This permit, or a copy, shall be posted reasonably close to the subject equipment and shall be accessible to inspection personnel (Rule 19). This permit is not transferable from one location to another unless the equipment is specifically listed as being portable (Rule 20).

This Permit to Operate shall not be construed to allow any emission unit to operate in violation of any state or federal emission standard or any rule of the District.


Kerby E. Zozula, Manager
Engineering Division

For:

Michael Villegas
Air Pollution Control Officer

Appendix E

VCAPCD PEETS Emission Factors for Crude Oil Wells

APPENDIX G

PEETS Emission Factors

SCC 10100601	Utility Boiler - Nat Gas	Pounds per MMcf	Date of Change
	Reactive Organics	1.4	6/19/1997
	Nitrogen Oxides	550	6/19/1997
	Particulate Matter	2.5	12/9/1999
	Sulfur Oxides	0.6	6/19/1997
	Carbon Monoxide	40	6/19/1997

AP-42(1/95), Table 1.4-2, 1.4-3, 1.4-1; ROC/TOC=0.835(FIRE)

SCC 10200501	Ind Boiler #1/#2 Fuel Oil	Pounds per MGallons	Date of Change
	Reactive Organics	0.2	4/28/1997
	Nitrogen Oxides	20	4/28/1997
	Particulate Matter	2	4/28/1997
	Sulfur Oxides	71.8	4/28/1997
	Carbon Monoxide	5	4/28/1997

AP-42 (1/95), Table 1.3-2, 1.3-4; S=0.5%.

SCC 10200504	Boiler #4/#5/#6 Fuel Oil	Pounds per MGallons	Date of Change
	Reactive Organics	0.2	4/28/1997
	Nitrogen Oxides	20	4/28/1997
	Particulate Matter	7	4/28/1997
	Sulfur Oxides	75.8	4/28/1997
	Carbon Monoxide	5	4/28/1997

AP-42 (1/95), Table 1.3-2, 1.3-4; S=0.5%. Factors for #4. Override for others.

SCC 10200601	Boiler-Nat Gas-Default	Pounds per MMcf	Date of Change
	Reactive Organics	5.5	4/24/2003
	Nitrogen Oxides	100	4/24/2003
	Particulate Matter	7.6	4/24/2003
	Sulfur Oxides	0.6	4/24/2003
	Carbon Monoxide	84	4/24/2003

AP-42 Table 1.4-1 and 1.4-2, July 1998. NOx Factor-Uncontrolled < 100 MMBTU/hr.

SCC 10200602	Boiler-NG-40 ppm NOx	Pounds per MMcf	Date of Change
	Reactive Organics	5.5	4/24/2003
	Nitrogen Oxides	50	4/24/2003
	Particulate Matter	7.6	4/24/2003
	Sulfur Oxides	0.6	4/24/2003
	Carbon Monoxide	84	4/24/2003

AP-42 Table 1.4-1 and 1.4-2, July 1998. NOx Factor-40ppm NOx.

SCC 10200603	Boiler-NG-30 ppm NOx	Pounds per MMcf	Date of Change
	Reactive Organics	5.5	5/7/2003
	Nitrogen Oxides	37.5	4/24/2003
	Particulate Matter	7.6	5/7/2003
	Sulfur Oxides	0.6	5/9/2003
	Carbon Monoxide	84	5/7/2003

AP-42 Table 1.4-1 and 1.4-2, July 1998. NOx Factor-30ppm NOx.

SCC 10200604	Boiler-Nat Gas-Dflt-MMBTU	Pounds per MMBTU	Date of Change
	Reactive Organics	0.0052	9/29/2006
	Nitrogen Oxides	0.0952	9/29/2006
	Particulate Matter	0.0072	9/29/2006
	Sulfur Oxides	0.0006	9/29/2006
	Carbon Monoxide	0.08	9/29/2006

Same as SCC 10200601, with units of MMBTU. 1050 BTU/cuft assumed.

SCC 30901503	Aqueous Etching	Pounds per Pounds	Date of Change
Ammonia		1	9/27/2006
Hydrogen Chloride		1	9/27/2006
SCC 30903007	Forge Oil	Pounds per Hours	Date of Change
Reactive Organics		1	5/24/1999
Particulate Matter		1	5/24/1999
<i>use source test data</i>			
SCC 30904020	Plasma Arc Metal Depostn	Pounds per Pounds	Date of Change
Particulate Matter		1	5/2/2002
<i>Use override to input site specific emission factor.</i>			
SCC 31000104	Sumps	Pounds per Sqft-Surface	Date of Change
Reactive Organics		3.65	7/22/1998
<i>Rockwell/API-March 1980</i>			
SCC 31000105	Pits	Pounds per Sqft-Surface	Date of Change
Reactive Organics		3.65	7/22/1998
<i>Rockwell/API, March 1980</i>			
SCC 31000122	Crude Oil Well	Pounds per Well-Day	Date of Change
Reactive Organics		2	7/30/1997
<i>VCAPCD factor</i>			
SCC 31000202	CO2 Unit	Pounds per Pound Per Hour	Date of Change
Reactive Organics		1	4/17/2002
<i>Override with actual value</i>			
SCC 31000227	Glycol Reboiler Vent	Pounds per Tons	Date of Change
Reactive Organics		2000	8/13/1998
<i>Use GLYCALC to calculate emissions</i>			
SCC 31306505	Photoresist-Pounds	Pounds per Pounds	Date of Change
Reactive Organics		1	7/1/1999
<i>Use with mass emission cap</i>			
SCC 31306506	Photoresist-Gallons	Pounds per Gallon	Date of Change
Reactive Organics		7	8/13/1999
<i>Approximate value-override with actual</i>			
SCC 31306507	Photoresist Stripping	Pounds per Gallon	Date of Change
Reactive Organics		7	7/21/1999
<i>Approximate value-override with actual</i>			
SCC 31306510	SemiconductorChemVaporDep	Pounds per Pounds	Date of Change
Reactive Organics		1	7/1/1999
Particulate Matter		1	7/1/1999
<i>Use with mass emission cap</i>			
SCC 31306511	Fiberoptic Preform Depostn	Pounds per Pounds	Date of Change
Particulate Matter		1	1/5/2004
Chlorine		1	1/5/2004
Hydrogen Chloride		1	1/5/2004
<i>Use override with site specific emission factors.</i>			
SCC 31499999	Lot Acceptance Test-7246	Pounds per Pounds	Date of Change
Particulate Matter		1	7/24/2000

Appendix F

AB 52 Notification of Consultation Opportunity

November 20, 2018

Julie Tumamait-Stenslie, Chair
Barbareño-Ventureño Mission Indians
365 North Poli Avenue
Ojai, CA 93023

SUBJECT: Notification of Consultation Opportunity, Pursuant to Public Resources Code (PRC) § 21080.3.1 et seq.
Modification to Conditional Use Permit (CUP) No. 3543, CA Carbon-Agnew Oil Production Facility
Case No. PL13-0158
Carbon California Company
270 Quail Court, Suite B, Santa Paula, CA 93060
Assessor's Parcel Number (APN) 040-0-220-165, -175, -185, -195, -205, -245, -255, and -265

Dear Chair Tumamait-Stenslie,

The purpose of this letter is to notify you that: (1) on February 24, 2014, the Resource Management Agency, Planning Division determined that the project application referenced above was complete for processing; (2) this completeness determination occurred prior to the enactment of AB52 requiring consultation with local tribal representatives; (3) the applicant has requested AB52 consultation to occur in order to comply with the spirit of AB52; and (4) within 30 days of receipt of this letter, you may submit a written request to the Planning Division for consultation regarding the proposed project's potential impacts to tribal cultural resources, pursuant to PRC § 21080.3.1 et seq.

The proposed project description is as follows:

The project applicant requests that a modification of CUP No. 3543 be granted to authorize the continued operation and maintenance of the existing oil and gas exploration and production operations at the project site for an additional 25-year period. The requested permit modification would also authorize the following project changes:

Proposed New Oil Wells. Three new oil wells would be drilled on the existing two-acre Agnew Lease well pad. One new well is proposed to be drilled within five years of the effective date of the requested CUP modification approval. The other two wells are proposed to be drilled within 10 years of the effective date of the requested CUP



modification approval. Drilling operations for each well would occur on a 24-hour, 7-days per week basis for up to several weeks.

Re-Drill and Existing Oil Well. One existing oil well located on the existing Agnew Lease well pad would be re-drilled. Drilling operations for this well would occur on a 24-hour, 7-days per week basis for approximately two weeks.

Project-Related Truck Traffic. The proposed access route change would authorize large project-related trucks to use Koenigstein Road for access to and from Highway 150 during drilling and production operations at the project site. Access to the project site from Koenigstein Road would continue to be provided by an existing private driveway.

Operations at the project site include trucking of produced oil and wastewater (brine) from the site to off-site oil refining and wastewater disposal facilities. The existing CUP authorizes up to 12 tanker truck loads (24 one-way trips) of produced fluid to be exported from the site per week. It is proposed that the authorized number of large project-related truck trips be reduced to a maximum of eight tanker truck loads (16 one-way trips) per week. All tanker truck operations would occur during daylight hours Monday through Saturday, between 7:30 a.m. and 6:30 p.m. For purposes of the requested CUP modification, the term "tanker truck" refers to any vehicle that is hauling produced fluids (including oil, drilling fluids, and brine) to or from the site. During proposed drilling operations, it is anticipated that a few truck trips would occur per day to deliver drilling fluids (mainly water) to the site. The arrival and departure of temporary drilling rig personnel would involve up to 40 vehicle trips per day. A truck-mounted drilling rig would be moved onto the site and remain for approximately two weeks for each new well and the re-drilled well.

Although the existing CUP does not limit the number of vehicle trips associated with maintenance and operation of production facilities, the applicant proposes to limit maintenance and operation traffic to 14 maintenance visits per week (i.e. 28 one-way trips). Maintenance-related vehicle trips would typically be by a standard pickup truck.

Other Project-Related Features. The proposed project does not include the removal of any vegetation, and only minor grading to construct new well pads would be required. No new lighting at the project site is proposed. Existing equipment on the project site that would continue to be used by the proposed project includes the following:

- Three oil wells: Agnew 1 (API No. 1120696); Agnew 2 (API No. 1120802); and, Agnew 3 (API No. 11211930);
- One 16-foot high water tank;
- Two 7,000-gallon wastewater tanks;
- Two 13,000-gallon storage tanks (one waste tank and one oil tank);
- One-barrel tank (out of service);
- Three vertical tanks ranging from 10- to 18-feet in height;
- A flare to incinerate produced gas;

- Lighting and electrical equipment; and,
- Local pipelines.

Hydraulic fracturing, acid well stimulation and other "well stimulation treatments," as defined in PRC § 3157, are not included in the proposed project. The use of any such well stimulation treatment as part of the project would require a subsequent discretionary modification of the CUP, additional environmental review under CEQA, and a public hearing.

If you would like to request consultation regarding the proposed project's potential impacts to tribal cultural resources pursuant to PRC § 21080.3.1(b), please submit a written request to me within 30 days of receipt of this letter.

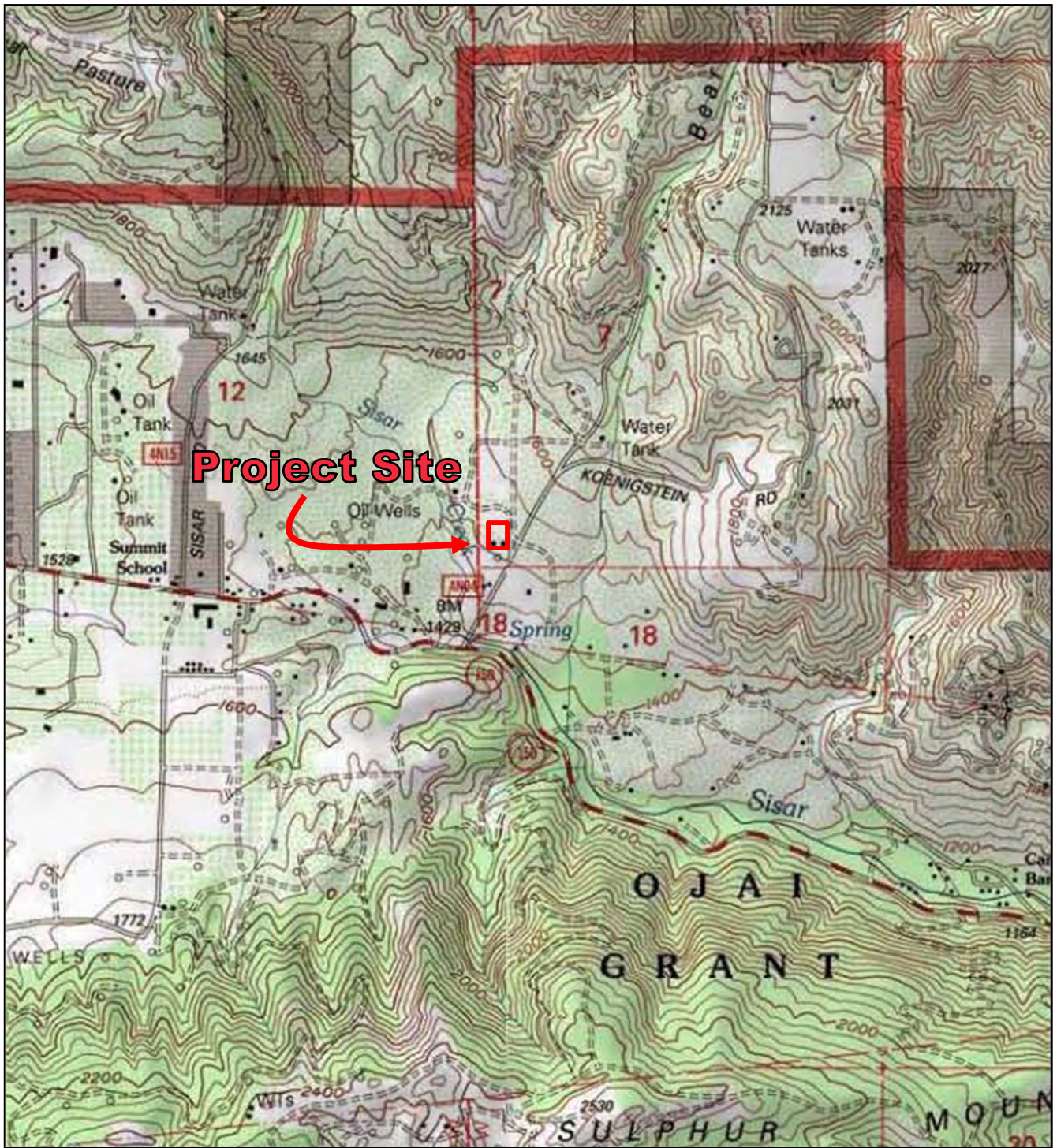
If you have any questions about this letter, please contact me at (805) 654-5193 or bonnie.luke@ventura.org.

Sincerely,



Bonnie Luke, Case Planner
Commercial/Industrial Permits Section
Ventura County Planning Division

Encl.: Location Map



One Inch = Approx. 1,500 ft.

County of Ventura

Carbon California Company LLC Agnew Lease Oil and Gas Project

Figure 3.1-2

Project Location

Appendix G

2016 SR 150 and Koenigstein Road Analysis and Ventura County Analysis Review Memorandum



ASSOCIATED TRANSPORTATION ENGINEERS

100 N. Hope Avenue, Suite 4, Santa Barbara, CA 93110 • (805) 687-4418 • FAX (805) 682-8509

Since 1978

Richard L. Pool, P.E.
Scott A. Schell, AICP, PTP

July 26, 2016

16060L05.WPD

Mr. Scott Price
Mirada Petroleum
15500 West Telegraph Road, Suite D#32
Santa Paula, California 93060

STATE ROUTE 150 AND KOENIGSTEIN ROAD ANALYSIS, VENTURA COUNTY, CALIFORNIA

Pursuant to your request, Associated Transportation Engineers (ATE) is providing the following evaluation for the State Route 150/Koenigstein Road intersection as it relates to the use of tanker trucks. ATE has conducted a field review of the intersection to determine the sight distance, evaluated collision data and existing traffic volumes on State Route 150. ATE evaluated the intersection based on the use by oil tanker trucks which will not exceed the legal limits. Oversized trucks would required to have a valid Transportation Permit.

Sight Distances. ATE conducted a field review to determine if sufficient sight distance exists for tanker trucks at the State Route 150/Koenigstein Road intersection. The Caltrans Highway Design Manual¹ sight distance standards were used for the sight distance analysis. The segment of State Route 150 is rolling and posted 35 MPH. Based on Caltrans criteria, the minimum required sight distance standard for a 35 MPH design speed is 250 feet.

The sight distance looking east along State Route was measured at 350 feet, in excess of the 250-foot minimum. The sight distance looking west along State Route 150 was measured at 500 which also exceeds the 250-foot minimum. The measured sight distance at the State Route 150/Koenigstein Road intersection exceeds the minimum site distance standard.

Collision Data. ATE reviewed the Caltrans collision data for the State Route 150/Koenigstein Road intersection contained in Appendix F of the December 2015 Subsequent Environmental Report for the Mirada Oil and Gas Project - Nesbitt Lease. The collision data covers a 12-year period from 2002 to 2013. The collision data is attached. There were 2 collisions with no reported fatalities and none involved large trucks.

**County of Ventura
Board of Supervisors
PL15-0060**

**Exhibit 16 – Attachment C
Associated Traffic Engineers Traffic
Report**

¹ Highway Design Manual, Caltrans, 6th Edition.

Engineering • Planning • Parking • Signal Systems • Impact Reports • Bikeways • Transit

Roadway Operation. Current traffic counts show that State Route 150 carries 2,800 vehicles per day in the vicinity of the project site. Existing traffic volumes and levels of service are summarized in Table 1. Levels of service are based on Ventura County engineering design capacities, which show that 2-lane highway such as State Route 150 has the capacity to carry approximately 11,000 vehicles per day.

Table 1
Traffic Volumes and Levels of Service

Roadway Segment	Roadway Classification	Roadway Capacity	Existing	
			ADT	LOS
State Route 150	Class II	11,000 ADT	2,800	LOS B
Note: LOS based on Ventura County Standard Engineering Design Capacities.				

State Route 150 in the study-area roadways currently operates at LOS B. With the addition of less than 3 tanker trucks per day from the Agnew and Nesbitt CUP Modifications, State Route 150 would continue to operate at LOS B. LOS B represents relatively free flow operations with no congestion.

CONCLUSION

The operation of the Koenigstein Road/Highway 150 intersection has not exhibited any safety issues over the past 20 years. This observation is based upon data we collected and/or obtained this year.

It is ATE's staff conclusion that the intersection will continue to operate satisfactorily based upon the accident record data, where there were two accidents noted (neither involved tanker trucks), over a 12-year period. Koenigstein Road has a low traffic volume, the sight distance at the intersection in both directions, as measured, meets or exceeds the Caltrans value for the prevailing speed. ATE also reviewed the intersection geometry. The proposed addition of less than 3 one-way tanker trips per day through this intersection will not alter this condition. The expected tanker trucks utilized by the project will not exceed the legal limits. Oversized trucks would be required to have a valid Transportation Permit.

Associated Transportation Engineers



By: Richard L. Pool, P.E.
President



Attachment: Collision Data

Report run on: 11/12/2014

Total Count: 2

141234 2002 - AV 2013/2014 COLLISIONS ON RT 150 (OJAI/SANTA PAULA RD) WITHIN 200 FT OF KOENIGSTEIN RD , IN VENTURA COUNTY.

Case Page

Primary Rd RT 150 Distance (ft) 1 Direction Secondary Rd KOENIGSTEIN RD VNT 9765 State Hwy Y Pcty 150 Postmile Pcty 26.141 Side of Hwy W
 City UNINCORP. County VENTURA Population 9 Rpt Dist Beat 044 Type 1 Caltrans Dist 7 Budge 011409 Collision Date 20071102 Time 1410 Day FRU
 Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type SIDESWIPE Severity INJURY # Killed 0 # Injured 1 Tow Away? N Process Date 20080718
 Weather 1 CLEAR Weather 2 Dry Surface DRY Hwy Cond NO UNSL CND Ped Action
 Motor Veh Involved With OTHER MV Lighting DAYLIGHT Date Recv FNCTNG Loc Type I Remarks 5

PARTY INFO
 Party Type Age Sex Race Subriety 1 Subriety 2 Move Pcty Loc Dir SW Veh Chf Veh Make Year Spnch OAF1 Vch OAF2 Safety Equip Hwy Ext of Hwy
 1F DRVR 17 M W HNBD PROC ST E D 2200 FORD 1999 3 F M G DRVR COMP PH 44 M 1 M G 0
 2 DRVR 44 M W HNBD LFT TURN E A 0100 BMW 2000 3 N M G
 Remarks Ad KOENIGSTEIN RD Distance (ft) 88 Direction N Secondary Rd RT 150 VNT 9765 State Hwy Y Budge 150 Postmile Pcty 26.141 Side of Hwy W
 City UNINCORP. County VENTURA Population 9 Rpt Dist Beat 004 Type 3 Caltrans Dist 7 Budge 14736 Collision Date 20091015 Time 0805 Day FRU
 Primary Collision Factor DRVR ALC/DRC Violation 23152A Collision Type HIT OBJECT Severity INJURY # Killed 0 # Injured 3 Tow Away? Y Process Date 20101228
 Weather 1 CLEAR Weather 2 Dry Surface DRY Hwy Cond NO UNSL CND Ped Action
 Motor Veh Involved With FIXED OBJ Lighting DAYLIGHT Date Recv FNCTNG Loc Type I Remarks 6

PARTY INFO
 Party Type Age Sex Race Subriety 1 Subriety 2 Move Pcty Loc Dir SW Veh Chf Veh Make Year Spnch OAF1 Vch OAF2 Safety Equip Hwy Ext of Hwy
 1F DRVR 42 M B HBD-U) UNS TURN S A 0700 LEXUS 2004 3 A 22107 L G PASS OTH VIS 4 M 4 L U 0
 PASS COMP PN 2 F 5 P U 0
 PASS OTH VIS 5 F 5 P U 0



**PUBLIC WORKS AGENCY
TRANSPORTATION DEPARTMENT
Traffic, Advance Planning & Permits Division**

MEMORANDUM

DATE: July 26, 2016

TO: RMA – Planning Division
Attention: Brian Baca

FROM: Transportation Department *AB*

SUBJECT: REVIEW OF TRAFFIC STUDY
PROJECT NO: PL 13-0158 (CUP 3543)
PERMITTEE: Mirada Petroleum, Inc.
Property Owner: South Mountain Resources, LTD.
Traffic Study for State Route 150 and Koenigstein Road.
APN 040-0-220-165

Pursuant to your request, the Public Works Agency Transportation Department (PWATD) has reviewed the Traffic Study by the Associate Transportation Engineers (ATE) dated July 26, 2016, for the Mirada Petroleum Project.

We offer the following comment:

1. The PWATD concurs with the findings in the Traffic Study.

Our review is limited to the items listed in the Traffic Study for the impacts this project may have on the County's Regional Road Network.

T:\Planning\Land Development\County\PL 13-0158 (CUP 3543)-4 Traffic Study Review.doc

Appendix H

**Transcript of the July 28, 2016 Ventura County Planning Commission Hearing for the
Nesbitt Oil Well Project (PL15-0060)**

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25

COUNTY OF VENTURA

[illegible]

PLANNING COMMISSION MEETING

THURSDAY, JULY 28, 2016

1 VENTURA COUNTY PLANNING COMMISSION

2 THURSDAY, JULY 28, 2016

3
4
5 CHAIR AIDUKAS: Next Item, I understand that we have,
6 uh, uh, a staff member that would, uh, answer questions that
7 have been posed by the Commission. Could you come forward
8 and state your name, please.

9 MR. FLEISCH: Good morning. My name is David
10 Fleisch. I'm the Director of the Transportation Department
11 of the Public Works Agency for Ventura County.

12 CHAIR AIDUKAS: Thank you. And I understand you're
13 here to, um, uh, answer some of the questions that the
14 Commission has raised.

15 MR. FLEISCH: I'll do the best I can.

16 CHAIR AIDUKAS: Thank you so much.

17 MR. FLEISCH: I don't know what the questions are, so
18 I apologize, you'll have to state them for me.

19 CHAIR AIDUKAS: I -- I apologize.

20 MR. FLEISCH: (Laughs)

21 CHAIR AIDUKAS: I -- I'm sorry about that. Um, uh,
22 Commissioner Rodriguez, do you want to restate your concerns
23 regarding --

24 COMMISSIONER RODRIGUEZ: -- Hi David.

25 MR. FLEISCH: -- Good morning.

1 CHAIR AIDUKAS: -- Koenigstein and 150?

2 COMMISSIONER RODRIGUEZ: Um, yeah. Uh, we've gotten
3 the reports, uh, uh, from staff via Transportation. You
4 guys went out and -- and checked the site and -- and, uh,
5 and, uh, I guess conducted a test out there. And you were
6 satisfied that, uh, you could turn off of, uh, 150, um, onto
7 Koenigstein Road at the bridge and do it without crossing
8 over the double yellow at -- on 150, um, in essence. Is
9 that correct?

10 MR. FLEISCH: Oh, I haven't done the study --

11 COMMISSIONER RODRIGUEZ: -- Oh.

12 MR. FLEISCH: -- you're addressing, but, um, there --
13 a traffic engineering report was done and we've reviewed
14 that and we concur with the report.

15 COMMISSIONER RODRIGUEZ: Okay.

16 MR. FLEISCH: And it's -- the road is -- is -- is
17 safe, as it is and has been for quite some time. So.

18 COMMISSIONER RODRIGUEZ: Yeah. And -- And -- And all
19 -- all there -- all the in -- information we've gotten
20 indicates there have been really no tanker accidents there
21 at that intersection.

22 MR. FLEISCH: Correct.

23 COMMISSIONER RODRIGUEZ: Which is part of, I think,
24 what, uh, you're referring to.

25 MR. FLEISCH: Correct.

1 COMMISSIONER RODRIGUEZ: Um, we just saw a video, and
2 I apologize, it's -- it's not available to you. Basically
3 it showed a tanker -- tanker trailer turning off of
4 Koenigstein on -- excuse me, off of 150 onto Koenigstein
5 making that right-hand turn without violating the double
6 yellow as it did that. Uh, the double yellow on 150.

7 Um, but it appeared and -- and unfortunately the --
8 the video, uh, um, didn't show -- the angle of the video
9 didn't show the turning movement, um, actually on
10 Koenigstein Road and so I, for one, couldn't conclude that
11 that could be done safely without violating the double
12 yellow also on Koenigstein Road. It's -- It appears that
13 with the trailer, um, you've got to dou -- violate the
14 double yellow on Koenigstein and intrude -- into that --
15 into that lane, um, coming down the hill in order to make
16 that turn without violating the double yellow on 150. Uh,
17 do you understand what I'm saying?

18 MR. FLEISCH: Yes.

19 COMMISSIONER RODRIGUEZ: They've got to make a wide
20 turn in order --

21 MR. FLEISCH: -- Yes.

22 COMMISSIONER RODRIGUEZ: -- to make -- and not
23 violate 150's double yellow. Um, did your staff do a site
24 inspection out there where actually a truck was turning or
25 any site -- sort of site inspection at all?

1 MR. FLEISCH: Uh, we've checked, as we do for
2 anything like this, we check the -- the normal things you
3 check for safety. You check for site distance, you check
4 for -- for lengths and so forth. The road is de -- was --
5 is still as it was designed at the time it was there, and it
6 meets the standards necessary for the traffic that are on
7 the road.

8 Uh, when you have vehicul -- vehicular movements, uh,
9 as -- that's as much dependent upon the driver of the
10 vehicle as it is the road. So just the fact that a -- a
11 truck drives over a line doesn't mean that the road can't
12 handle it, it means that's how the person operated the
13 vehicle. Um, it's a -- both those roads in that area are
14 low volume roads. The traffic that's on them, um, is such
15 that they're more than adequate to handle the traffic, both
16 truck and car traffic, that are there, in a safe manner.

17 COMMISSIONER RODRIGUEZ: Okay. Um, that explains
18 what I needed to know, uh, without asking you a -- a
19 hypothetical, um, and I won't put you in that situation.
20 Thank you.

21 MR. FLEISCH: Okay.

22 CHAIR AIDUKAS: Uh, uh, would it be helpful, um, for
23 you to see the video that has been presented to us to --

24 MR. FLEISCH: I'm -- I'm aware of the video. I just
25 -- I didn't do the video and that's what Mr. Rodriguez

1 asked. My staff did not do that. Planning did, so I wanted
2 to make sure you understood it wasn't my staff who did the
3 video. I am aware of the video. I know what it's -- it
4 shows, so I --

5 CHAIR AIDUKAS: -- Okay.

6 MR. FLEISCH: -- I'm -- it's not necessary for me to
7 see the video.

8 CHAIR AIDUKAS: To -- To my eyes, it shows that, um,
9 under the very best circumstances, um, the operator of the
10 truck, which I understand is not the Applicant, um, uh, is
11 physically, because of the geometry of the road and the
12 length of the truck, it's physically impossible to make the
13 right-hand turn without, um, going into the oncoming traffic
14 or outgoing traffic of Koenigstein.

15 MR. FLEISCH: Okay.

16 CHAIR AIDUKAS: Or -- Or they could sw -- you know,
17 swing wide and go over the double yellow lines if there
18 were, uh, traffic coming that other way. Is that something
19 that is considered safe because it's a low-volume, uh, uh,
20 road? What is the county standards regarding the safety of
21 -- of that?

22 MR. FLEISCH: There isn't a county standard for
23 safety and can somebody drive or not drive over a line. We
24 have a design standard for roads that was in effect at the
25 time the roads were built. And there's no requirement to

1 update that to current standards, just because the standards
2 change. So the road, at the time it was built, was
3 appropriate for the traffic, and with the volumes of traffic
4 that are on both of those roads today, the road is still
5 more than acceptable for the traffic that's there.

6 Because of the low volume, and you can even see this
7 at the corner right out here at Victoria and -- and Tele --
8 Telephone, that trucks frequently turn wide and cross a
9 line. That, in and of itself, does not make the road
10 dangerous or does not make the traffic dangerous. They have
11 to watch what's there. And in that area up there, as low
12 volume as the traffic is, they would wait until the lane
13 cleared before they made their turn. That's a perfectly
14 safe operation. Yes, they're crossing the line, but that,
15 in and of itself, doesn't make it unsafe.

16 CHAIR AIDUKAS: Okay, so for the purposes of the
17 county and -- and coming up with an idea of what is safe and
18 what is not safe, because this is something that, um, uh,
19 really is key to the appeal that's before us, is, um, at
20 some time in the past it said it could -- it might not be
21 safe or it could be unsafe, and so, um, you know, they're
22 using this road now. But for the county, what's considered
23 safe is, uh, you just wait or you back up or you make
24 accommodations and, uh, uh, if you go over the line, that's
25 not considered an "unsafe road," it's just site distance

1 and, you know, that you're not going to fall into the creek
2 or --

3 MR. FLEISCH: We don't use it -- the term this is a
4 "safe" or "unsafe" road.

5 CHAIR AIDUKAS: Okay.

6 MR. FLEISCH: I don't know where that comes from, but
7 that's not the term we use. If you're -- What we do to look
8 at whether or not there's an issue that warrants some
9 engineering change or something to a road, is we look at
10 several factors. We look at sight distance, we look at
11 speed, um, we look at just the basic condition of the road.
12 Is there some maintenance that needs to be done?

13 Uh, we do an annual safety analysis of all the roads
14 and intersections in the county, and that is essentially
15 looking at what collisions have occurred in a rolling three-
16 year period. There's standards that are set for what are
17 acceptable. Um, if you've read much of the litera -- or
18 anything in the newspaper, literature, um, the majority of
19 collisions that occur on any road are due to i -- driver
20 error, not dru -- due to the engineering of the road. So we
21 do an analysis of those collisions, make a determination
22 what the causes of them were, and then see if there's
23 anything that we need to do to change the road to, um,
24 prevent those accidents from happening in the future.

25 In that area up there, there have been no accidents,

1 there have been no issues, there have been nothing that says
2 we need to do anything other than leave the road is it
3 exists today. And for the amount of traffic that's there
4 and for the amount that's being added from this project,
5 there's nothing that should change. And that's what the
6 engineering report that came, or traffic report that came
7 from and we concur with that report.

8 CHAIR AIDUKAS: So that's the, um -- Let me back up a
9 little minute.

10 Um, when I visited this site last, I noticed that
11 there was quite a lot of damage to the, um, K-Rail, you
12 know, cars scraping up or trucks scraping up against it.
13 And I also noticed, um, at that time, uh, uh, skid marks
14 right at the intersection. So that wouldn't, um, give any
15 kind of indication that there might be, um, engineering
16 solutions to improve that T-intersection and make it, you
17 know, I don't know, wider or something? It's just a -- what
18 you're saying is it -- it's speed and s -- and sight
19 distance, that's the only, um --

20 MR. FLEISCH: -- No, we also look at the number of
21 collisions and --

22 CHAIR AIDUKAS: -- And there were none?

23 MR. FLEISCH: -- Just -- yeah, just the fact that
24 there's skid marks there, it could have been some kid, you
25 know, te -- testing out his new not rod. We have no idea

1 why they're there. We rely on that collision data that we
2 get from the California Highway Patrol, who does, uh,
3 vehicular enforcement for county roads as well as for state
4 highways. So in that area, both Highway 150 and
5 Koenigstein, any collisions would be reported through the
6 California Highway Patrol. And we have none in that area,
7 or two, I think, in the last fifteen years, and none of them
8 have anything to do with, uh, with any trucks. And so
9 there's no reason for us, um, to think there's a nec --
10 necessity to go improve the intersection bec -- from -- from
11 a safety perspective, because there's nothing that would
12 lead us to believe that --

13 CHAIR AIDUKAS: -- And -- And that's your expert
14 opinion as a traffic engineer?

15 MR. FLEISCH: I'm not a traffic engineer. I'm the
16 County Transportation Department Director, but my traffic
17 engineer has reviewed the report and he concurs with it.

18 CHAIR AIDUKAS: Got it. Is there anything else?

19 COMMISSIONER RODRIGUEZ: Just a follow-up. Dave, uh,
20 you never saw that video we're referring to?

21 MR. FLEISCH: Uh, yes I have.

22 COMMISSIONER RODRIGUEZ: You did, okay.

23 MR. FLEISCH: I've seen the video.

24 COMMISSIONER RODRIGUEZ: Okay.

25 MR. FLEISCH: I just didn't create the video.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(Laughs)

COMMISSIONER RODRIGUEZ: Oh, yeah, no, the Applicant,
uh, created the video. Uh, and after that, Transportation
communicated to Planning that it appeared to be okay?

MR. FLEISCH: Correct.

COMMISSIONER RODRIGUEZ: And from your perspective?

MR. FLEISCH: Correct.

COMMISSIONER RODRIGUEZ: Okay. Thank you.

CHAIR AIDUKAS: Thank you very much. Appreciate it.

-o0o-

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

C E R T I F I C A T E

STATE OF CALIFORNIA)
) ss.
COUNTY OF VENTURA)

I, MARCIA ZIMMERMANN, do hereby certify that I
transcribed, from recorded digital audio file, the
proceedings fully and accurately to the best of my skill
and ability, and that the foregoing pages constitute a
complete and accurate transcript.

IN WITNESS WHEREOF, I have subscribed this certificate
at Ventura, California, on this twenty-second day of
August, 2016.

MARCIA ZIMMERMANN

Appendix I

**County of Ventura, November 21, 2019: Ventura County Public Works Agency
Transportation Department Memorandum**

DATE: November 21, 2019

TO: RMA - Planning Division
Attention: Kristina Boero

FROM: Transportation Department



SUBJECT: APPLICATION COMPLETENESS

PROJECT NO: PL 13-0158 (CUP 3543) Revision 5

Property Owner: South Mountain Resources, LTD.

Applicant/Permittee: Carbon California Company, LLC

Modification to Conditional Use Permit (CUP) 3543 for an extension of 25 years, the drilling of two new oil and gas wells and authorize the full-time use of an existing natural gas flare
Koenigstein Road, Santa Paula, CA 93060
APN 040-0-220-165

Pursuant to your request, the Public Works Agency Transportation Department (PWATD) has reviewed the subject application and has determined that the application is **complete** for our areas of responsibility.

Modification to CUP 5343 is a request by the applicant to allow the following: 1. The continued operation of the existing oil and gas production facilities authorized by CUP 3543 for an additional 25 years; 2. The drilling of two new oil and gas wells on the existing graded pad that was authorized by CUP 3543; 3. The re-drilling of one of the existing oil and gas wells authorized by CUP 3543; 4. Allow the use of Koenigstein Road so that the project-related trucks can use the roadway to access the project site; 5. Authorize the full-time use of an existing natural gas flare at the project site for excess produced gas.

Other project related components remain unchanged, including requests to: allow the continued operation of existing oil production equipment at the project site, re-drill one existing well, allow project-related tanker trucks to use Koenigstein Road, and allow the full-time use of an existing gas flare at the project site. The existing CUP authorized up to 12 tanker truck loads (24 one-way trips) of produced fluid to be exported from the site per week. It is proposed that the authorized number of large project-related truck trips be reduced to a maximum of eight (8) tanker truck loads (16 one-way trips) per week. The actual number of tanker truck trips generated by the proposed project would likely be lower than the maximum number of permitted trips because the proposed new oil wells would be served by the same truck that currently serves the three existing oil wells at the project site. In addition, the same tanker truck that currently serves the project site also serves other oil wells located along Koenigstein Road that are operated by the project applicant. All tanker trucks operation would occur during daylight hours Monday – Friday between, 7:30 am and 6:30 pm. For purpose of the request CUP modification, the term

“tanker truck” refers to any vehicle that is hauling produced fluid (including oil, drilling fluids and brine) to or from the site.

The drilling period for each new or re-drilled oil well would occur over a period of approximately two weeks. Drilling operations for each well new or re-drilled well would require approximately 20 workers and 16 trucks that would deliver and remove drilling equipment. Over a two-day period 16 truck trips (8 trucks per day) would bring drilling equipment from the site. During proposed drilling operations, it is anticipated that a few truck trips would occur per day to deliver drilling fluids (mainly water) to the site. The arrival and departure of temporary drilling rig personnel would involve up to 40 vehicles trips per day. A truck-mounted drilling rig would be moved onto the site and remain for approximately two weeks for each new well and the re-drilled well. At times when a drill rig is moved onto or off the project site, the project operator would implement a traffic control plan. The traffic control plan would be designed to avoid potential traffic related conflicts at and near the State Route 150/Koenigstein Road intersection. At minimum the traffic control measures would include the use of warning signs and flagmen on State Route 150 and Koenigstein Road in the vicinity of the intersection.

Although the existing CUP does not limit the number of vehicle trips associated with maintenance and operation of production facilities, the project applicant proposed the limit maintenance and operation traffic to 14 maintenance visits per week (i.e. 28 one-way trips). Maintenance-related vehicle trips would typically be by a standard pickup truck.

The Initial Study Checklist and responses to the Checklist are made part hereof. Our review is limited to the impacts this project may have on the County’s Regional Road Network.

INITIAL STUDY CHECKLIST

PUBLIC FACILITIES/SERVICES SECTION

TRANSPORTATION/CIRCULATION

	<u>ISSUE</u> (Responsible Department)	<u>PROJECT IMPACT DEGREE OF EFFECT*</u>				<u>CUMULATIVE IMPACT DEGREE OF EFFECT*</u>			
		N	LS	PS-M	PS	N	LS	PS-M	PS
PUBLIC FACILITIES /SERVICES:	<u>Transportation/Circulation:</u>								
	A. Public Roads and Highways:								
	(1) Level of Service (PWA)		X				X		
	(2) Safety/Design (PWA)		X				X		
	C. Pedestrian/Bicycle:								
	(1) Public Facilities (PWA)		X				X		

DEGREE OF EFFECT:

N = No Impact

LS = Less Than Significant

PS-M = Potentially Significant Impact Unless Mitigation Incorporated

PS = Potentially Significant Impact

STUDY STANDARD DISCUSSIONS

PUBLIC FACILITIES/SERVICES

27. Transportation/Circulation

Item A. Public Roads/Highways

(1) Level of Service

Environmental Analysis:

The project, as proposed, will generate additional traffic on the local public roads and the Regional Road Network, but does not have the potential to alter the level of service (LOS) of the roadways that will be used by the project.

To address the cumulative adverse impacts of traffic on the Regional Road Network, Ventura County General Plan Goals, Policies, and Programs Section 4.2.2-6 and Ventura County Ordinance Code, Division 8, Chapter 6 require that the Transportation Department of the Public Works Agency collect a Traffic Impact Mitigation Fee (TIMF) from developments. This project is subject to this Ordinance. With payment of the TIMF(s), the Level of Service (LOS) and safety of the existing roads would remain consistent with the County's General Plan.

Therefore, adverse traffic impacts relating to LOS will be Less Than Significant.

(2) Safety/Design

Environmental Analysis:

The project, as proposed, does not have the potential to alter the level of safety of roadways and intersections near the project.

Therefore, impacts related to safety/design of County roads will be "Less than Significant".

Item C. Pedestrian/Bicycle

(1) Public Facilities

Environmental Analysis:

The proposed project will not generate significant pedestrians or bicycle traffic.

Therefore, the adverse impacts relating to the supplementary addition of pedestrians and bicycles into the area will be "Less than Significant."

STANDARD LAND DEVELOPMENT CONDITIONS OF APPROVAL

PUBLIC FACILITIES/SERVICES

Transportation/Circulation

1. TRAFFIC IMPACT MITIGATION FEE:

Purpose: To address the cumulative adverse impacts of traffic on the Regional Road Network, Ventura County General Plan Goals, Policies, and Programs Section 4.2.2-6 and Ventura County Ordinance Code, Division 8, Chapter 6 require that the County of Ventura, Public Works Agency, Transportation Department (PWATD) collect a Traffic Impact Mitigation Fee (TIMF).

Requirement: The applicant/permittee shall deposit with the PWA – Transportation Department a TIMF. The trip generation rate and TIMF will be calculated based on the applicant's information and the County of Ventura Records. The applicant/permittee may choose to submit additional information or provide an updated Traffic Study to supplement the information currently provided to establish the trip generation rate. The TIMF may be adjusted for inflation at the time of deposit in accordance with the latest version of the Engineering News Record Construction Cost Index.

a) The TIMF due to the County of Ventura would be:

$$\$20.60 = 2 \text{ ADT} \times \$10.30^{(3)} / \text{ADT}$$

b) The TIMF due to the City of Ojai would be:

$$\$71.74^{(5)} = 2 \text{ ADT} \times \$35.87^{(4)} / \text{ADT}$$

Total ADT⁽¹⁾⁽²⁾:

The total ADT is base on the permit allowing a total of five (5) gas and oil wells. The applicant proposes 8 truck trips (16 one-way trips) per week for oil and gas hauling, and 14 maintenance trips (28 one-way trips) per week for maintenance.

$$6 \text{ ADT} = (40 \text{ total trips} / \text{week}) / (7 \text{ days} / \text{week})$$

$$40 \text{ total trips} / \text{week} = 16 \text{ truck trips} / \text{week} + 24 \text{ maintenance trips} / \text{week}$$

Proposed ADT⁽¹⁾⁽²⁾:

The proposed ADT is based on the permit allowing a total of two (2) new gas and oil wells, or 2/5th of the total number of wells. Proposed ADT will be 2/5th of the total ADT.

$$2 \text{ ADT} \approx 2.4 \text{ ADT} = 6 \text{ ADT} \times (2/5)$$

Existing ADT⁽¹⁾⁽²⁾:

The existing ADT is based that there are existing a total of three (3) gas and oil wells, or 3/5th of the total number of wells. Existing ADT will be 3/5th of the total ADT.

$$4 \text{ ADT} \approx 3.6 \text{ ADT} = 6 \text{ ADT} \times (2/5)$$

Notes:

- (1) Trip Generation established by using the project description provided by the applicant. The applicant did not provide any information on existing trips used by 3 wells, only the total number of trips allowed if the applicant was using 6 wells. Since there are only 3 wells the existing trips are what are currently being used, not what the permit allowed for. The applicant can provide additional documentation on the trips being generated by the existing 3 wells at which time the TIMF will be re-evaluated.
- (2) The trips generated by the project shall be used as a baseline level so that the TIMF may be computed for future increases to the trip generation. Based on the applicant's information the existing baseline level is 4 Average Daily Trips (ADT). With the proposed expansion, that will generate an additional 2 ADT, the new proposed baseline level will be 6 Average Daily Trips (ADT). (TD - 4, RMA – 138).
- (3) County of Ventura TIMF for the Average Daily Trips in the Ojai Area District # 1.
- (4) The City of Ojai Reciprocal TIMF for the Average Daily Trips.
- (5) The TIMF due to the City of Ojai is to be transferred to the City within 30 calendar days in accordance with the reciprocal traffic mitigation agreement between the City and the County of Ventura.

Documentation: The applicant/permittee shall come to the PWA Transportation Department counter, fill out the TIMF form, and pay the TIMF. The applicant/permittee shall provide a copy of the Conditions of Approval for the project. The fee may not be collected without sufficient documentation.

Timing: This condition shall be met prior to the issuance of a building permit or zoning clearance, whichever comes first.

Monitoring and Reporting: The PWATD will review and approve the payment of the TIMF. (TD – 1, RMA – 135)

COMMENTS:

Regarding safety, the Ventura County Public Works Agency, Transportation Department (PWATD) makes no change to the comments provided on July 26, 2016. PWATD concurs with the findings in the Traffic Study prepared by ATE on July 18, 2016. Highway 150 at the intersection of Koenigstein Road and Highway 150 has a low volume of traffic.

To analyze an intersection for safety concerns, the accepted method is to review collision history in the area and at the intersection. Typically, the data that is used is a minimum of 3 years and a maximum of 5 years of available collision data. However, for this project we considered much more data. In the 20 years that the oil and gas company has been using Koenigstein Rd. there has been no evidence of tanker truck related collisions. Since there is no evidence that there have been collisions with in that timeframe, PWATD finds no nexus to require the project applicant to consider alternative routes of travel for the tanker truck related trips for the site.

In addition, from the location of the bridge to the location of the private access road used by the project, the pavement width on Koenigstein road is approximately 32 feet, with one twelve-foot wide travel lane in each direction. The pavement width at the bridge is 24 feet, with two travel lanes. The 1980 EIR states, "Koenigstein Road is a 14-foot-wide paved road with graded dirt shoulders". Koenigstein more than ½ a mile north of the project location has a narrower pavement width then 32 feet, but that does not affect the trucks that will used this project's site. The statement in the 1980 EIR of trucks having to pull over to allow another truck to pass is not a factor for this project on Koenigstein Road.

Appendix J

Caltrans Letter Dated September 28, 2015

DEPARTMENT OF TRANSPORTATION

DISTRICT 7, OFFICE OF REGIONAL PLANNING

IGR/CEQA BRANCH

100 MAIN STREET, MS # 16

LOS ANGELES, CA 90012-3606

PHONE: (213) 897-0219

FAX: (213) 897-1337

*Serious drought
Help save water!*

September 28, 2015

Ms. Kristina Boero
Ventura County
800 South Victoria Avenue #1740
Ventura, CA 93009

Re: Mirada Petroleum Oil and Gas Project
Case No. PL15-0600
Vic: VN-150
SCH# 2015091052
IGR# 150932ME-NOP

Dear Ms. Boero:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the proposed **Mirada Petroleum Oil and Gas Project**.

The project is located in a region north of the City of Santa Paula, one and a half miles north of Highway 150 in the County of Ventura, CA. The applicant is requesting that a modification of the Conditional Use Permit No. LU11-0041 be granted to authorize the re-activation, operation and maintenance of the existing oil, gas, and production facilities. It is proposed that the number of vehicles trips associated with the maintenance and operation of production facilities be limited to 14 maintenance visits to the project site per week.

The nearest State facility to the proposed project is State Route-150. Caltrans does not expect project approval to result in a direct adverse impact to the existing State transportation facilities.

However, storm water run-off is a sensitive issue for Los Angeles Counties. Please be mindful that projects should be designed to discharge clean run-off water. Additionally, discharge of storm water run-off is not permitted onto State Highway facilities without a storm water management plan.

As a reminder, any transporting of heavy construction equipment and/or materials which require the use of oversized-transport vehicles on State highways will require a Caltrans transportation permit. Caltrans recommends that large size truck trips be limited to off-peak commute periods.

Please continue to keep us informed of this project and any future developments, which could potentially impact State Transportation Facilities. If you have any questions regarding these comments, please contact project coordinator Miya Edmonson, at (213) 897-6536 and refer to IGR/CEQA No 150932ME.

Sincerely,



DIANNA WATSON
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse