



San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT



JUL 06 2017

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

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # S-1114
Project # 1171563**

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. The project authorizes a heater and vessel.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authority to Construct with a Certificate of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. 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.

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: Tung Le, CARB (w/enclosure) via email
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) 557-8400 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

San Joaquin Valley Air Pollution Control District Authority to Construct

10 MMBtu/hr. Heater Treater and Wemco

Facility Name: Seneca Resources
Mailing Address: 4800 Corporate Court
Bakersfield, CA 93311
Contact Person: Tim Alburger
Telephone: (661) 399-4270 #3544
Fax: (661) 399-7706
Application #(s): S-1114-78-9, 140-0, and -141-0
Project #: 1171563
Deemed Complete: April 26, 2017

Date: June 12, 2017
Engineer: Richard Edgehill
Lead Engineer: Steve Leonard

I. PROPOSAL

Seneca Resources (Seneca) has requested an Authority to Construct (ATC) for a 10 MM Btu/hr heater treater (ATC S-1114-140-0) and Wemco-type depurator (ATC S-1114-141-0) tied to existing vapor recovery system listed on tank S-1114-78 (ATC S-1114-78-9).

Note that the fugitive emissions components associated with the new Wemco and heater treater will process gas expected to contain less than 10% VOCs by wt. Therefore, according to District policy SSP 2015, fugitive emissions are not assessed.

The project is a Federal Major Modification. BACT, offsets and public notice are required.

Current PTO S-1114-78-7 is included in **Attachment I**.

Seneca facility S-1114 has a Title V permit. The project is a Federal Major Modification and therefore it is classified as a Title V Significant Modification pursuant to Rule 2520, Section 3.20, 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 must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC(s) issued with this project.

II. APPLICABLE RULES

District Rule 2201 New and Modified Stationary Source Review Rule (2/18/16)
District Rule 2410 Prevention of Significant Deterioration (6/16/11)
District Rule 2520 Federally Mandated Operating Permits (6/21/01)
District Rule 4001 New Source Performance Standards (4/14/99)
District Rule 4101 Visible Emissions (2/17/05)
District Rule 4102 Nuisance (12/17/92)

District Rule 4201 Particulate Matter Concentration (12/17/92)
District Rule 4301 Fuel Burning Equipment (12/17/92)
District Rule 4305 Boilers, Steam Generators and Process Heaters – Phase 2 (8/21/03)
District Rule 4306 Boilers, Steam Generators and Process Heaters – Phase 3 (10/16/08)
District Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr. (10/16/08)
District Rule 4623 Storage of Organic Liquid (5/19/2005)
District 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

The heater treater and Wemco will be located within Seneca's heavy oil western stationary source (facilities S-1114, S-3007, S-3755, and S-4159) (North Midway Sunset) Section 15, T31S, R22E. The equipment is not located 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

The new heater treater will be used for oil water separation at North Midway Sunset.

In order to comply with District Rule 4320 NOx requirements, the applicant is proposing emissions limits of 9 ppmv NOx @ 3% O₂ and 50 ppmv @3% O₂ CO. The unit is equipped with two separate 5.0 MMBtu/hr. burners. Natural gas with a sulfur content not exceeding 1.0 gr S/100 scf is proposed as fuel.

The new Wemco will be served by an existing vapor control system S-1114-78 with a vapor control efficiency of at least 95% by permit condition.

V. EQUIPMENT LISTING

Pre-Project Equipment Description:

PTO S-1114-78-7: 5,000 BBL FIXED ROOF FREE WATER KNOCKOUT TANK T-1 W/VAPOR CONTROL SYSTEM INCLUDING HEAT EXCHANGER, LIQUID KNOCKOUT VESSELS, & VAPOR COMPRESSOR WITH PIPING TO STEAM GENERATOR S-1114-74, HEATER TREATERS S-1114-83 & 84, AND SERVING TANKS S-1114-78,79,80,81,82,85,86,87,104,105 AND 106 (MIDWAY SUNSET FIELD 15A TANK BATTERY)

Proposed Modification:

ATC S-1114-78-9: MODIFICATION OF 5,000 BBL FIXED ROOF FREE WATER KNOCKOUT TANK T-1 W/VAPOR CONTROL SYSTEM INCLUDING

HEAT EXCHANGER, LIQUID KNOCKOUT VESSELS, & VAPOR COMPRESSOR WITH PIPING TO STEAM GENERATOR S-1114-74, HEATER TREATERS S-1114-83 & 84, AND SERVING TANKS S-1114-78,79,80,81,82,85,86,87,104,105 AND 106 (MIDWAY SUNSET FIELD 15A TANK BATTERY): CONNECT HEATER TREATER S-1114-140 AND WEMCO S-1114-141 TO VAPOR CONTROL SYSTEM

Post Project Equipment Description:

- S-1114-78-7: 5,000 BBL FIXED ROOF FREE WATER KNOCKOUT TANK T-1 W/VAPOR CONTROL SYSTEM INCLUDING HEAT EXCHANGER, LIQUID KNOCKOUT VESSELS, & VAPOR COMPRESSOR WITH PIPING TO STEAM GENERATOR S-1114-74, HEATER TREATERS S-1114-83, 84 & 140 AND SERVING TANKS S-1114-78,79,80,81,82,85,86,87,104,105 AND 106, AND WEMCO S-1114-141 (MIDWAY SUNSET FIELD 15A TANK BATTERY)
- S-1114-140-0: 10 MMBTU/HR NATURAL GAS-FIRED HEATER TREATER WITH TWO SEPARATE 5.0 MMBTU/HR LO NO_x BURNERS
- S-1114-141-0: WEMCO UNIT WITH VAPOR RECOVERY SYSTEM LISTED ON PERMIT UNIT S-1114-78

VI. EMISSION CONTROL TECHNOLOGY EVALUATION

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.

Manufacturer's information on the low NO_x burner is provided in **Attachment II**.

Sulfur Control

The ATC requires that gas combusted contain no more than 1 gr S/100 scf.

VII. GENERAL CALCULATIONS

A. Assumptions

The maximum operating schedule is 24 hours per day.

Annual pre-project and post-project potential to emit are calculated based on 8760 hours of operation per year.

Modifying the tank vapor control system to connect a new tank to the system is not a NSR modification; therefore, tank S-1114-78 is not being modified and does not require calculations. PE2 will be calculated for inclusion in PAS. There is no change in emissions with connection of the heater treater and Wemco tank of the vapor control system.

Process gas expected to contain less than 10% VOCs by wt. Therefore, according to District policy SSP 2015, fugitive emissions are not assessed.

Component counts and fugitive emissions for Heater Treater (-140) and Wemco (-141) for HRA

Component Type	Emissions Factor lb/day-component*	number	Lb/day	Lb/yr
Valve	0.2381	11	2.62	956
Others	0.4656	0	0	0
Connectors	0.01058	0	0	0
Flanges	0.02604	24	0.625	228
Total			3.2	1,184

*EPA Protocol Equipment Leak Emissions Factors, Table 2-4, EPA-453/R-95-017, November 1995, TABLE 2-4. OIL AND GAS PRODUCTION OPERATIONS AVERAGE EMISSION FACTORS (lb/day/source)

B. Emission Factors

Post-Project Emission Factors (EF2)

For this unit, post-project emission factors are listed in the table below.

Pollutant	Post-Project Emission Factors (EF2)			Source
	MMscf**	MMBtu	ppmvd	
NO _x	11 lb-NO _x /MMscf**	0.011 lb-NO _x /MMBtu	9 ppmvd NO _x (@ 3%O ₂)	Proposed
SO _x	2.85 lb-SO _x /MMscf**	0.00285 lb-SO _x /MMBtu		District Policy APR 1720
PM10	7.0 lb-PM10/MMscf**	0.007 lb-PM10/MMBtu		Proposed*
CO	37 lb-CO/MMscf**	0.037 lb-CO/MMBtu	50 ppmvd CO (@ 3%O ₂)	"
VOC	2.0 lb-VOC/MMscf**	0.002 lb-VOC/MMBtu		"

*District email to applicant 4/20/17
** assumed 1000 Btu/scf heating value

C. Calculations

1. Pre-Project Potential to Emit (PE1)

S-1114-140 and '-141

Since these are new emissions units, PE1 = 0 for all pollutants.

2. Post-Project Potential to Emit (PE2)

The PE2 for each pollutant is calculated with the following equation:

- $PE2 = EF \text{ (lb/MMBtu)} \times \text{Heat Input (MMBtu/hr.)} \times \text{Op. Sched. (hr./day or hr./year)}$

S-1114-78-9

VOCs: 0 lb/day, 0 lb/yr (< 10% VOCs by wt in vapor)

S-1114-140-0

Pollutant	Daily PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE2 (lb/day)
NO _x *	0.011	10	24	2.6
SO _x	0.00285	10	24	0.7
PM ₁₀	0.0070	10	24	1.7
CO	0.037	10	24	8.9
VOC	0.0020	10	24	0.5

Pollutant	Annual PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE2 (lb/year)
NO _x	0.011	10	8,760	964
SO _x	0.00285	10	8,760	250
PM ₁₀	0.0070	10	8,760	613
CO	0.037	10	8,760	3,241
VOC	0.0020	10	8,760	175

Fugitive emissions:

VOCs: 0 lb/day, 0 lb/yr (< 10% VOCs by wt in vapor)

S-1114-141-0

VOCs: 0 lb/day, 0 lb/yr (< 10% VOCs by wt in vapor)

Emissions Profiles are included in **Attachment III**.

3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site.

SSPE1 (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE Calculator	94,069	382,659	121,782	121,782	170,095
S-1114-125-1	4,617	2122	5659	13,775	3999
S-1114-133-0	472	124	300	1587	86
S-1114-134-0	1,156	305	736	3889	210
S-1114-136-0	4,542	2122	5659	13,775	3999
ATCs S-3007-21 thru '23	0	0	0	0	312
SSPE1*	108,856	387,332	134,136	154,808	178,701

*includes ATCs with significant emissions increases, does not include ERCs

There are no outstanding ATCs for S-3755, S-4159, The facility has no CO ERCs.

4. Post-Project Stationary Source Potential to Emit (SSPE2)

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

SSPE2 (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE1	108,856	387,332	134,136	154,808	178,701
S-1114-140-0	964	250	613	3,241	175
S-1114-141-0	0	0	0	0	0
SSPE2	109,820	387,582	134,749	158,049	178,876

5. Major Source Determination

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in

40 CFR 51.165

Rule 2201 Major Source Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
Facility emissions pre-project	108,856	387,332	134,136	154,808	178,701
Facility emissions – post project	109,820	387,582	134,749	158,049	178,876
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	yes	yes	no	no	yes

As seen in the table above, the facility is an existing Major Source for NO_x, CO, and VOC and is not becoming a Major Source for SO_x and PM₁₀ as a result of this project.

Rule 2410 Major Source Determination:

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). Therefore the following PSD Major Source thresholds are applicable.

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)(iii). Therefore the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀
Estimated Facility PE before Project Increase	54	89	194	77	67	67*
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	N	N	N	N	N	N

As shown above, the facility is not an existing PSD major source for any regulated NSR pollutant expected to be emitted at this facility.

6. Baseline Emissions (BE)

The BE calculation (in lbs/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for:

- Any unit located at a non-Major Source,

- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

S-1114-140 & '-141:

Since these are new emissions units, BE = PE1 = 0 for all pollutants.

7. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

Since this facility is not a major source for SO_x or PM₁₀, this project does not constitute an SB 288 major modification for these air contaminants.

Since this facility is a major source for NO_x, SO_x, and VOCs, the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO _x	964	50,000	No
SO _x	250	80,000	No
VOC	0*	50,000	No

*increases of less than 0.5 lb/day (annual emissions/ 365) round to zero for NSR purposes.

Since none of the SB 288 Major Modification Thresholds are surpassed with this project, this project does not constitute an SB 288 Major Modification.

8. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

For new emissions units, the increase in emissions is equal to the PE2 for each new unit included in this project.

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions Increases (lb/yr)	Thresholds (lb/yr)	Federal Major Modification?
NO _x	964*	0	Yes
VOC	0 (0.5 lb/day ~ 0)**	0	No
PM ₁₀	613	30,000	No
PM _{2.5}	613	20,000	No
SO _x	250	80,000	No

*If there is any emission increases in NO_x or VOC, this project is a Federal Major Modification and no further analysis is required.

**increases of less than 0.5 lb/day (annual emissions/365) round to zero for NSR purposes.

Since there is an increase in NO_x, this project constitutes a Federal Major Modification. Federal Offset quantities are calculated below.

Federal Offset Quantities:

The Federal offset quantity is only calculated only for the pollutants for which the project is a Federal Major Modification. The Federal offset quantity is the sum of the annual emission changes for all new and modified emission units in a project calculated as the potential to emit after the modification (PE2) minus the actual emissions (AE) during the baseline period for each emission unit times the applicable federal offset ratio. There are no special calculations performed for units covered by an SLC.

NOx		Federal Offset Ratio	1.5
Permit No.	Actual Emissions (lb/year)	Potential Emissions (lb/year)	Emissions Change (lb/yr)
S-1114-140	0	964	964
Net Emission Change (lb/year):			964
Federal Offset Quantity: (NEC * 1.5)			1,446

9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b) (23) definition of significant)

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

- Sulfuric acid mist
- Hydrogen sulfide (H₂S)
- Total reduced sulfur (including H₂S)
- Reduced sulfur compounds

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)						
	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀
Total PE from New and Modified Units	0.5	0	0.125	1.6	0.3	0.3
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.

10. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. The permit units are new and therefore QNEC = PE/4.

VIII. COMPLIANCE

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

- Any new emissions unit with a potential to emit exceeding two pounds per day,

- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

a. New emissions units – PE > 2 lb/day

As seen in Section VII.C.2 above, the applicant is proposing to install a new heater treater with a PE greater than 2 lb/day for NO_x and CO. BACT is triggered for NO_x only (for the heater treater) since the PE is greater than 2 lb/day. However, BACT is not triggered for CO since the SSPE2 for CO is not greater than 200,000 lb/year, as demonstrated in Section VII.C.5 above.

b. Relocation of emissions units – PE > 2 lb/day

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

c. Modification of emissions units – AIPE > 2 lb/day

As discussed in Section I above, there are no modified emissions units associated with this project. Therefore BACT is not triggered.

d. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project does constitute an Federal Major Modification for NO_x emissions. Therefore BACT is triggered for NO_x for all emissions units in the project for which there is an emission increase (heater treater).

2. BACT Guideline

Please note that BACT Guidelines 1.8.4 Heater Treater < 20 MMBtu/hr., natural gas-fired and 1.8.5 [Process Heater (non-refinery, < or = 20 MMBtu/hr.)] have been rescinded and are replaced by the District Rule 4320 requirements for NO_x.

3. Top-Down BACT Analysis

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

Pursuant to the attached Top-Down BACT Analysis (see **Attachment IV**), BACT has been satisfied with the following:

NO_x: 9 ppmvd @ 3% O₂

B. Offsets

1. Offset Applicability

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE2	109,820	387,582	134,749	158,049	178,876
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	Yes	Yes	Yes	No	Yes

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for NO_x only. Therefore offset calculations will be required for this project.

The quantity of offsets in pounds per year for NO_x is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = (Σ[PE2 – BE] + ICCE) x DOR, for all new or modified emissions units in the project,

Where,

PE2 = Post Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

otherwise,

$$BE = HAE$$

The facility is proposing to install a new emissions unit heater treater; therefore BE = 0. Also, there is only one emissions unit associated with this project and there are no increases in cargo carrier emissions; therefore offsets can be determined as follows:

$$\text{Offsets Required (lb/year)} = ([PE2 - BE] + ICCE) \times DOR$$

The project is a Federal Major Modification and therefore the correct offset ratio (DOR) for NO_x and VOCs is 1.5:1.

NO_x

Assuming an offset ratio of 1.5:1, the amount of NO_x ERCs that need to be withdrawn is:

$$\begin{aligned} \text{Offsets Required (lb/year)} &= ([964 - 0] + 0) \times 1.5 \\ &= 964 \times 1.5 \\ &= 1,446 \text{ lb NO}_x/\text{year} \end{aligned}$$

Calculating the appropriate quarterly emissions to be offset is as follows:

$$\begin{aligned} \text{Quarterly offsets required (lb/qtr)} &= (1446 \text{ lb NO}_x/\text{year}) \div (4 \text{ quarters/year}) \\ &= 361.5 \text{ lb/qtr} \end{aligned}$$

As shown in the calculation above, the quarterly amount of offsets required for this project, when evenly distributed to each quarter, results in fractional pounds of offsets being required each quarter. Since offsets are required to be withdrawn as whole pounds, the quarterly amounts of offsets need to be adjusted to ensure the quarterly values sum to the total annual amount of offsets required.

To adjust the quarterly amount of offsets required, the fractional amount of offsets required in each quarter will be summed and redistributed to each quarter based on the number of days in each quarter. The redistribution is based on the Quarter 1 having the fewest days and the Quarters 3 and 4 having the most days. The redistribution method is summarized in the following table:

Redistribution of Required Quarterly Offsets				
(where X is the annual amount of offsets, and $X \div 4 = Y.z$)				
Value of z	Quarter 1	Quarter 2	Quarter 3	Quarter 4
.0	Y	Y	Y	Y
.25	Y	Y	Y	Y+1
.5	Y	Y	Y+1	Y+1
.75	Y	Y+1	Y+1	Y+1

Therefore, the appropriate quarterly emissions to be offset are as follows:

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>	<u>Total Annual</u>
361	361	362	362	1,446

The applicant has stated that the facility plans to use ERC certificate S-4821-2 to offset the increases in NO_x emissions associated with this project. The above certificate has available quarterly NO_x credits as follows:

	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
ERC #S-4821-2	735	735	734	735

As seen above, the facility has sufficient credits to fully offset the quarterly NO_x emissions increases associated with this project.

SO_x

Assuming an offset ratio of 1.5:1 (site of reduction > 15 miles from S-1114), the amount of SO_x ERCs that need to be withdrawn is:

$$\begin{aligned}
 \text{Offsets Required (lb/year)} &= ([250 - 0] + 0) \times 1.5 \\
 &= 250 \times 1.5 \\
 &= 375 \text{ lb SO}_x\text{/year}
 \end{aligned}$$

Calculating the appropriate quarterly emissions to be offset is as follows:

$$\begin{aligned}
 \text{Quarterly offsets required (lb/qtr)} &= (375 \text{ lb SO}_x\text{/year}) \div (4 \text{ quarters/year}) \\
 &= 93.75 \text{ lb/qtr}
 \end{aligned}$$

Therefore the appropriate quarterly emissions to be offset are as follows:

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>	<u>Total Annual</u>
93	94	94	94	375

The applicant has stated that the facility plans to use ERC certificate S-4824-5 to offset the increases in SO_x emissions associated with this project. The above certificate has available quarterly SO_x credits as follows:

	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
ERC #S-4824-5	194	194	194	193

As seen above, the facility has sufficient credits to fully offset the quarterly SO_x emissions increases associated with this project.

PM₁₀

Assuming an offset ratio of 1.5:1 (site of reduction > 15 miles from S-1114), the amount of SO_x ERCs that need to be withdrawn is:

$$\begin{aligned} \text{Offsets Required (lb/year)} &= ([613 - 0] + 0) \times 1.5 \\ &= 613 \times 1.5 \\ &= 920 \text{ lb PM}_{10}/\text{year} \end{aligned}$$

Calculating the appropriate quarterly emissions to be offset is as follows:

$$\begin{aligned} \text{Quarterly offsets required (lb/qtr)} &= (920 \text{ lb PM}_{10}/\text{year}) \div (4 \text{ quarters/year}) \\ &= 230 \text{ lb/qtr} \end{aligned}$$

Therefore the appropriate quarterly emissions to be offset are as follows:

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>	<u>Total Annual</u>
230	230	230	230	920

The applicant has stated that the facility plans to use ERC certificate N-1409-4 to offset the increases in PM₁₀ emissions associated with this project. The above certificate has available quarterly PM₁₀ credits as follows:

	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
ERC #N-1409-4*	0	0	468	1403

*Rule 2201 Section 4.13.7 AER for PM that occurred from October through March, inclusive, may be used to offset increases in PM during any period of the year.

As seen above, the facility has sufficient credits to fully offset the quarterly PM₁₀ emissions increases associated with this project.

VOC

There are no VOC emissions expected from the new Wemco. The heater treater VOC emissions are 0.5 lb/day. Pursuant to District Policy APR 1130

“a total project annual emission increase ($\Sigma [PE_2 - PE_1]$ for all units in the project) that averages less than or equal to 0.5 lb/day is rounded to zero (0) lb/day, only for the purposes of determining whether New and Modified Source Review (NSR) rule requirements are triggered.”

Therefore, offsets are not required for VOCs.

Proposed Rule 2201 (offset) Conditions:

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender NO_x emission reduction credits for the following quantity of emissions: 1st quarter - 361 lb, 2nd quarter - 361 lb, 3rd quarter - 362 lb, and fourth quarter - 362 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]

- ERC Certificate Number S-4821-2 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]
- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender SO_x emission reduction credits for the following quantity of emissions: 1st quarter - 93 lb, 2nd quarter - 94 lb, 3rd quarter - 94 lb, and fourth quarter - 94 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
- ERC Certificate Number S-4824-5 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]
- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender PM₁₀ emission reduction credits for the following quantity of emissions: 1st quarter - 230 lb, 2nd quarter - 230 lb, 3rd quarter - 230 lb, and fourth quarter - 230 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
- ERC Certificate Number S-1409-4 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed,
- d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant, and/or
- e. Any project which results in a Title V significant permit modification

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

As demonstrated in Sections VII.C.7 and VII.C.8, this project is an SB 288 or Federal Major Modification. Therefore, public noticing for SB 288 or Federal Major Modification purposes is required.

b. PE > 100 lb/day

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. As seen in Section VII.C.2 above, this project does not include a new emissions unit which has daily emissions greater than 100 lb/day for any pollutant, therefore public noticing for PE > 100 lb/day purposes is not required.

c. Offset Threshold

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	108,856	109,820	20,000 lb/year	No
SO _x	387,332	387,582	54,750 lb/year	No
PM ₁₀	134,136	134,749	29,200 lb/year	No
CO	154,808	158,049	200,000 lb/year	No
VOC	178,701	178,876	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	109,820	108,856	964	20,000 lb/year	No
SO _x	387,582	387,332	250	20,000 lb/year	No
PM ₁₀	134,749	134,136	613	20,000 lb/year	No
CO	158,049	154,808	3,241	20,000 lb/year	No
VOC	178,876	178,701	175	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

e. Title V Significant Permit Modification

As shown in the Discussion of Rule 2520 below, this project constitutes a Title V Significant Modification. Therefore, public noticing for Title V Significant Permit Modification is required for this project.

2. Public Notice Action

As discussed above, public noticing is required for this project which is a Title V Significant Modification. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

Proposed Rule 2201 (DEL) Conditions:

S-1114-140 (Heater Treater)

Emissions from the natural gas-fired unit shall not exceed any of the following limits: 9 ppmvd NO_x @ 3% O₂ or 0.011 lb-NO_x/MMBtu, 0.00285 lb SO_x/MMBtu, 0.007 lb-PM₁₀/MMBtu, 50 ppmvd CO @ 3% O₂ or 0.037 lb-CO/MMBtu, or 0.002 lb-VOC/MMBtu. [District Rules 2201, 4201, 4301, 4305, 4306, 4320, and 4801]

The unit shall only be fired on gas with a maximum sulfur content of 1.0 gr S/100scf. [District Rules 2201 and 4320] Y

S-1114-141 (Wemco)

The VOC content of the gas shall not exceed 10% by weight. [District Rule 2201] Y

Operator shall conduct quarterly gas sampling for gas exiting the separator pressure vessel to qualify for exemption from fugitive component counts for components handling fluids with VOC content equal to or less than 10% by weight. If gas samples are equal to or less than 10% VOC by weight for 8 consecutive quarterly samplings, sampling frequency shall only be required annually. [District Rule 2201] Y

E. Compliance Assurance

1. Source Testing

Pursuant to District Policy APR 1705, source testing is not required to demonstrate compliance with Rule 2201.

2. Monitoring

S-1114-140 & 141

The VOC content of the gas shall not exceed 10% by weight. [District Rule 2201] Y

Operator shall conduct quarterly gas sampling for gas exiting the separator pressure vessel to qualify for exemption from fugitive component counts for components handling fluids with VOC content equal to or less than 10% by weight. If gas samples are equal to or less than 10% VOC by weight for 8 consecutive quarterly samplings, sampling frequency shall only be required annually. [District Rule 2201] Y

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following condition(s) are listed on the permit to operate:

The permittee shall keep accurate records of the date VOC sampling occurred, who performed the sampling and testing, and the results. [District Rule 2520] Y

All monitoring data, support information and records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 1070, 4305, 4306, and 4320] Y

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District's Technical Services Division conducted the required analysis. Refer to **Attachment V** of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_x, CO, and SO_x. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_x, CO, or SO_x.

The proposed location is in a non-attainment area for the state's PM₁₀ as well as federal and state PM_{2.5} thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM₁₀ and PM_{2.5}.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Federal Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Section VIII above, this facility is a new major source and this project does constitute a Federal Major Modification, therefore this requirement is applicable. Seneca's compliance certification is included in **Attachment VI**.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install a heater treater and Wemco. Since the project will provide new equipment to be used at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

Rule 2410 Prevention of Significant Deterioration

As shown in Section VII.C.9 above, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. Section 3.29 defines a significant permit modification as a "permit amendment that does not qualify as a minor permit modification or administrative amendment."

The project is Federal Major Modification and therefore is also a Title V Significant Modification. As discussed above, the facility has applied for a Certificate of Conformity (COC); therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Included in **Attachment VI** is

Seneca's Title V Compliance Certification form. Continued compliance with this rule is expected.

Rule 4001 New Source Performance Standards (NSPS)

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60. 40 CFR Part 60, Subpart Dc applies to Small Industrial-Commercial-Industrial Process heaters between 10 MMBtu/hr. and 100 MMBtu/hr.

This heater treater has a rating of 10 MMBtu/hr. and is fired on natural gas. Subpart Dc has no standards for gas-fired steam generators. Therefore, testing and monitoring requirements of subpart Dc do not apply.

Subpart Dc, subpart 60.48c requires the owner or operator of each affected facility to submit notification of the date of construction or reconstruction, anticipated startup, actual startup, as provided by Subpart A §60.7 of this part. Notification shall include

- (1) The design heat input capacity of the facility and identification of the fuels to be combusted:

The designed heat input capacity and the identified fuels will be listed on the equipment description. No other permit conditions are required.

- (2) If applicable, a copy of any federally enforceable requirements that limit the annual capacity factor for any fuel mixture of fuel under §60.42c or §60.43c.

The above requirement is not applicable since the unit is not subject to §60.42c or §60.43c.

- (3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

The facility has not proposed an annual capacity factor and one will not be imposed on the facility.

- (4) Notification if an emerging technology will be used for controlling SO₂ emissions. The Administrator will examine the description of the control and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of §60.42c (a) or (b)1, unless the unit determination is made by the Administrator.

Section 60.48c(g) states that the owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day.

Since the unit has been evaluated assuming that it will consume the maximum amount of fuel allowed by the unit each day, the facility will not be required to record the daily fuel consumption.

Section 60.48c(i) states that all records required under this section shall be maintained by the owner operator of the affected facility for a period of two years following the date of such record. The ATCs require that records be kept for 5 years.

The following condition is included on the S-1114-140 ATC:

Permittee shall comply with all applicable testing, recordkeeping, and reporting requirements specified in Rule 4001 - New Source Performance Standards, including but not limited to Subparts A and Ja. [District Rule 4001] Y

Rule 4101 Visible Emissions

Per Section 5.0, 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). As the steam generator is fired solely on natural gas, visible emissions are not expected to exceed Ringelmann 1 or 20% opacity. The following condition will be listed on the steam generator permit to ensure compliance:

No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

Rule 4102 Nuisance

Section 4.0 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. This facility wide permit for BPC contains the following condition:

No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

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.

An 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 (**Attachment V**), 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-1114-140-0	4.81 E -10	No

Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

The following special condition is required:

The exhaust stacks 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] N

Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

F-Factor for NG: 8,578 dscf/MMBtu at 60 °F

PM10 Emission Factor: 0.0076 lb-PM10/MMBtu

Percentage of PM as PM10 in Exhaust: 100%

Exhaust Oxygen (O₂) Concentration: 3%

Excess Air Correction to F Factor = $20.9/(20.9 - 3) = 1.17$

$$GL = \left(\frac{0.0076 \text{ lb-PM}}{\text{MMBtu}} \right) * \left(\frac{7,000 \text{ grain}}{\text{lb-PM}} \right) / \left(\frac{8,578 \text{ ft}^3}{\text{MMBtu}} * 1.17 \right)$$

$$GL = 0.005 \text{ grain/dscf} < 0.1 \text{ grain/dscf}$$

Therefore, compliance with District Rule 4201 requirements is expected. Additionally, particulate matter emissions from the steam generator is already limited by Rule 2201 to a value less than or equal to the rule limit of 0.1 grain per cubic foot of gas at dry standard conditions. Therefore, the following condition, previously discussed, will ensure compliance with this rule: