San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

MAR 13 2015

Mr. Timothy Alburger
Seneca Resources
4800 Corporate Court
Bakersfield, CA 93311

Re: Proposed Authority to Construct/Certificate of Conformity (Minor Mod)
District Facility # S-3755
Project # 1144435

Dear Mr. Alburger:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. This project authorizes the modification of one transportable 20 MMBtu/hr TEOR/natural gas fired steam generator to add Section SE 25, Township 31S and Range 22E as an approved location where the unit can operate.

After addressing all comments made during the 45-day EPA comment period, the District intends to issue the Authority to Construct with a Certificate of Conformity. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Sincerely,

Arnaud Marjollet
Director of Permit Services

Enclosures

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

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San Joaquin Valley Air Pollution Control District

Authority to Construct
Application Review

Modification of One 20.0 MMBtu/hr TEOR/Natural Gas Fired Steam Generator

Facility Name:	Seneca Resources	Date:	March 11, 2015
Mailing Address:	4800 Corporate Court Bakersfield, CA 93311	Engineer:	Dustin Brown
		Lead Engineer:	Joven Refuerzo
Contact Person:	Timothy Alburger		
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Application #(s):	S-3755-11-9		
Project #:	1144435		
Deemed Complete:	January 2, 2015		

I. Proposal

Seneca Resources has submitted an Authority to Construct (ATC) application for the modification of one portable TEOR/natural gas fired steam generator to add Section SE 25, Township 31S, Range 22E as an approved location this unit can operate at. No other changes to the method of operation of this unit will occur as a part of this project (current permit S-3755-11-8 included in Appendix A).

Seneca Resources received their Title V Permit on March 6, 2012. This modification can be classified as a Title V minor modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. Seneca Resources must apply to administratively amend their Title V permit.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4304	Equipment Tuning Procedure for Boilers, Steam Generators and Process Heaters (10/19/95)

Rule 4305	Boilers, Steam Generators and Process Heaters – Phase II (8/21/03)
Rule 4306	Boilers, Steam Generators and Process Heaters – Phase III (10/16/08)
Rule 4320	Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08)
Rule 4351	Boilers, Steam Generators and Process Heaters – Phase I (8/21/03)
Rule 4405	Oxides of Nitrogen Emissions From Existing Steam Generators Used In Thermally Enhanced Oil Recovery -Central And Western Kern County Fields (12/17/92)
Rule 4406	Sulfur Compounds From Oil-Field Steam Generators – Kern County (12/17/92)
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice

Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

Unit S-3755-11 is authorized to operate at the following locations:

Field	Section	Township	Range
North Lost Hills	24	26S	20E
North Midway-Sunset	15	31S	22E
North Midway-Sunset	14	31S	22E
South Midway-Sunset (Maricopa)	7	11N	23W
South Midway-Sunset (Maricopa)	12	11N	24W
South Midway-Sunset (Maricopa)	13	11N	24W
South Midway-Sunset (Maricopa)	18	11N	23W
South Midway-Sunset (Maricopa)	19	11N	23W
South Midway-Sunset (Maricopa)	20	11N	23W
North Midway-Sunset (new)	**SE25**	**31S**	**22E**

None of the locations listed above are within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

Seneca Resources operates an oil and gas production facility within the heavy oil western stationary source. The steam generator produces steam which is injected into the formation to lower the viscosity of the oil thereby facilitating the extraction of the oil.

This project deals with adding a new location that the steam generator can operate at within their stationary source. The proposed project will not result in any physical changes to the steam generator or its method of operation.

V. Equipment Listing

Pre-Project Equipment Description:

S-3755-11-8: 20 MMBTU/HR TEOR GAS AND NATURAL GAS-FIRED STEAM GENERATOR WITH NORTH AMERICAN MAGNA-FLAME LE MODEL 4211-21/X1288 LOW NOX BURNER

ATC Equipment Description:

S-3755-11-9: MODIFICATION OF TRANSPORTABLE 20 MMBTU/HR TEOR GAS AND NATURAL GAS-FIRED STEAM GENERATOR WITH NORTH AMERICAN MAGNA-FLAME LE MODEL 4211-21/X1288 LOW NOX BURNER: ADD SECTION SE 25, TOWNSHIP 31S AND RANGE 22E AS AN APPROVED LOCATION WHERE THIS UNIT CAN OPERATE

Post Project Equipment Description:

S-3755-11-9: TRANSPORTABLE 20 MMBTU/HR TEOR GAS AND NATURAL GAS-FIRED STEAM GENERATOR WITH NORTH AMERICAN MAGNA-FLAME LE MODEL 4211-21/X1288 LOW NOX BURNER

VI. Emission Control Technology Evaluation

The unit is equipped with an ultra-low NO_X burner and will be fired on PUC-quality natural gas or TEOR gas containing less than 50% by volume PUC-quality natural gas.

Ultra Low-NO_X burners reduce NO_X formation by producing lower flame temperatures (and longer flames) than conventional burners. Conventional burners thoroughly mix all the fuel and air in a single stage just prior to combustion, whereas low-NO_X burners delay the mixing of fuel and air by introducing the fuel (or sometimes the air) in multiple stages. Generally, in the first combustion stage, the air-fuel mixture is fuel rich. In a fuel rich environment, all the oxygen will be consumed in reactions with the fuel, leaving no excess oxygen available to react with nitrogen to produce thermal NO_X. In the secondary and tertiary stages, the combustion zone is maintained in a fuel-lean environment. The excess air in these stages helps to reduce the flame temperature so that the reaction between the excess oxygen with nitrogen is minimized.

VII. General Calculations

This project does not meet the criteria for a Rule 2201 Modification, as defined in Section 3.26, and is therefore not subject to the requirements of Rule 2201. Therefore, formal calculations for Rule 2201 are not required and the Potential to Emit (PE) will be calculated for reference purposes only.

A. Emission Factors

The following emission factors were taken from the current permit for this unit.

Pollutant	Emission Factors	
NO_X (PUC-Quality Gas)	0.011 lb-NO_X/MMBtu	9 ppmvd NO_X (@ 3% O_2)
NO_X (less than 50% PUC-Quality Gas)	0.014 lb-NO_X/MMBtu	12 ppmvd NO_X (@ 3% O_2)
SO_X	0.0143 lb-SO_X/MMBtu*	--
PM10	0.0117 lb-PM10/MMBtu	--
CO	0.114 lb-CO/MMBtu	154 ppmvd CO (@ 3% O_2)
VOC	0.008 lb-VOC/MMBtu	--

*Based on conversion of maximum fuel sulfur content limit of 5 grains/100 dscf (taken from application review performed for project S-1120070).

B. Calculations

The following daily and annual PE values for NO_X, SO_X, PM_{10}, CO and VOC emissions were taken from the application review performed under project S-1120070.

Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
Daily PE (lb/day)	6.7	6.9	5.6	54.6	4.1
Annual PE (lb/year)	2,453	2,505	2,050	19,973	1,489

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

Rule 2201 applies to all new stationary sources and all modifications to existing stationary sources which are subject to District permit requirements and after construction emit or may emit one or more affected pollutant. Per Section 3.25.3, the following shall not be considered a modification:

- A change in ownership of an existing emissions unit with valid Permit to Operate provided that the APCO determines that all applicable offset provisions required by the Permit to Operate will be met;
- A change in ownership of an entire existing Stationary Source with a valid Permit to Operate;
- A change which consists solely of a transfer of location of an emissions unit within a Stationary Source; or.
- Routine replacement of a whole or partial emissions unit where the replacement part is the same as the original emissions unit in all respects except for the serial number.

As discussed above, the proposed project only deals with authorizing the modification of this portable steam generator to operate at a new location. The new location still lies within Seneca Resource's existing stationary source. Therefore, in accordance with Section 3.25.3.3 the proposed project shall not be considered a modification under Rule 2201 and the requirements of this rule are not applicable to this project. No further discussion is required.

Rule 2410 Prevention of Significant Deterioration

Rule 2410 applies to pollutants for which the District is in attainment or for unclasssified, pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10

The first step of this PSD evaluation consists of determining whether the facility is an existing PSD Major Source or not.

As calculated under project S-1142803, this facility is not an existing PSD major source for any pollutant.

In the case the facility is an existing PSD Major Source, the second step of the PSD evaluation is to determine if the project results in a PSD significant increase.

I. Project Emissions Increase - New Major Source Determination

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new major source subject to PSD requirements.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO2	VOC	SO2	CO	PM	PM10
Total PE from New and Modified Units	1.2	0.74	1.25	10.0	1.03	1.03
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	N	N	N	N	N	N

As shown in the table above, the potential to emit for the project, by itself, does not exceed any PSD major source threshold. Therefore Rule 2410 is not applicable and no further analysis is required.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit.

In accordance with Rule 2520, 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.

As discussed above, the facility has applied for a Certificate of Conformity (COC) along with this ATC. Therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility may construct/operate under the ATC upon submittal of the Title V administrative amendment application.

Rule 4001 New Source Performance Standards (NSPS)

40 CFR Part 60, Subpart Dc applies to Small Industrial-Commercial-Industrial Steam Generators between 10 MMBtu/hr and 100 MMBtu/hr (post-6/9/89 construction, modification or, reconstruction). The steam generator listed in this project have previously been subject to this subpart. The applicable monthly fuel use record keeping requirements of section 60.48c(g) will be satisfied by District Rule 4306 and Rule 4320 requirements.

The applicable 2-year record retention requirement of section 60.48c(i) will be subsumed by the District's 5-year record retention requirement.

In addition, 40 CFR Part 60, Subpart A, section 14, defines the meaning of modification to which the the standards are applicable. §60.14, paragraph (e)(5) states that the following will not be considered as a modification: *"the addition or use of any system or device whose primary funtion is the reduction of air pollutants, except when an emission control system is removed or replaced by a system which the Administrator determines to be less environmentally beneficial".*

No newly constructed or reconstructed units are proposed in this project, nor is the unit being modified (as defined above). Since the permittee is only relocating this unit within this project with no proposed changes to its method of operation, no new requirements of this subpart will apply to this unit.

Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63. However, no subparts of 40 CFR Part 61 or 40 CFR Part 63 apply to this steam generating unit. Therefore, no additional discussion is required.

Rule 4101 Visible Emissions

Rule 4101 states that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). This unit is currently in compliance with the requirements of this rule and the modification proposed in this project is not expected to affect the amount of visible emissions from this unit. Therefore, continued compliance is expected.

Rule 4102 Nuisance

Rule 4102 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected.

California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 – *Risk Management Policy for Permitting New and Modified Sources* specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

A health risk analysis (HRA) is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (Appendix C), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.
The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
S-3755-11-9	0.013 per million	No

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices, or a cancer risk greater than the District's significance levels (i.e. acute and/or chronic indices greater than 1 and a cancer risk greater than 10 in a million). As outlined by the HRA Summary in Appendix C of this report, the emissions increases for this project was determined to be less than significant.

The following conditions will be included on the ATC's issued as a part of this project to assure continued compliance with the parameters used to perform the HRA:

- Steam generator shall operate only in Sections 7, 18, 19, and 20 T11N, R23W, Section 13 T11N, R24W, Section 24 T26S R20E, and Sections 14, 15 and SE 25 T31S, R22E. [District Rule 4102]

- The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]

- While operating at Section SE 25, T31S, R22E, this unit shall not operate within 700 feet of the nearest receptor. [District Rule 4102]

- When not operating at Section SE 25, T31S, R22E, this unit shall not operate within 2,500 feet of the nearest receptor. [District Rule 4102]

District Rule 4301 Fuel Burning Equipment

This rule specifies maximum emission rates in lb/hr for SO_2, NO_2, and combustion contaminants (defined as total PM in Rule 1020). This rule also limits combustion contaminants to ≤ 0.1 gr/scf. According to AP 42 (Table 1.4-2, footnote c), all PM emissions from natural gas combustion are less than 1 μm in diameter.

District Rule 4301 Limits			
Pollutant	**NO_2**	**Total PM**	**SO_2**
ATC S-3755-11-9 (lb/hr)	0.28	0.234	0.286
Rule Limit (lb/hr)	140	10	200

The above table indicates compliance with the maximum lb/hr emissions in this rule; therefore, continued compliance is expected.

District Rule 4304 - Equipment Tuning Procedure for Boilers, Steam Generators and Process Heaters

Pursuant to District Rules 4305, 4306 and 4320, this steam generator is not required to tune since it follows a District approved Alternate Monitoring scheme where the applicable emission limits are periodically monitored. Therefore, the unit is not subject to this rule.

District Rule 4305 Boilers, Steam Generators and Process Heaters – Phase 2
District Rule 4306 Boilers, Steam Generators and Process Heaters – Phase 3

This unit has a maximum heat input of 20 MMBtu/hr. The unit is currently in compliance with the rules and the project is not expected to affect the compliance status.

In addition, this unit is also subject to *District Rule 4320, Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5 MMBtu/hr.* Source testing, monitoring and recordkeeping requirements of Rule 4320 are equal to or more stringent than the requirements of these rules; therefore, continued compliance is expected.

District Rule 4320 Advance Emission Reduction Options for Boilers, Steam Generators and Process Heaters Greater Than 5 MMBtu/hr

This steam generator is subject to District Rule 4320 requirements pursuant to Section 2.0 of District Rule 4320.

Section 5.2, NO_X and CO Emissions Limits

Section 5.2 requires NO_X and carbon monoxide (CO) emissions to not exceed the limits specified in the following table. All ppmv emission limits specified in this section are referenced at dry stack gas conditions and 3.00 percent by volume stack gas oxygen.

This boiler fires on two different fuel types, fuel with more than 50% by volume PUC quality gas and fuel with less than 50% PUC quality gas. The unit is a steam generator operated at an oilfield; thus, the applicable emission limit category is Section 5.2, Table 1, Category B, from District Rule 4320.

Rule 4320 Emissions Limits		
Category	**Operated on gaseous fuel**	
	NO_X Limit	**CO Limit**
C-1. Units with a total rated heat input > 5.0 MMBtu/hr to ≤ 20.0 MMBtu/hr (Standard Schedule)	9 ppmv or 0.011 lb/MMBtu	400 ppmv
C-3. Units firing on less than 50% by volume, PUC quality gas (Standard Schedule)	12 ppmv or 0.014 lb/MMBtu	400 ppmv

The following conditions were taken from the current permit and will be included on the new ATC to assure compliance with the requirements of this section:

- Except when the fuel is less than 50% by volume PUC quality gas and during startup and shutdown, NOx emission rates shall not exceed 9 ppmv @ 3% O2. [District Rules 2201 and 4320]

- When the fuel is less than 50% by volume PUC quality gas, NOx emission rates shall not exceed 12 ppmv @ 3% O2. [District Rules 2201 and 4320]

- Emission rates shall not exceed any of the following: PM10: 0.0117 lb/MMBtu, VOC: 0.008 lb/MMBtu or CO: 154 ppmvd @ 3% O2. [District Rules 2201, 4306, and 4320]

Section 5.3, Annual Fee Calculation

Since these boilers will meet the applicable emissions limits of Section 5.2, the annual fee requirements are not applicable.

Section 5.4, Particulate Matter Control Requirements

Section 5.4.1 of this rule requires the operator to comply with one of the following requirements, on and after the applicable NO_X compliance deadline in Section 5.2 Table 1:

1. Fire the boiler exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases;

2. Limit fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet;

3. Install and properly operate an emission control system that reduces SO_2 emissions by at least 95% by weight; or limit exhaust SO_2 to less than or equal to 9 ppmv corrected to 3.0% O_2;

This steam generated is limited by permit condition to burn fuel with a sulfur content of no more than 5 grains/100 scf, which meets item 2 above. The following condition will assure continued compliance:

- Steam generator shall only be fired on produced (TEOR) gas, PUC quality natural gas, or gas containing less than 50% by volume PUC quality natural gas with a sulfur content not exceeding 5.0 gr S/100 scf or scrubbed to remove 95% sulfur. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 2201 and 4320]

Section 5.5, Low Use

This steam generator's annual heat input will exceed the 1.8 billion Btu heat input per calendar year criteria limit addressed by this section. Thus, the requirements of Section 5.5 are not applicable.

Section 5.6, Startup and Shutdown Provisions

Section 5.6 states that on and after the full compliance deadline in Section 5.0, the applicable emission limits of Sections 5.2 Table 1 and 5.5.2 shall not apply during start-up or shutdown provided an operator complies with the requirements specified in Sections 5.6.1 through 5.6.5. Sections 5.6.1 through 5.6.5 require the following:

1. The duration of each startup or shutdown must not exceed two hours per event, unless the APCO approves a larger allowable startup or shutdown duration.
2. The emission control system must be in operation and emission be minimized insofar as technologically feasible during startup and shutdown.

Seneca Resources currently operates this steam generator without specific time allowances for startup and shutdown periods as the burners stop and start quickly with good control of emissions during these periods. Therefore, the requirements of this section are not applicable and special conditions will not be included on the ATC/PTO.

Section 5.7, Monitoring Provisions

Section 5.7.1 requires that permit units subject to District Rule 4320, Section 5.2 emissions limits shall either install and maintain Continuous Emission Monitoring (CEM) equipment for NO_X, CO and O_2, or install and maintain APCO-approved alternate monitoring. For this steam generator, the facility has chosen to use the pre-approved alternate monitoring scheme of periodically measuring the NO_X, CO, and O_2 concentrations from the exhaust stack with a portable emissions analyzer. The following conditions will be included on the ATC's and PTO's to assure continued compliance:

- The permittee shall monitor and record the stack concentration of NO_X, CO, and O_2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within five days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320]

- If either the NO_X or CO concentrations corrected to 3% O_2, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320]

- All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320]

- The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320]

Section 5.7.6 outlines requirements for monitoring SO_X emissions. These monitoring requirements are only applicable to operators complying with Sections 5.4.1.1, 5.4.1.2, or 5.4.1.3. The operator complies with Section 5.4.1.2. The following condition was taken from the current permit and will be included on the ATC and PTO to assure continued compliance with the requirements of this section:

- Fuel H2S, total sulfur, and methane content of combusted gas shall be determined whenever there is a change in fuel type and semi-annually thereafter using the test methods (or other approved methods listed in this permit) H2S: ASTM D6228; total sulfur: ASTM D1072; ASTM D3246, or ASTM D6228; and methane content: ASTM D1945. [District Rule 4320]

Section 5.8, Compliance Determination

Section 5.8.1 requires that the operator of any unit shall have the option of complying with either the applicable heat input (lb/MMBtu), emission limits or the concentration (ppmv) emission limits specified in Section 5.2. The emission limits selected to demonstrate compliance shall be specified in the source test proposal pursuant to Rule 1081 (Source Sampling).

Section 5.8.2 requires that all emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0.

Section 5.8.4 requires that for emissions monitoring pursuant to Sections 5.7.1 and 6.3.1 using a portable NO_X analyzer as part of an APCO approved Alternate Emissions Monitoring System, emission readings shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15-consecutive-minute sample reading or by taking at least five (5) readings evenly spaced out over the 15-consecutive-minute period.

Section 5.8.5 requires that for emissions source testing performed pursuant to Section 6.3.1 for the purpose of determining compliance with an applicable standard or numerical limitation of this rule, the arithmetic average of three (3) 30-consecutive-minute test runs shall apply. If two (2) of three (3) runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit.

The following conditions were taken from the current permit and will be included on the new ATC to assure continued compliance:

- The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 & 4320]

- For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320]

Section 6.1, Recordkeeping

Section 6.1 requires that the records required by Sections 6.1.1 through 6.1.5 shall be maintained for five calendar years and shall be made available to the APCO upon request. Failure to maintain records or information contained in the records that demonstrate non-compliance with the applicable requirements of this rule shall constitute a violation of this rule.

The following conditions will be listed on each permit to ensure compliance:

- Permittee shall maintain records of the types (TEOR and/or PUC quality natural gas), fuel sulfur content and % volume of PUC quality natural gas, higher heating value, and quantities of fuel gas combusted each day. [District Rules 1070 and 2201]

- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, and 4320]

Section 6.2, Test Methods

Section 6.2 identifies the following test methods as District-approved source testing methods for the pollutants listed:

Pollutant	Units	Test Method Required
NO_X	ppmv	EPA Method 7E or ARB Method 100
NO_X	lb/MMBtu	EPA Method 19
CO	ppmv	EPA Method 10 or ARB Method 100
Stack Gas O_2	%	EPA Method 3 or 3A, or ARB Method 100
Stack Gas Velocities	ft/min	EPA Method 2 or 19
Stack Gas Moisture Content	%	EPA Method 4

The following permit conditions will be listed on each permit:

- Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]

- The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen - EPA Method 3 or 3Aor ARB Method 100, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 4305, 4306 and 4320]

- Fuel H2S, total sulfur, and methane content of combusted gas shall be determined whenever there is a change in fuel type and semi-annually thereafterusing the test methods (or other approved methods listed in this permit) H2S: ASTM D6228; total sulfur: ASTM D1072; ASTM D3246, or ASTM D6228; and methane content: ASTM D1945. [District Rule 4320, 6.2]

Section 6.3, Compliance Testing

Section 6.3.1 requires that this unit be tested to determine compliance with the applicable requirements of section 5.2 not less than once every 12 months. Upon demonstrating compliance on two consecutive compliance source tests, the source test may be deferred for up to thirty-six months.

The following conditions will be listed on the permit:

- Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 2201, 4305, 6.3.1, 4306, 6.3.1 and 4320]

- The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

Conclusion

Compliance with District Rule 4320 requirements is expected.

District Rule 4351 Boilers, Steam Generators and Process Heaters – Phase I

This rule applies to boilers, steam generators, and process heaters at NO_X Major Sources that are not located west of Interstate 5 in Fresno, Kings, or Kern counties. Based on information in the facility files, Seneca Resources is a Major Source for NO_X emissions and is located in Kern County. Therefore, the requirements of this rule are applicable to each of the boilers being modified within this project. Based on previous evaluations and projects, the emission limits, monitoring provisions, and testing requirements of this rule are satisfied when a unit is operated in compliance with Rule 4320. Since both of the boiler units in this project will be operating in compliance with Rule 4320, compliance with this rule is expected.

District Rule 4405 Oxides of Nitrogen Emissions from Existing Steam Generators Used in Thermally Enhanced Oil Recovery – Central and Western Kern County Fields

This rule limits NOx emissions from existing steam generators used in thermally enhanced oil recovery operations prior to August 22, 1986. The steam generators in this project are subject to a NOx limit well below the 0.14 lb/MMBTU limit allowed by this rule for natural gas-fired units. Therefore, continued compliance is expected.

District Rule 4406 Sulfur Compounds from Oil-Field Steam Generators – Kern County

This rule limits SOx emissions from existing steam generators used in oil field operations prior to September 12, 1979. Sulfur compound emissions (as S) from the steam generators in this project are limited to an average rate below the 0.11 lb/MMBTU limit for sulfur (as S) allowed by the rule. Continued compliance is expected.

District Rule 4801 Sulfur Compounds

Per Section 3.1, a person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 % by volume calculated as SO_2 on a dry basis averaged over 15 consecutive minutes:

The sulfur of the natural gas fuel is 1.0 gr/100 dscf.

The ratio of the volume of the SO_x exhaust to the entire exhaust for one MMBtu of fuel combusted is:

Volume of SO_x: $V = \frac{n \cdot R \cdot T}{P}$

Where:

- n = number of moles of SO_x produced per MMBtu of fuel.
- Weight of SO_x as SO_2 is 64 lb/(lb-mol)
- $n = \frac{0.0143\ lb}{MMBtu} \times \frac{1\ (lb-mol)}{64\ lb} = 0.000223\ (lb-mol)$
- $R = \frac{0.7302\ ft^3 \cdot atm}{(lb-mol)\,°R}$
- T = 500 °R
- P = 1 atm

Thus, volume of SO_X per MMBtu is:

$$V = \frac{n \cdot R \cdot T}{P}$$

$$V = \frac{0.000223\ (lb-mol) \cdot \frac{0.7302\ ft^3 \cdot atm}{(lb-mol)\,°R} \cdot 500\ °R}{1\ atm}$$

$$V = 0.08\ ft^3$$

Since the total volume of exhaust per MMBtu is 8,578 scf, the ratio of SO_X volume to exhaust volume is

$$= \frac{0.08}{8{,}578} = 0.0000093 = 9.3\ ppmv = 0.00093\%\ by\ volume$$

9.3 ppmv ≤ 2000 ppmv, therefore this steam generator is expected to comply with Rule 4801.

California Health & Safety Code 42301.6 (School Notice)

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

California Environmental Quality Act (CEQA)

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;

- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

The District performed an Engineering Evaluation (this document) for the proposed project and determined that all project specific emission unit(s) is exempt from Best Available Control Technology (BACT) requirements. Furthermore, the District has determined that potential emission increases would have a less than significant health impact on sensitive receptors.

Issuance of permits for emissions units not subject to BACT requirements and with health impact less than significant is a matter of ensuring conformity with applicable District rules and regulations and does not require discretionary judgment or deliberation. Thus, the District concludes that this permitting action constitutes a ministerial approval. Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful EPA COC Noticing period, issue ATC S-3755-11-9 subject to the permit conditions on the attached draft ATC in **Appendix D**.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-3755-11-9	3020-02-H	20 MMBtu/hr	$1,030

Appendixes

A: Current Permit to Operate S-3755-11-8
B: Quarterly Net Emissions Change Calculations
C: Health Risk Assessment (HRA) Summary
D: Draft ATC S-3755-11-9 and Emission Profiles

Appendix A

Current Permit to Operate S-3755-11-8

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-3755-11-8 **EXPIRATION DATE:** 02/29/2016

EQUIPMENT DESCRIPTION:
20 MMBTU/HR TEOR GAS AND NATURAL GAS-FIRED STEAM GENERATOR WITH NORTH AMERICAN MAGNA-FLAME LE MODEL 4211-21/X1288 LOW NOX BURNER

PERMIT UNIT REQUIREMENTS

1. Steam generator shall operate only in Sections 7, 18, 19, and 20 T11N, R23W, Section 13 T11N, R24W, Section 24 T26S R20E, Sections 14 and 15 T31S, R22E. [District Rule 4102] Federally Enforceable Through Title V Permit
2. Exhaust gas stack shall be equipped with adequate provisions facilitating the collection of gas samples consistent with EPA Test Methods. [District Rules 1081, 2201] Federally Enforceable Through Title V Permit
3. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
4. Unit shall not operate within 2,500 feet of the nearest receptor. [District Rule 4102]
5. Steam generator shall only be fired on produced (TEOR) gas, PUC quality natural gas, or gas containing less than 50% by volume PUC quality natural gas with a sulfur content not exceeding 5.0 gr S/100 scf or scrubbed to remove 95% sulfur. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 2201 and 4320] Federally Enforceable Through Title V Permit
6. Except when the fuel is less than 50% by volume PUC quality gas and during startup and shutdown, NOx emission rates shall not exceed 9 ppmv @ 3% O2. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
7. When the fuel is less than 50% by volume PUC quality gas, NOx emission rates shall not exceed 12 ppmv @ 3% O2. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
8. Emission rates shall not exceed any of the following: PM10: 0.0117 lb/MMBtu, VOC: 0.008 lb/MMBtu or CO: 154 ppmvd @ 3% O2. [District Rules 2201, 4306, and 4320] Federally Enforceable Through Title V Permit
9. The permittee shall monitor and record the stack concentration of NOX, CO, and O2 at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306 &4320] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

10. If either the NOX or CO concentrations corrected to 3% O2, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306 & 4320] Federally Enforceable Through Title V Permit
11. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306 & 4320] Federally Enforceable Through Title V Permit
12. The permittee shall maintain records of: (1) the date and time of NOX, CO, and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOX and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 & 4320] Federally Enforceable Through Title V Permit
13. The portable analyzer shall be calibrated prior to each use with a two-point calibration method (zero and span). Calibration shall be performed with certified calibration gases. [District Rules 4306 and 4320] Federally Enforceable Through Title V Permit
14. Source testing shall be by District witnessed, or authorized, sample collection by ARB certified testing laboratory. [District Rule 1081] Federally Enforceable Through Title V Permit
15. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
16. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 & 4320] Federally Enforceable Through Title V Permit
17. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306 & 4320] Federally Enforceable Through Title V Permit
18. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
19. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
20. Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 2201, 4305, 6.3.1, 4306, 6.3.1 and 4320] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

21. If permittee fails any compliance demonstration for NOx and CO emissions when testing not less than once every 36 months, source testing for NOx and CO emissions shall be conducted not less than once every 12 months. [District Rules 2520, 9.4.2 and 4305] Federally Enforceable Through Title V Permit

22. Fuel H2S, total sulfur, and methane content of combusted gas shall be determined whenever there is a change in fuel type and semi-annually thereafterusing the test methods (or other approved methods listed in this permit) H2S: ASTM D6228; total sulfur: ASTM D1072; ASTM D3246, or ASTM D6228; and methane content: ASTM D1945. [District Rule 4320, 6.2] Federally Enforceable Through Title V Permit

23. Permittee shall maintain records of the types (TEOR and/or PUC quality natural gas), fuel sulfur content and % volume of PUC quality natural gas, higher heating value, and quantities of fuel gas combusted each day. [District Rule 1070] Federally Enforceable Through Title V Permit

24. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen - EPA Method 3 or 3Aor ARB Method 100, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

25. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

Appendix B

Quarterly Net Emission Change (QNEC) Calculations

Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

QNEC = PE2 - PE1, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

Using the values in Sections VII.C.2 and VII.C.6 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows (sample calculation for NO_X shown below):

$PE2_{quarterly}$ = $PE2_{annual}$ ÷ 4 quarters/year
= 2,453 lb/year ÷ 4 qtr/year
= 613 lb PM_{10}/qtr

$PE1_{quarterly}$= $PE1_{annual}$ ÷ 4 quarters/year
= 2,453 lb/year ÷ 4 qtr/year
= 613 lb PM_{10}/qtr

Quarterly NEC [QNEC]			
	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO_X	613	613	0
SO_X	626	626	0
PM_{10}	513	513	0
CO	4,993	4,993	0
VOC	372	372	0

Appendix C

Health Risk Assessment (HRA) Summary

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	Rob Rinaldi – Permit Services
From:	Kyle Melching – Technical Services
Date:	January 8, 2015
Facility Name:	Seneca Resources
Location:	Heavy Oil Western
Application #(s):	S-3755-11-9
Project #:	S-1144435

A. RMR SUMMARY

RMR Summary			
Categories	**Steam Generator (Unit 11-9)**	**Project Totals**	**Facility Totals**
Prioritization Score	0.11	0.11	>1
Acute Hazard Index	0.00	0.00	0.05
Chronic Hazard Index	0.00	0.00	0.13
Maximum Individual Cancer Risk	1.30E-08	1.30E-08	8.42E-07
T-BACT Required?	**No**		
Special Permit Conditions?	**Yes**		

Proposed Permit Conditions

To ensure that human health risks will not exceed District allowable levels; the following permit conditions must be included for:

Unit # 11-9

1. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
2. While operating in SE Section 25/T31S/R22E, the unit (unit 11-9) may not operate within 700 feet of the nearest receptor.

B. RMR REPORT

I. Project Description

Technical Services received a request on January 2, 2015, to perform a Risk Management Review for a proposed modification to a various specified locations 20 MMBtu/hr natural gas steam generator. Currently, the unit has a special permit condition stating that it cannot

operate within 2,50 feet from the nearest receptor. For this project, there is no increase in emissions with the unit; however, the applicant is requesting authorization to operate this unit at a new location which reflects a receptor distance within 700 feet. Therefore, this units modification score will count towards the facility total and a special operating distance to the closest receptor will be implemented while operating in this specific Section/Township/Range.

II. Analysis

Toxic emissions for the Petroleum Steam Generator fueled by Natural Gas and Casing Vapor Recovery Gas were calculated using emission factors from *December 2009 Emission Estimation Protocol for Petroleum Refineries* by the American Petroleum Institute and Western States Petroleum Association. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the project was less than 1.0 (see RMR Summary Table); however, the facility's combined prioritization scores totaled to greater than one. Therefore, a refined Health Risk Assessment was required and performed for the project. AERMOD was used with source parameters outlined below and concatenated 5-year meteorological data from Fellows to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Chronic and Acute Hazard Indices and the Carcinogenic Risk.

The following parameters were used for the review:

Analysis Parameters Unit 11-9			
Source Type	Point	**Location Type**	Rural
Stack Height (m)	4.57	**Closest Receptor (m)**	213
Stack Diameter. (m)	1.49	**Type of Receptor**	Business
Stack Exit Velocity (m/s)	1.85	**Max Hours per Year**	8760
Stack Exit Temp. (°K)	389	**NG/CVRG Usage (mmscf/hr)**	0.020
		NG/CVRG Usage (mmscf/yr)	175.2

III. Conclusion

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is **1.30E-08**; which is less than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT).

To ensure that human health risks will not exceed District allowable levels; the permit conditions listed on page 1 of this report must be included for this proposed unit.

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

IV. Attachments

A. RMR request from the project engineer
B. Additional information from the applicant/project engineer
C. Stack Parameter Worksheet
D. Prioritization score w/ toxic emissions summary
E. HARP Risk Report
F. Facility Summary

Appendix D

Draft ATC S-3755-11-9 and Emissions Profile

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-3755-11-9 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: SENECA RESOURCES
MAILING ADDRESS: 4800 CORPORATE COURT
BAKERSFIELD, CA 93311

LOCATION: HEAVY OIL WESTERN

EQUIPMENT DESCRIPTION:
MODIFICATION OF TRANSPORTABLE 20 MMBTU/HR TEOR GAS AND NATURAL GAS-FIRED STEAM GENERATOR WITH NORTH AMERICAN MAGNA-FLAME LE MODEL 4211-21/X1288 LOW NOX BURNER: ADD SECTION SE 25, TOWNSHIP 31S AND RANGE 22E AS AN APPROVED LOCATION WHERE THIS UNIT CAN OPERATE

CONDITIONS

1. Steam generator shall operate only in Sections 7, 18, 19, and 20 T11N, R23W, Section 13 T11N, R24W, Section 24 T26S R20E, and Sections 14, 15 and SE 25 T31S, R22E. [District Rule 4102]
2. Exhaust gas stack shall be equipped with adequate provisions facilitating the collection of gas samples consistent with EPA Test Methods. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
3. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
4. When operating at Section SE 25, T31S, R22E, this unit shall not operate within 700 feet of the nearest receptor. [District Rule 4102]
5. When not operating at Section SE 25, T31S, R22E, this unit shall not operate within 2,500 feet of the nearest receptor. [District Rule 4102]
6. Steam generator shall only be fired on produced (TEOR) gas, PUC quality natural gas, or gas containing less than 50% by volume PUC quality natural gas with a sulfur content not exceeding 5.0 gr S/100 scf or scrubbed to remove 95% sulfur. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 2201 and 4320] 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

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Arnaud Marjollet, Director of Permit Services
S-3755-11-9 Mar 9 2015 8:16AM – BROWND Joint Inspection NOT Required

7. Except when the fuel is less than 50% by volume PUC quality gas and during startup and shutdown, NOx emission rates shall not exceed 9 ppmv @ 3% O2. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

8. When the fuel is less than 50% by volume PUC quality gas, NOx emission rates shall not exceed 12 ppmv @ 3% O2. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

9. Emission rates shall not exceed any of the following: PM10: 0.0117 lb/MMBtu, VOC: 0.008 lb/MMBtu or CO: 154 ppmvd @ 3% O2. [District Rules 2201, 4306, and 4320] Federally Enforceable Through Title V Permit

10. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

11. If either the NOx or CO concentrations corrected to 3% O2, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

12. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

13. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

14. The portable analyzer shall be calibrated prior to each use with a two-point calibration method (zero and span). Calibration shall be performed with certified calibration gases. [District Rules 4306 and 4320] Federally Enforceable Through Title V Permit

15. Source testing shall be by District witnessed, or authorized, sample collection by ARB certified testing laboratory. [District Rule 1081] Federally Enforceable Through Title V Permit

16. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

17. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

18. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

19. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

20. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

21. Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

22. Fuel H2S, total sulfur, and methane content of combusted gas shall be determined whenever there is a change in fuel type and semi-annually thereafter using the test methods (or other approved methods listed in this permit) H2S: ASTM D6228; total sulfur: ASTM D1072; ASTM D3246, or ASTM D6228; and methane content: ASTM D1945. [District Rule 4320] Federally Enforceable Through Title V Permit

23. Permittee shall maintain records of the types (TEOR and/or PUC quality natural gas), fuel sulfur content and % volume of PUC quality natural gas, higher heating value, and quantities of fuel gas combusted each day. [District Rule 1070] Federally Enforceable Through Title V Permit

24. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen - EPA Method 3 or 3Aor ARB Method 100, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

25. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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Application Emissions

Permit #: S-3755-11-9	**Last Updated**
Facility: SENECA RESOURCES	03/05/2015 BROWND

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	2453.0	2505.0	2050.0	19973.0	1489.0
Daily Emis. Limit (lb/Day)	6.7	6.9	5.6	54.6	4.1
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					