



SEP 09 2015

Mr. Raymond Rodriguez
California Resources Elk Hills, Inc.
P O Box 1001
Tupman, CA 93276

Re: Notice of Minor Title V Permit Modification
District Facility # S-2234
Project # S-1152878

Dear Mr. Rodriguez:

Enclosed is the District's analysis of your application for minor Title V permit modification for the facility identified above. You proposed a Title V minor permit modification to incorporate recently issued Authority to Construct (ATC) S-2234-52-11 (under project S-1152228) into the Title V operating permit. The ATC designates 24.5 MW natural gas-fired gas turbine engine cogeneration unit S-2234-52 as a compliant Dormant Emissions Unit.

Enclosed is the engineering evaluation with the following attachments: proposed modified Title V permit, recently issued Authority to Construct (ATC) S-2234-52-11, application, and previous Title V permit. This project will be subject to a 45-day EPA commenting period prior to the District taking final action.

If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,



Arnaud Marjollet
Director of Permit Services

Enclosures

cc: Gerardo C. Rios, EPA (w/enclosure) via email

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

TITLE V APPLICATION REVIEW

Minor Modification
Project #: S-1152878

Engineer: Homero Ramirez
Date: September 1, 2015

Facility Number: S-2234
Facility Name: California Resources Elk Hills, LLC
Mailing Address: P O Box 1001
Tupman, CA 93276

Contact Name: Raymond Rodriguez
Phone: (661) 763-6159

Responsible Official: Richard Garcia
Title: Environmental Team Leader

I. PROPOSAL

California Resources Elk Hills, LLC is proposing a Title V minor permit modification to incorporate recently issued Authority to Construct (ATC) S-2234-52-11 (under project S-1152228) into the Title V operating permit. The ATC designates 24.5 MW natural gas-fired gas turbine engine cogeneration unit S-2234-52 as compliant Dormant Emissions Unit (DEU).

The purpose of this evaluation is to identify all applicable requirements, determine if the facility will comply with the applicable requirements and to provide the legal and factual basis for the proposed revisions.

II. FACILITY LOCATION

The equipment is located at the NE/4 of Section 35, Township 30S, Range 23E, at its gas plant in Tupman.

III. EQUIPMENT DESCRIPTION

S-2234-52-12: ONE 24.5 MW NATURAL GAS-FIRED GAS TURBINE COGENERATION SYSTEM, INCLUDING 250 MMBTU/HR GENERAL ELECTRIC MODEL LM-2500 GAS TURBINE, 103 MMBTU/HR DUCT BURNER ASSEMBLY, 150,000 LB/HR HEAT RECOVERY STEAM GENERATOR, AND 6 MW STEAM TURBINE SERVING S-2234-52 AND S-2234-53

IV. SCOPE OF EPA AND PUBLIC REVIEW

This change to a Title V permit is considered to be a minor modification and, as such, requires no public review.

V. APPLICABLE REQUIREMENTS

District Rule 2520, Federally Mandated Operating Permits (Adopted June 21, 2001)

VI. DESCRIPTION OF PROPOSED MODIFICATIONS

California Resources Elk Hills, LLC requests to designate 24.5 MW natural gas-fired turbine engine cogeneration unit (S-2234-52) as a compliant dormant emissions unit (DEU).

S-2234-52-12:

Permit conditions 1 through 7 were added to the proposed Permit to Operate to specify the terms for designating the cogeneration unit a Dormant Emission Unit.

VII. COMPLIANCE

In accordance with Rule 2520, 3.20, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;

4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include;
 - a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
 - b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

In accordance with Rule 2520, the application meets the procedural requirements of section 11.4 by including:

1. A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;
2. The source's suggested draft permit; and
3. Certification by a responsible official that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used.

VIII. ATTACHMENTS

- A. Proposed Modified Title V Operating Permit No. S-2234-52-12
- B. Authority to Construct No. S-2234-52-11
- C. Application
- D. Previous Title V Operating Permit No. S-2234-52-9

ATTACHMENT A

Proposed Modified Title V Operating Permit No.
S-2234-52-12

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-2234-52-12

EXPIRATION DATE: 10/31/2016

SECTION: NE35 **TOWNSHIP:** 30S **RANGE:** 23E

EQUIPMENT DESCRIPTION:

ONE 24.5 MW NATURAL GAS-FIRED GAS TURBINE COGENERATION SYSTEM, INCLUDING 250 MMBTU/HR GENERAL ELECTRIC MODEL LM-2500 GAS TURBINE, 103 MMBTU/HR DUCT BURNER ASSEMBLY, 150,000 LB/HR HEAT RECOVERY STEAM GENERATOR, AND 6 MW STEAM TURBINE SERVING S-2234-52 AND S-2234-53

PERMIT UNIT REQUIREMENTS

1. This unit may be designated as a dormant emissions unit or an active emissions unit. The permittee shall notify the District's Compliance Division by US mail, email or Fax upon redesignating the unit. [District Rule 2080] Federally Enforceable Through Title V Permit
2. While dormant, the fuel line shall be physically disconnected from the unit. [District Rule 2080] Federally Enforceable Through Title V Permit
3. While dormant, normal source testing shall not be required. [District Rule 2080] Federally Enforceable Through Title V Permit
4. While dormant, normal monitoring and recordkeeping shall not be required. [District Rule 2080] Federally Enforceable Through Title V Permit
5. Upon recommencing operation of this unit, normal source testing shall resume. [District Rule 2080] Federally Enforceable Through Title V Permit
6. Any source testing required by this permit shall be performed within 60 days of recommencing operation of this unit, regardless of whether the unit remains active or is again designated as dormant. [District Rule 2080] Federally Enforceable Through Title V Permit
7. Records of all dates and times that this unit is designated as dormant or active, and copies of all corresponding notices to the District, shall be maintained, retained for a period of at least five years, and made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit
8. All equipment shall be maintained and operated according to manufacturers' recommendations. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Circular cross section exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and equipped with flow straighteners, if necessary, to minimize turbulence. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Gas turbine engine and duct burner assembly shall be equipped with continuously recording fuel gas flowmeters. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Gas turbine engine shall be equipped with continuously recording NOx and O2 monitors for engine exhaust gas stream after duct burners and catalyst beds. [District Rules 2201 and 4703, 6.2.1] Federally Enforceable Through Title V Permit
12. Startup and shutdown of gas turbine engine, as defined in 40 CFR Subpart A 60.2, shall not exceed a time period of one hour and one hour, respectively, per occurrence. [District Rules 2201 and 4703, 5.3.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

13. Gas turbine engine combustor steam injection system shall be equipped with continuously recording steam-to-fuel injection rate monitoring system accurate to within +/- 5%. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Except during periods of gas turbine engine startup/shutdown, gas turbine engine steam injection rate shall be maintained at steam-to-fuel ratio range documented to result in compliance with emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
15. All exhaust from gas turbine engine and duct burners shall flow through both SCR and oxidation catalyst beds. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Gas temperatures at SCR and oxidation catalyst inlets shall be monitored by operational temperature indicators. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Except during periods of gas turbine engine startup/shutdown, inlet gas temperatures of SCR and oxidation catalyst beds shall be maintained within ranges recommended by the catalyst manufacturers. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Installed SCR and oxidation catalyst beds shall provide space for additional catalyst if source operation cannot achieve emission sampling limits of NO_x, VOC, and CO. [District Rule 2201] Federally Enforceable Through Title V Permit
20. Except during periods of gas turbine engine startup/shutdown, gas turbine engine shall be shut down if steam injection or SCR system is inoperative. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Ammonia injection rate shall be controlled to maintain ammonia "breakthrough" to less than 20 ppmv (3-hr rolling average) from gas turbine exhaust. [District Rule 4102]
22. Excess emissions shall be defined as any operating hour in which 4-hour rolling average NO_x concentration exceeds applicable emissions limit and a period of monitor downtime shall be any unit operating hour in which sufficient data are not obtained to validate the hour for either NO_x or O₂ (or both). [40 CFR 60.334(J)(1)(iii)] Federally Enforceable Through Title V Permit
23. Transitional Operation Period shall be defined as any of following periods: bypass transition period, primary re-ignition period, reduced load period, start-up or shutdown. [District Rule 4703, 3.33] Federally Enforceable Through Title V Permit
24. Bypass Transition Period shall be defined as the duration of time that a gas turbine's operation transitions between the heat recovery steam generator and bypass exhaust stacks, provided all of the following conditions are met: a) The selective catalytic reduction catalyst is not within the required temperature range or the required ammonia saturation level has not yet been achieved; b) The duration of a bypass transition period shall not exceed two hours; c) NO_x emissions shall not exceed 15 ppmvd, corrected to 15% O₂, averaged over two (2) hours; and d) The applicable CO compliance limit shall not be exceeded. [District Rule 4703, 3.2] Federally Enforceable Through Title V Permit
25. Primary Re-ignition Period shall be defined as the duration of time during which a gas turbine is operated at less than rated capacity in order to reset the DLN combustion system following a primary re-ignition, provided all of the following conditions are met: a) The duration of a primary re-ignition period shall not exceed one hour; b) NO_x emissions shall not exceed 15 ppmvd, corrected at 15% O₂, averaged over one (1) hour; and c) CO emissions shall not exceed 25 ppmvd, corrected at 15% O₂. [District Rule 4703, 3.20] Federally Enforceable Through Title V Permit
26. Reduced Load Period shall be defined as the time during which a gas turbine is operated at less than rated capacity in order to change the position of the exhaust gas diverter gate, not to exceed one hour. [District Rule 4703, 3.23] Federally Enforceable Through Title V Permit
27. The emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during each transitional operation period. [District Rule 4703, 5.3.2] Federally Enforceable Through Title V Permit
28. No more than 6.00 MMscf/day of natural gas shall be consumed by gas turbine and no more than 2.47 MMscf/day of natural gas shall be consumed by duct burners. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

29. Maximum emissions from turbines S-2234-52 & -53 and standby boilers/heaters S-2234-1 & -3 shall not exceed the following daily emission limitations (DEL): PM10: 50.6 lb/day, NOx (as NO2): 245.7 lb/day, VOC: 51.4 lb/day, and CO: 544.6 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
30. During days of gas turbine startup/shutdown, daily NO2 and CO emissions shall be calculated by natural gas consumption rates, CEM results, and emission factors for standby boilers/heaters. [District Rule 2201] Federally Enforceable Through Title V Permit
31. During days of gas turbine startup/shutdown, permittee shall maintain accurate daily records of natural gas consumption in gas turbines for normal operation and startup/shutdown periods, and in LTS-1 & LTS-2 gas plant standby boilers/heaters. [District Rule 2201] Federally Enforceable Through Title V Permit
32. Permittee shall maintain daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown, and such records shall be made readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
33. Permittee shall maintain accurate records of CEM printouts, and daily natural gas consumption in gas turbine & duct burners, and shall make such records readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
34. Permittee shall report the following emission exceedances to the District: emission rates of NOx and CO on a 3-hr rolling average, NSPS NOx emission rate on one hour average, and DEL of NOx & CO during days of gas turbine engine startup/shutdown. [District Rule 2201] Federally Enforceable Through Title V Permit
35. Gas turbine lube oil system atmospheric vent shall be equipped with aerosol/smoke control provisions. [District Rule 2201] Federally Enforceable Through Title V Permit
36. Emission rates from gas turbine lube oil vent shall not exceed the following: PM10: 0.02 lb/hr and VOC: 0.00 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
37. PM10 and VOC emissions from lube oil vent shall be measured by source testing within 60 days upon detection of visible emissions in excess of 5% opacity or Ringelmann 1/4 from gas turbine lube oil vent. [District Rule 2201] Federally Enforceable Through Title V Permit
38. Except during periods of startup/shutdown, emission rates (3-hr rolling average) from gas turbine combustion shall not exceed: PM10: 0.004 lb/MMBtu, NOx as NO2: 0.013 lb/MMBtu & 3.75 ppmvd @ 15% O2, VOC: 0.004 lb/MMBtu, and CO: 0.043 lb/MMBtu. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
39. Except during periods of startup/shutdown, emission rates (3-hr rolling average) from duct burner combustion shall not exceed: PM10: 0.001 lb/MMBtu, NOx as NO2: 0.008 lb/MMBtu, VOC: 0.001 lb/MMBtu, and CO: 0.007 lb/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
40. If NOx CEM data & source testing results show compliance at lower NOx emission than 3.75 ppmvd @ 15% O2, District may adjust permitted NOx emission rate 12 months after complete implementation of this approval according to CEM data & testing results. [District Rule 2201] Federally Enforceable Through Title V Permit
41. NOx, VOC, CO, and ammonia emissions shall be measured by source testing annually 60 days prior to permit anniversary. [District Rule 2201] Federally Enforceable Through Title V Permit
42. Permittee shall maintain steam to fuel ratio during annual compliance testing to within +/- 5% of the average daily values recorded during the 60 day period prior to annual testing. [District Rule 2201] Federally Enforceable Through Title V Permit
43. Permittee shall maintain exhaust gas temperatures at SCR and oxidation catalyst inlets to within +/- 5% of the average daily values recorded during the 60 day period prior to annual testing. [District Rule 2201] Federally Enforceable Through Title V Permit
44. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
45. The results of each source test shall be submitted to the District within 60 days of field testing. [District Rule 1081] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

46. LTS-1 and LTS-2 gas plants (S-2234-3 & '1) standby boilers/heaters shall only be used when one or both gas turbines (S-2234-52 & '53) are inoperative. [District Rule 2201] Federally Enforceable Through Title V Permit
47. Gas turbine engine shall be equipped with G.E. Steward Stevenson turbine combustor steam injection system, Mitsubishi/Applied Thermal Systems selective catalytic reduction (SCR) with ammonia injection, and Grace oxidation catalyst system. [District Rule 2201] Federally Enforceable Through Title V Permit
48. Unit shall be fired exclusively on PUC-quality natural gas which has a sulfur content of less than or equal to 0.0026% by weight. [40 CFR 60.333(a) & (b); 60.332(a)] Federally Enforceable Through Title V Permit
49. Operator shall not discharge into the atmosphere combustion contaminants (PM) exceeding in concentration at the point of discharge, 0.1 gr/dscf. [District Rule 4201] Federally Enforceable Through Title V Permit
50. APCO or an authorized representative shall be allowed to inspect, as determined to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit
51. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [District Rule 1081] Federally Enforceable Through Title V Permit
52. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content (as hydrogen sulfide) of the natural gas being fired in the turbine shall be calculated using a continuous monitor averaged over a daily basis in accordance with SCAQMD Rule 431.1 Attachment A (as amended June 12, 1998). [District Rule 2520, 9.3.2, 40 CFR 60.335(d)] Federally Enforceable Through Title V Permit
53. If the turbine is not fired on PUC-regulated natural gas, the sulfur content (as hydrogen sulfide) of each fuel source shall be tested. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit
54. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b) and District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit
55. Performance testing shall be conducted annually to measure NOx and CO emission concentrations using the following test methods: EPA Methods 7E or 20 for NOx emissions, EPA Methods 10 or 10B for CO emissions, EPA Methods 3, 3A, or 20 for Oxygen content of the exhaust gas. The 9-run tests shall be performed at highest physically achievable load of the gas turbine. [40 CFR 60.335(a), (b)(7) and District Rule 4703, 6.3.1, 6.4.1, 6.4.2, & 6.4.3] Federally Enforceable Through Title V Permit
56. The CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [40 CFR 60.334(b)FSand District Rule 1081, 6.4] Federally Enforceable Through Title V Permit
57. Results of the CEM system shall be averaged over a three hour period, using consecutive 15-minute sampling periods in accordance with all applicable requirements of CFR 60.13. [40 CFR 60.13 and District Rule 4703, 5.1, 6.4] Federally Enforceable Through Title V Permit
58. Any gas turbine with an intermittently operated auxiliary burner shall demonstrate compliance with the auxiliary burner both on and off. [40 CFR 60.335(b) and District Rule 4703, 6.3.3] Federally Enforceable Through Title V Permit
59. The NOx and O2 CEMS shall meet the requirements in 40 CFR 60, Appendix F Procedure 1 and Part 60, Appendix B Performance Specifications 2 and 3, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [40 CFR 60.334(b)(1) and, District Rule 1080, 6.3, 6.5, 6.6, & 7.2] Federally Enforceable Through Title V Permit
60. The CEMS shall be linked to a data logger which is compatible with the District's Data acquisition system. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

61. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEMS that have been installed pursuant to District Rule 1080, and emission measurements. [District Rules 1080, 7.3, and 4703, 6.2.8, and 40 CFR 60.7 (b)] Federally Enforceable Through Title V Permit
62. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
63. The operator of a stationary gas turbine system shall maintain records of the date, time and duration of each bypass transition period and each primary re-ignition period. [District Rule 4703, 6.2.11] Federally Enforceable Through Title V Permit
64. The operator of a stationary gas turbine system shall provide source test information annually regarding the exhaust gas NOx and CO concentrations and the control efficiency of the emission control device. [District Rule 4703, 6.3.1] Federally Enforceable Through Title V Permit
65. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(a),(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit
66. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(a),(b) and District Rule 4703, 6.2.4] Federally Enforceable Through Title V Permit
67. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following subsumed requirements: 40 CFR 60.333 (a) and (b); 60.334(a),(b), and (c)(1); SJVUAPCD Rule 4703, Section 6.2.2 and 1080, 7.3. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
68. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: SJVUAPCD Rule 4201, 1081 and 1080, Sections 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334(b) and (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
69. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: SJVUAPCD Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
70. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following subsumed requirements: 40 CFR 60.332(a), (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
71. Operator shall install, operate and maintain in calibration a system which continuously measures and records: control system operating parameters, elapsed time of operation, the exhaust gas NOx and O2 concentrations. [40 CFR 60.334(a),(b)] Federally Enforceable Through Title V Permit
72. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [District Rule 1080, 9.0] Federally Enforceable Through Title V Permit
73. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit
74. Operator shall notify the APCO no later than eight hours after the detection of a breakdown of the CEM. Operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [District Rule 1080, 10.0] Federally Enforceable Through Title V Permit

DRAFT

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

75. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; C. applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; D. a negative declaration when no excess emissions occurred. [District Rule 1080, 8.0] Federally Enforceable Through Title V Permit
76. NOx and carbon monoxide daily emissions shall be measured by use of CEM data, fuel rate data, and daily hours of operation data. A written record of the required compliance demonstrations shall be maintained and made available for District inspection for a period of five years. [District Rule 2201] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

DRAFT

ATTACHMENT B

Authority to Construct No.
S-2234-52-11

AUTHORITY TO CONSTRUCT

PERMIT NO: S-2234-52-11

ISSUANCE DATE: 06/04/2015

LEGAL OWNER OR OPERATOR: CALIFORNIA RESOURCES ELK HILLS, LLC

MAILING ADDRESS: PO BOX 1001
TUPMAN, CA 93276

LOCATION: GAS PLANT
SECTION SE-35, T-30S, R-23E
TUPMAN, CA

SECTION: NE35 **TOWNSHIP:** 30S **RANGE:** 23E

EQUIPMENT DESCRIPTION:

MODIFICATION OF ONE 24.5 MW NATURAL GAS-FIRED GAS TURBINE COGENERATION SYSTEM, INCLUDING 250 MMBTU/HR GENERAL ELECTRIC MODEL LM-2500 GAS TURBINE, 103 MMBTU/HR DUCT BURNER ASSEMBLY, 150,000 LB/HR HEAT RECOVERY STEAM GENERATOR, AND 6 MW STEAM TURBINE SERVING S-2234-52 AND S-2234-53: DESIGNATE AS A COMPLIANT DORMANT EMISSIONS UNIT

CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. This unit may be designated as a dormant emissions unit or an active emissions unit. The permittee shall notify the District's Compliance Division by US mail, email or Fax upon redesignating the unit. [District Rule 2080] Federally Enforceable Through Title V Permit
3. While dormant, the fuel line shall be physically disconnected from the unit. [District Rule 2080] Federally Enforceable Through Title V Permit
4. While dormant, normal source testing shall not be required. [District Rule 2080] Federally Enforceable Through Title V Permit
5. While dormant, normal monitoring and recordkeeping shall not be required. [District Rule 2080] Federally Enforceable Through Title V Permit
6. Upon recommencing operation of this unit, normal source testing shall resume. [District Rule 2080] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

7. Any source testing required by this permit shall be performed within 60 days of recommencing operation of this unit, regardless of whether the unit remains active or is again designated as dormant. [District Rule 2080] Federally Enforceable Through Title V Permit
8. Records of all dates and times that this unit is designated as dormant or active, and copies of all corresponding notices to the District, shall be maintained, retained for a period of at least five years, and made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit
9. All equipment shall be maintained and operated according to manufacturers' recommendations. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Circular cross section exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and equipped with flow straighteners, if necessary, to minimize turbulence. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Gas turbine engine and duct burner assembly shall be equipped with continuously recording fuel gas flowmeters. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Gas turbine engine shall be equipped with continuously recording NO_x and O₂ monitors for engine exhaust gas stream after duct burners and catalyst beds. [District Rules 2201 and 4703, 6.2.1] Federally Enforceable Through Title V Permit
13. Startup and shutdown of gas turbine engine, as defined in 40 CFR Subpart A 60.2, shall not exceed a time period of one hour and one hour, respectively, per occurrence. [District Rules 2201 and 4703, 5.3.1] Federally Enforceable Through Title V Permit
14. Gas turbine engine combustor steam injection system shall be equipped with continuously recording steam-to-fuel injection rate monitoring system accurate to within +/- 5%. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Except during periods of gas turbine engine startup/shutdown, gas turbine engine steam injection rate shall be maintained at steam-to-fuel ratio range documented to result in compliance with emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
16. All exhaust from gas turbine engine and duct burners shall flow through both SCR and oxidation catalyst beds. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Gas temperatures at SCR and oxidation catalyst inlets shall be monitored by operational temperature indicators. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Except during periods of gas turbine engine startup/shutdown, inlet gas temperatures of SCR and oxidation catalyst beds shall be maintained within ranges recommended by the catalyst manufacturers. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit
20. Installed SCR and oxidation catalyst beds shall provide space for additional catalyst if source operation cannot achieve emission sampling limits of NO_x, VOC, and CO. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Except during periods of gas turbine engine startup/shutdown, gas turbine engine shall be shut down if steam injection or SCR system is inoperative. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Ammonia injection rate shall be controlled to maintain ammonia "breakthrough" to less than 20 ppmv (3-hr rolling average) from gas turbine exhaust. [District Rule 4102]
23. Excess emissions shall be defined as any operating hour in which 4-hour rolling average NO_x concentration exceeds applicable emissions limit and a period of monitor downtime shall be any unit operating hour in which sufficient data are not obtained to validate the hour for either NO_x or O₂ (or both). [40 CFR 60.334(J)(1)(iii)] Federally Enforceable Through Title V Permit
24. Transitional Operation Period shall be defined as any of following periods: bypass transition period, primary re-ignition period, reduced load period, start-up or shutdown. [District Rule 4703, 3.33] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

25. Bypass Transition Period shall be defined as the duration of time that a gas turbine's operation transitions between the heat recovery steam generator and bypass exhaust stacks, provided all of the following conditions are met: a) The selective catalytic reduction catalyst is not within the required temperature range or the required ammonia saturation level has not yet been achieved; b) The duration of a bypass transition period shall not exceed two hours; c) NOx emissions shall not exceed 15 ppmvd, corrected to 15% O₂, averaged over two (2) hours; and d) The applicable CO compliance limit shall not be exceeded. [District Rule 4703, 3.2] Federally Enforceable Through Title V Permit
26. Primary Re-ignition Period shall be defined as the duration of time during which a gas turbine is operated at less than rated capacity in order to reset the DLN combustion system following a primary re-ignition, provided all of the following conditions are met: a) The duration of a primary re-ignition period shall not exceed one hour; b) NOx emissions shall not exceed 15 ppmvd, corrected at 15% O₂, averaged over one (1) hour; and c) CO emissions shall not exceed 25 ppmvd, corrected at 15% O₂. [District Rule 4703, 3.20] Federally Enforceable Through Title V Permit
27. Reduced Load Period shall be defined as the time during which a gas turbine is operated at less than rated capacity in order to change the position of the exhaust gas diverter gate, not to exceed one hour. [District Rule 4703, 3.23] Federally Enforceable Through Title V Permit
28. The emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during each transitional operation period. [District Rule 4703, 5.3.2] Federally Enforceable Through Title V Permit
29. No more than 6.00 MMscf/day of natural gas shall be consumed by gas turbine and no more than 2.47 MMscf/day of natural gas shall be consumed by duct burners. [District Rule 2201] Federally Enforceable Through Title V Permit
30. Maximum emissions from turbines S-2234-52 & -53 and standby boilers/heaters S-2234-1 & -3 shall not exceed the following daily emission limitations (DEL): PM10: 50.6 lb/day, NOx (as NO₂): 245.7 lb/day, VOC: 51.4 lb/day, and CO: 544.6 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
31. During days of gas turbine startup/shutdown, daily NO₂ and CO emissions shall be calculated by natural gas consumption rates, CEM results, and emission factors for standby boilers/heaters. [District Rule 2201] Federally Enforceable Through Title V Permit
32. During days of gas turbine startup/shutdown, permittee shall maintain accurate daily records of natural gas consumption in gas turbines for normal operation and startup/shutdown periods, and in LTS-1 & LTS-2 gas plant standby boilers/heaters. [District Rule 2201] Federally Enforceable Through Title V Permit
33. Permittee shall maintain daily records of NO₂ and CO emission calculations during days of gas turbine startup/shutdown, and such records shall be made readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
34. Permittee shall maintain accurate records of CEM printouts, and daily natural gas consumption in gas turbine & duct burners, and shall make such records readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
35. Permittee shall report the following emission exceedances to the District: emission rates of NOx and CO on a 3-hr rolling average, NSPS NOx emission rate on one hour average, and DEL of NOx & CO during days of gas turbine engine startup/shutdown. [District Rule 2201] Federally Enforceable Through Title V Permit
36. Gas turbine lube oil system atmospheric vent shall be equipped with aerosol/smoke control provisions. [District Rule 2201] Federally Enforceable Through Title V Permit
37. Emission rates from gas turbine lube oil vent shall not exceed the following: PM10: 0.02 lb/hr and VOC: 0.00 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
38. PM10 and VOC emissions from lube oil vent shall be measured by source testing within 60 days upon detection of visible emissions in excess of 5% opacity or Ringelmann 1/4 from gas turbine lube oil vent. [District Rule 2201] Federally Enforceable Through Title V Permit
39. Except during periods of startup/shutdown, emission rates (3-hr rolling average) from gas turbine combustion shall not exceed: PM10: 0.004 lb/MMBtu, NOx as NO₂: 0.013 lb/MMBtu & 3.75 ppmvd @ 15% O₂, VOC: 0.004 lb/MMBtu, and CO: 0.043 lb/MMBtu. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

40. Except during periods of startup/shutdown, emission rates (3-hr rolling average) from duct burner combustion shall not exceed: PM10: 0.001 lb/MMBtu, NOx as NO2: 0.008 lb/MMBtu, VOC: 0.001 lb/MMBtu, and CO: 0.007 lb/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
41. If NOx CEM data & source testing results show compliance at lower NOx emission than 3.75 ppmvd @ 15% O2, District may adjust permitted NOx emission rate 12 months after complete implementation of this approval according to CEM data & testing results. [District Rule 2201] Federally Enforceable Through Title V Permit
42. NOx, VOC, CO, and ammonia emissions shall be measured by source testing annually 60 days prior to permit anniversary. [District Rule 2201] Federally Enforceable Through Title V Permit
43. Permittee shall maintain steam to fuel ratio during annual compliance testing to within +/- 5% of the average daily values recorded during the 60 day period prior to annual testing. [District Rule 2201] Federally Enforceable Through Title V Permit
44. Permittee shall maintain exhaust gas temperatures at SCR and oxidation catalyst inlets to within +/- 5% of the average daily values recorded during the 60 day period prior to annual testing. [District Rule 2201] Federally Enforceable Through Title V Permit
45. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
46. The results of each source test shall be submitted to the District within 60 days of field testing. [District Rule 1081] Federally Enforceable Through Title V Permit
47. LTS-1 and LTS-2 gas plants (S-2234-3 & '1) standby boilers/heaters shall only be used when one or both gas turbines (S-2234-52 & '53) are inoperative. [District Rule 2201] Federally Enforceable Through Title V Permit
48. Gas turbine engine shall be equipped with G.E. Steward Stevenson turbine combustor steam injection system, Mitsubishi/Applied Thermal Systems selective catalytic reduction (SCR) with ammonia injection, and Grace oxidation catalyst system. [District Rule 2201] Federally Enforceable Through Title V Permit
49. Unit shall be fired exclusively on PUC-quality natural gas which has a sulfur content of less than or equal to 0.0026% by weight. [40 CFR 60.333(a) & (b); 60.332(a)] Federally Enforceable Through Title V Permit
50. Operator shall not discharge into the atmosphere combustion contaminants (PM) exceeding in concentration at the point of discharge, 0.1 gr/dscf. [District Rule 4201] Federally Enforceable Through Title V Permit
51. APCO or an authorized representative shall be allowed to inspect, as determined to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit
52. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [District Rule 1081] Federally Enforceable Through Title V Permit
53. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content (as hydrogen sulfide) of the natural gas being fired in the turbine shall be calculated using a continuous monitor averaged over a daily basis in accordance with SCAQMD Rule 431.1 Attachment A (as amended June 12, 1998). [District Rule 2520, 9.3.2, 40 CFR 60.335(d)] Federally Enforceable Through Title V Permit
54. If the turbine is not fired on PUC-regulated natural gas, the sulfur content (as hydrogen sulfide) of each fuel source shall be tested. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit
55. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b) and District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit
56. Performance testing shall be conducted annually to measure NOx and CO emission concentrations using the following test methods: EPA Methods 7E or 20 for NOx emissions, EPA Methods 10 or 10B for CO emissions, EPA Methods 3, 3A, or 20 for Oxygen content of the exhaust gas. The 9-run tests shall be performed at highest physically achievable load of the gas turbine. [40 CFR 60.335(a), (b)(7) and District Rule 4703, 6.3.1, 6.4.1, 6.4.2, & 6.4.3] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

57. The CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [40 CFR 60.334(b)FSand District Rule 1081, 6.4] Federally Enforceable Through Title V Permit
58. Results of the CEM system shall be averaged over a three hour period, using consecutive 15-minute sampling periods in accordance with all applicable requirements of CFR 60.13. [40 CFR 60.13 and District Rule 4703, 5.1, 6.4] Federally Enforceable Through Title V Permit
59. Any gas turbine with an intermittently operated auxiliary burner shall demonstrate compliance with the auxiliary burner both on and off. [40 CFR 60.335(b) and District Rule 4703, 6.3.3] Federally Enforceable Through Title V Permit
60. The NOx and O2 CEMS shall meet the requirements in 40 CFR 60, Appendix F Procedure 1 and Part 60, Appendix B Performance Specifications 2 and 3, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [40 CFR 60.334(b)(1) and, District Rule 1080, 6.3, 6.5, 6.6, & 7.2] Federally Enforceable Through Title V Permit
61. The CEMS shall be linked to a data logger which is compatible with the District's Data acquisition system. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit
62. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEMS that have been installed pursuant to District Rule 1080, and emission measurements. [District Rules 1080, 7.3, and 4703, 6.2.8, and 40 CFR 60.7 (b)] Federally Enforceable Through Title V Permit
63. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
64. The operator of a stationary gas turbine system shall maintain records of the date, time and duration of each bypass transition period and each primary re-ignition period. [District Rule 4703, 6.2.11] Federally Enforceable Through Title V Permit
65. The operator of a stationary gas turbine system shall provide source test information annually regarding the exhaust gas NOx and CO concentrations and the control efficiency of the emission control device. [District Rule 4703, 6.3.1] Federally Enforceable Through Title V Permit
66. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(a),(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit
67. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(a),(b) and District Rule 4703, 6.2.4] Federally Enforceable Through Title V Permit
68. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following subsumed requirements: 40 CFR 60.333 (a) and (b); 60.334(a),(b), and (c)(1); SJVUAPCD Rule 4703, Section 6.2.2 and 1080, 7.3. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
69. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: SJVUAPCD Rule 4201, 1081 and 1080, Sections 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334(b) and (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
70. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: SJVUAPCD Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

71. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following subsumed requirements: 40 CFR 60.332(a), (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
72. Operator shall install, operate and maintain in calibration a system which continuously measures and records: control system operating parameters, elapsed time of operation, the exhaust gas NOx and O2 concentrations. [40 CFR 60.334(a),(b)] Federally Enforceable Through Title V Permit
73. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [District Rule 1080, 9.0] Federally Enforceable Through Title V Permit
74. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit
75. Operator shall notify the APCO no later than eight hours after the detection of a breakdown of the CEM. Operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [District Rule 1080, 10.0] Federally Enforceable Through Title V Permit
76. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; C. applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; D. a negative declaration when no excess emissions occurred. [District Rule 1080, 8.0] Federally Enforceable Through Title V Permit
77. NOx and carbon monoxide daily emissions shall be measured by use of CEM data, fuel rate data, and daily hours of operation data. A written record of the required compliance demonstrations shall be maintained and made available for District inspection for a period of five years. [District Rule 2201] Federally Enforceable Through Title V Permit

ATTACHMENT C

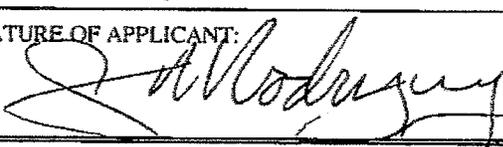
Application

San Joaquin Valley Air Pollution Control District

www.valleyair.org

Permit Application For:

ADMINISTRATIVE AMENDMENT MINOR MODIFICATION SIGNIFICANT MODIFICATION

1. PERMIT TO BE ISSUED TO: <p style="text-align: center;">California Resources Elk Hills, LLC</p>	
2. MAILING ADDRESS: STREET/P O BOX: <u>PO Box 1001, 28590 Hwy 119</u> CITY: <u>Tupman</u> STATE: <u>CA</u> 9-DIGIT ZIP CODE: <u>93276</u>	
3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED: STREET: <u>Elk Hills</u> CITY: <u>Tupman</u> 1/4 SECTION _____ TOWNSHIP _____ RANGE _____	INSTALLATION DATE:
4. GENERAL NATURE OF BUSINESS: Oil and Natural Gas Production	
5. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE (include Permit #'s if known, and use additional sheets if necessary) Incorporate the following ATC into S-2234 Title V Permit: S-2234-52-11	
6. TYPE OR PRINT NAME OF APPLICANT: <p style="text-align: center;">Raymond Rodriguez</p>	TITLE OF APPLICANT: <p style="text-align: center;">Air Team Lead</p>
7. SIGNATURE OF APPLICANT:  DATE: <u>6/11/2015</u>	PHONE: (661) 763-6159 FAX: (661) 763-6681 EMAIL: Raymond.rodriguez@crc.com

For APCD Use Only:

NO \$

DATE STAMP	FILING FEE RECEIVED: \$ _____ CHECK#: _____
	DATE PAID: _____
	PROJECT NO: <u>S-1152878</u> FACILITY ID: <u>S-2234</u>

San Joaquin Valley Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

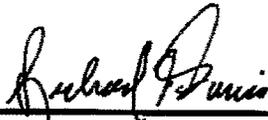
- SIGNIFICANT PERMIT MODIFICATION ADMINISTRATIVE AMENDMENT
 MINOR PERMIT MODIFICATION

COMPANY NAME: California Resources Elk Hills, LLC	FACILITY ID: S - 2234
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: California Resources Elk Hills, LLC	
3. Agent to the Owner: California Resources Elk Hills, LLC	

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial all circles for confirmation):

- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).
- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.
- Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:



Signature of Responsible Official

Richard F. Garcia

Name of Responsible Official (please print)

Environmental Team Leader

Title of Responsible Official (please print)



Date

ATTACHMENT D

Previous Title V Operating Permit No.
S-2234-52-9

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-2234-52-9

EXPIRATION DATE: 10/31/2016

SECTION: NE35 **TOWNSHIP:** 30S **RANGE:** 23E

EQUIPMENT DESCRIPTION:

ONE 24.5 MW NATURAL GAS-FIRED GAS TURBINE COGENERATION SYSTEM, INCLUDING 250 MMBTU/HR GENERAL ELECTRIC MODEL LM-2500 GAS TURBINE, 103 MMBTU/HR DUCT BURNER ASSEMBLY, 150,000 LB/HR HEAT RECOVERY STEAM GENERATOR, AND 6 MW STEAM TURBINE SERVING S-2234-52 AND S-2234-53

PERMIT UNIT REQUIREMENTS

1. All equipment shall be maintained and operated according to manufacturers' recommendations. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Circular cross section exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and equipped with flow straighteners, if necessary, to minimize turbulence. [District Rule 2201] Federally Enforceable Through Title V Permit
3. Gas turbine engine and duct burner assembly shall be equipped with continuously recording fuel gas flowmeters. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Gas turbine engine shall be equipped with continuously recording NO_x and O₂ monitors for engine exhaust gas stream after duct burners and catalyst beds. [District Rules 2201 and 4703, 6.2.1] Federally Enforceable Through Title V Permit
5. Startup and shutdown of gas turbine engine, as defined in 40 CFR Subpart A 60.2, shall not exceed a time period of one hour and one hour, respectively, per occurrence. [District Rules 2201 and 4703, 5.3.1] Federally Enforceable Through Title V Permit
6. Gas turbine engine combustor steam injection system shall be equipped with continuously recording steam-to-fuel injection rate monitoring system accurate to within +/- 5%. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Except during periods of gas turbine engine startup/shutdown, gas turbine engine steam injection rate shall be maintained at steam-to-fuel ratio range documented to result in compliance with emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
8. All exhaust from gas turbine engine and duct burners shall flow through both SCR and oxidation catalyst beds. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Gas temperatures at SCR and oxidation catalyst inlets shall be monitored by operational temperature indicators. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Except during periods of gas turbine engine startup/shutdown, inlet gas temperatures of SCR and oxidation catalyst beds shall be maintained within ranges recommended by the catalyst manufacturers. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Installed SCR and oxidation catalyst beds shall provide space for additional catalyst if source operation cannot achieve emission sampling limits of NO_x, VOC, and CO. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

13. Except during periods of gas turbine engine startup/shutdown, gas turbine engine shall be shut down if steam injection or SCR system is inoperative. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Ammonia injection rate shall be controlled to maintain ammonia "breakthrough" to less than 20 ppmv (3-hr rolling average) from gas turbine exhaust. [District Rule 4102]
15. Excess emissions shall be defined as any operating hour in which 4-hour rolling average NOx concentration exceeds applicable emissions limit and a period of monitor downtime shall be any unit operating hour in which sufficient data are not obtained to validate the hour for either NOx or O2 (or both). [40 CFR 60.334(J)(1)(iii)] Federally Enforceable Through Title V Permit
16. Transitional Operation Period shall be defined as any of following periods: bypass transition period, primary re-ignition period, reduced load period, start-up or shutdown. [District Rule 4703, 3.33] Federally Enforceable Through Title V Permit
17. Bypass Transition Period shall be defined as the duration of time that a gas turbine's operation transitions between the heat recovery steam generator and bypass exhaust stacks, provided all of the following conditions are met: a) The selective catalytic reduction catalyst is not within the required temperature range or the required ammonia saturation level has not yet been achieved; b) The duration of a bypass transition period shall not exceed two hours; c) NOx emissions shall not exceed 15 ppmvd, corrected to 15% O2, averaged over two (2) hours; and d) The applicable CO compliance limit shall not be exceeded. [District Rule 4703, 3.2] Federally Enforceable Through Title V Permit
18. Primary Re-ignition Period shall be defined as the duration of time during which a gas turbine is operated at less than rated capacity in order to reset the DLN combustion system following a primary re-ignition, provided all of the following conditions are met: a) The duration of a primary re-ignition period shall not exceed one hour; b) NOx emissions shall not exceed 15 ppmvd, corrected at 15% O2, averaged over one (1) hour; and c) CO emissions shall not exceed 25 ppmvd, corrected at 15% O2. [District Rule 4703, 3.20] Federally Enforceable Through Title V Permit
19. Reduced Load Period shall be defined as the time during which a gas turbine is operated at less than rated capacity in order to change the position of the exhaust gas diverter gate, not to exceed one hour. [District Rule 4703, 3.23] Federally Enforceable Through Title V Permit
20. The emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during each transitional operation period. [District Rule 4703, 5.3.2] Federally Enforceable Through Title V Permit
21. No more than 6.00 MMscf/day of natural gas shall be consumed by gas turbine and no more than 2.47 MMscf/day of natural gas shall be consumed by duct burners. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Maximum emissions from turbines S-2234-52 & -53 and standby boilers/heaters S-2234-1 & -3 shall not exceed the following daily emission limitations (DEL): PM10: 50.6 lb/day, NOx (as NO2): 245.7 lb/day, VOC: 51.4 lb/day, and CO: 544.6 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
23. During days of gas turbine startup/shutdown, daily NO2 and CO emissions shall be calculated by natural gas consumption rates, CEM results, and emission factors for standby boilers/heaters. [District Rule 2201] Federally Enforceable Through Title V Permit
24. During days of gas turbine startup/shutdown, permittee shall maintain accurate daily records of natural gas consumption in gas turbines for normal operation and startup/shutdown periods, and in LTS-1 & LTS-2 gas plant standby boilers/heaters. [District Rule 2201] Federally Enforceable Through Title V Permit
25. Permittee shall maintain daily records of NO2 and CO emission calculations during days of gas turbine startup/shutdown, and such records shall be made readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
26. Permittee shall maintain accurate records of CEM printouts, and daily natural gas consumption in gas turbine & duct burners, and shall make such records readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
27. Permittee shall report the following emission exceedances to the District: emission rates of NOx and CO on a 3-hr rolling average, NSPS NOx emission rate on one hour average, and DEL of NOx & CO during days of gas turbine engine startup/shutdown. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

28. Gas turbine lube oil system atmospheric vent shall be equipped with aerosol/smoke control provisions. [District Rule 2201] Federally Enforceable Through Title V Permit
29. Emission rates from gas turbine lube oil vent shall not exceed the following: PM10: 0.02 lb/hr and VOC: 0.00 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
30. PM10 and VOC emissions from lube oil vent shall be measured by source testing within 60 days upon detection of visible emissions in excess of 5% opacity or Ringelmann 1/4 from gas turbine lube oil vent. [District Rule 2201] Federally Enforceable Through Title V Permit
31. Except during periods of startup/shutdown, emission rates (3-hr rolling average) from gas turbine combustion shall not exceed: PM10: 0.004 lb/MMBtu, NOx as NO2: 0.013 lb/MMBtu & 3.75 ppmvd @ 15% O2, VOC: 0.004 lb/MMBtu, and CO: 0.043 lb/MMBtu. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
32. Except during periods of startup/shutdown, emission rates (3-hr rolling average) from duct burner combustion shall not exceed: PM10: 0.001 lb/MMBtu, NOx as NO2: 0.008 lb/MMBtu, VOC: 0.001 lb/MMBtu, and CO: 0.007 lb/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
33. If NOx CEM data & source testing results show compliance at lower NOx emission than 3.75 ppmvd @ 15% O2, District may adjust permitted NOx emission rate 12 months after complete implementation of this approval according to CEM data & testing results. [District Rule 2201] Federally Enforceable Through Title V Permit
34. NOx, VOC, CO, and ammonia emissions shall be measured by source testing annually 60 days prior to permit anniversary. [District Rule 2201] Federally Enforceable Through Title V Permit
35. Permittee shall maintain steam to fuel ratio during annual compliance testing to within +/- 5% of the average daily values recorded during the 60 day period prior to annual testing. [District Rule 2201] Federally Enforceable Through Title V Permit
36. Permittee shall maintain exhaust gas temperatures at SCR and oxidation catalyst inlets to within +/- 5% of the average daily values recorded during the 60 day period prior to annual testing. [District Rule 2201] Federally Enforceable Through Title V Permit
37. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
38. The results of each source test shall be submitted to the District within 60 days of field testing. [District Rule 1081] Federally Enforceable Through Title V Permit
39. LTS-1 and LTS-2 gas plants (S-2234-3 & '1) standby boilers/heaters shall only be used when one or both gas turbines (S-2234-52 & '53) are inoperative. [District Rule 2201] Federally Enforceable Through Title V Permit
40. Gas turbine engine shall be equipped with G.E. Steward Stevenson turbine combustor steam injection system, Mitsubishi/Applied Thermal Systems selective catalytic reduction (SCR) with ammonia injection, and Grace oxidation catalyst system. [District Rule 2201] Federally Enforceable Through Title V Permit
41. Unit shall be fired exclusively on PUC-quality natural gas which has a sulfur content of less than or equal to 0.0026% by weight. [40 CFR 60.333(a) & (b); 60.332(a)] Federally Enforceable Through Title V Permit
42. Operator shall not discharge into the atmosphere combustion contaminants (PM) exceeding in concentration at the point of discharge, 0.1 gr/dscf. [District Rule 4201] Federally Enforceable Through Title V Permit
43. APCO or an authorized representative shall be allowed to inspect, as determined to be necessary, the monitoring devices required by this rule to ensure that such devices are functioning properly. [District Rule 1080, 11.0] Federally Enforceable Through Title V Permit
44. Operator shall be required to conform to the compliance testing procedures described in District Rule 1081. [District Rule 1081] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

45. If the turbine is not fired on PUC-regulated natural gas, then the sulfur content (as hydrogen sulfide) of the natural gas being fired in the turbine shall be calculated using a continuous monitor averaged over a daily basis in accordance with SCAQMD Rule 431.1 Attachment A (as amended June 12, 1998). [District Rule 2520, 9.3.2, 40 CFR 60.335(d)] Federally Enforceable Through Title V Permit
46. If the turbine is not fired on PUC-regulated natural gas, the sulfur content (as hydrogen sulfide) of each fuel source shall be tested. [40 CFR 60.334(b)(2)] Federally Enforceable Through Title V Permit
47. The HHV and LHV of the fuel shall be determined using ASTM D3588-91, ASTM 1826-88, OR ASTM 1945-81. [40 CFR 60.332(a),(b) and District Rule 4703, 6.4.5] Federally Enforceable Through Title V Permit
48. Performance testing shall be conducted annually to measure NOx and CO emission concentrations using the following test methods: EPA Methods 7E or 20 for NOx emissions, EPA Methods 10 or 10B for CO emissions, EPA Methods 3, 3A, or 20 for Oxygen content of the exhaust gas. The 9-run tests shall be performed at highest physically achievable load of the gas turbine. [40 CFR 60.335(a), (b)(7) and District Rule 4703, 6.3.1, 6.4.1, 6.4.2, & 6.4.3] Federally Enforceable Through Title V Permit
49. The CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and date recording) for each successive 15-minute period or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [40 CFR 60.334(b)FSand District Rule 1081, 6.4] Federally Enforceable Through Title V Permit
50. Results of the CEM system shall be averaged over a three hour period, using consecutive 15-minute sampling periods in accordance with all applicable requirements of CFR 60.13. [40 CFR 60.13 and District Rule 4703, 5.1, 6.4] Federally Enforceable Through Title V Permit
51. Any gas turbine with an intermittently operated auxiliary burner shall demonstrate compliance with the auxiliary burner both on and off. [40 CFR 60.335(b) and District Rule 4703, 6.3.3] Federally Enforceable Through Title V Permit
52. The NOx and O2 CEMS shall meet the requirements in 40 CFR 60, Appendix F Procedure 1 and Part 60, Appendix B Performance Specifications 2 and 3, or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [40 CFR 60.334(b)(1) and, District Rule 1080, 6.3, 6.5, 6.6, & 7.2] Federally Enforceable Through Title V Permit
53. The CEMS shall be linked to a data logger which is compatible with the District's Data acquisition system. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080, 7.1] Federally Enforceable Through Title V Permit
54. Records shall be maintained and shall contain: the occurrence and duration of any start-up, shutdown, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEMS that have been installed pursuant to District Rule 1080, and emission measurements. [District Rules 1080, 7.3, and 4703, 6.2.8, and 40 CFR 60.7 (b)] Federally Enforceable Through Title V Permit
55. If the turbine is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
56. The operator of a stationary gas turbine system shall maintain records of the date, time and duration of each bypass transition period and each primary re-ignition period. [District Rule 4703, 6.2.11] Federally Enforceable Through Title V Permit
57. The operator of a stationary gas turbine system shall provide source test information annually regarding the exhaust gas NOx and CO concentrations and the control efficiency of the emission control device. [District Rule 4703, 6.3.1] Federally Enforceable Through Title V Permit
58. Results of continuous emission monitoring must be averaged in accordance with the requirements of 40 CFR 60.13. [40 CFR 60.334(a),(b),(c) and District Rule 4703, 5.0] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

59. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. [40 CFR 60.332(a),(b) and District Rule 4703, 6.2.4] Federally Enforceable Through Title V Permit
60. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following subsumed requirements: 40 CFR 60.333 (a) and (b); 60.334(a),(b), and (c)(1); SJVUAPCD Rule 4703, Section 6.2.2 and 1080, 7.3. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
61. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: SJVUAPCD Rule 4201, 1081 and 1080, Sections 6.5, 7.2, 8.0, 9.0, and 10.0; 40 CFR 60.332(c) and (d); 60.334(b) and (c)(2); 60.335(d). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
62. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: SJVUAPCD Rule 4703, sections 5.0, 5.1.1, 6.2.1, 6.2.4, 6.3, 6.4.1, 6.4.3, 6.4.5, and 6.4.6. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
63. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following subsumed requirements: 40 CFR 60.332(a), (b); 60.335(a), (b), (c), and (e). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
64. Operator shall install, operate and maintain in calibration a system which continuously measures and records: control system operating parameters, elapsed time of operation, the exhaust gas NOx and O2 concentrations. [40 CFR 60.334(a),(b)] Federally Enforceable Through Title V Permit
65. A violation of NOx emission standards indicated by the NOx CEM shall be reported by the operator to the APCO within 96 hours. [District Rule 1080, 9.0] Federally Enforceable Through Title V Permit
66. Operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(c)(2)] Federally Enforceable Through Title V Permit
67. Operator shall notify the APCO no later than eight hours after the detection of a breakdown of the CEM. Operator shall inform the APCO of the intent to shut down the CEM at least 24 hours prior to the event. [District Rule 1080, 10.0] Federally Enforceable Through Title V Permit
68. Operators of CEM's installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include: A. time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; B. averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; C. applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; D. a negative declaration when no excess emissions occurred. [District Rule 1080, 8.0] Federally Enforceable Through Title V Permit
69. NOx and carbon monoxide daily emissions shall be measured by use of CEM data, fuel rate data, and daily hours of operation data. A written record of the required compliance demonstrations shall be maintained and made available for District inspection for a period of five years. [District Rule 2201] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.