

August 19, 2021

Steve Nixon  
Crimson Resource Management  
11200 River Run Blvd. Suite #200  
Bakersfield, CA 93311

**Re: Notice of Preliminary Decision - Authority to Construct**  
**Facility Number: S-2018**  
**Project Number: S-1203974**

Dear Mr. Nixon:

Enclosed for your review and comment is the District's analysis of Crimson Resource Management's application for an Authority to Construct for the installation of a 85 MMBtu/hr. natural gas fired steam generator, within your Kern County Heavy Oil Western Stationary Source.

The notice of preliminary decision for this project has been posted on the District's website ([www.valleyair.org](http://www.valleyair.org)). After addressing all comments made during the 30-day public notice and 45-day EPA notice comment periods, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. William Jones of Permit Services at (661) 392-5610.

Sincerely,



Brian Clements  
Director of Permit Services

BC:wej

Enclosures

cc: Courtney Graham, CARB (w/ enclosure) via email  
cc: Laura Yannayon, EPA (w/ enclosure) via email

**Samir Sheikh**  
Executive Director/Air Pollution Control Officer

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California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

### **III. Project Location**

The equipment will be located at the 25A Thermal lease, within Section 25, Township 31S, Range 22E. 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**

In TEOR operations, steam generators are used to produce steam which is injected into the production zone to reduce the viscosity of the crude oil and pressurize the oil-bearing strata, thereby facilitating oil flow to producing wells. Produced fluids are then piped to surface facilities for processing and temporary storage.

Production from wells initially enters a gas/liquid separator. Liquid from the gas liquid separator enters wash tanks for separation into oil, gas and water. Separated oil is stored in stock tanks prior to custody transfer.

### **V. Equipment Listing**

S-2018-100-0: 85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED PCL STEAM GENERATOR MODEL 85M WITH A NORTH AMERICAN LE-85 ULTA LOW NOX BURNER AND FLUE GAS RECIRCULATION (STEAM GENERATOR #4)

### **VI. Emission Control Technology Evaluation**

Emissions from gas-fired steam generators include NO<sub>x</sub>, CO, VOC, PM<sub>10</sub>, and SO<sub>x</sub>.

Low-NO<sub>x</sub> burners reduce NO<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub>. 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.

The use of flue gas re-circulation (FGR) can reduce nitrogen oxides (NO<sub>x</sub>) emissions by 60 - 70%. In an FGR system, a portion of the flue gas is re-circulated back to the inlet air. As flue gas is composed mainly of nitrogen and the products of combustion, it is much lower in oxygen than the inlet air and contains virtually no combustible hydrocarbons to burn. Thus, flue gas is practically inert. The addition of an inert mass of gas to the combustion reaction serves to absorb heat without producing heat, thereby lowering the flame temperature. Since thermal NO<sub>x</sub> is

formed by high flame temperatures, the lower flame temperatures produced by FGR serve to reduce thermal NO<sub>x</sub>.

## VII. General Calculations

### A. Assumptions

- To streamline emission calculations, PM<sub>2.5</sub> emissions are assumed to be equal to PM<sub>10</sub> emissions. Only if needed to determine if a project is a Federal major modification for PM<sub>2.5</sub> will specific PM<sub>2.5</sub> emission calculations be performed.
- The maximum operating schedule is 24 hours per day (per applicant)
- Annual emissions are based on steady state emissions for 8,760 hr. /yr.
- EPA F-factor for natural gas is 8,578 dscf/MMBtu (40 CFR 60, Appendix B)
- Natural/Field Gas Heating Value: 1,000 Btu/scf (District Practice)
- The unit has a maximum heat input rating of 85 MMBtu/hr.

### B. Emission Factors

Pollutant	Emission Factors		Source
NO <sub>x</sub>	0.0062 lb.-NO <sub>x</sub> /MMBtu	5 ppmvd NO <sub>x</sub> (@ 3%O <sub>2</sub> )	Manufacture guarantee
SO <sub>x</sub>	0.00285 lb. SO <sub>2</sub> /MMBtu	1.0 gr S/100 scf	Proposed and APR 1720
PM <sub>10</sub>	*0.0035 lb-PM <sub>10</sub> /MMBtu		FYI-328
CO	0.0185 lb.-CO/MMBtu	25 ppmv CO @3% O <sub>2</sub>	BACT
VOC	0.0055 lb.-VOC/MMBtu	13 ppmv VOC @3% O <sub>2</sub>	Proposed & AP-42 (07/98) Table 1.4-2

\*The District has determined that steam generators fired solely on PUC-quality natural gas have PM<sub>10</sub> emissions no greater than 0.003 lb-PM<sub>10</sub>/ MMBtu. The applicant has conservatively proposed a limit of 0.0035 lb-PM<sub>10</sub>/ MMBtu.

### C. Calculations

#### 1. Pre-Project Potential to Emit (PE1)

Since this is a new emissions unit, PE1 = 0 for all pollutants.

#### 2. Post-Project Potential to Emit (PE2)

The potential to emit for the steam generator is calculated as follows, and summarized in the table below:

#### Daily PE Calculations:

Daily PE = Emissions factor (lb./MMBtu) \* Heat Rating (MMBtu/hr.) \* Hours of Operation (hr./day)



<b>Post Project Potential to Emit (PE2)</b>						
Pollutant	Emission Factor (lb./MMBtu)	Heat Rating (MMBtu/hr.)	Operation Schedule		Emissions Rate	
			(hr./day)	(hr./yr.)	(lb./day)	(lb./yr.)
NO <sub>x</sub>	0.0062	85	24	8,760	12.6	4,617
SO <sub>x</sub>	0.00285	85	24	8,760	5.8	2,122
PM <sub>10</sub>	0.0035	85	24	8,760	7.1	2,606
CO	0.0185	85	24	8,760	37.7	13,775
VOC	0.0055	85	24	8,760	11.2	4,095

**SUMMARY**

<b>PE2</b>		
Pollutant	Daily Emissions (lb./day)	Annual Emissions (lb./year)
NO <sub>x</sub>	12.6	4,617
SO <sub>x</sub>	5.8	2,122
PM <sub>10</sub>	7.1	2,606
CO	37.7	13,775
VOC	11.2	4,095

**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.

The SSPE1 is calculated in [Appendix D](#) and presented in the following table.

<b>SSPE1 (lb./year)</b>					
	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>CO</b>	<b>VOC</b>
SSPE1	121,456	47,991	65,179	268,001	91,735

**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.

Since facility emissions are already above the Offset and Major Source Thresholds for VOC, NO<sub>x</sub> and CO emissions, SSPE2 calculations are not necessary.

## 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), pursuant to the Clean Air Act, Title 3, Section 302, US Codes 7602(j) and (z)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 70.2

<b>Rule 2201 Major Source Determination (lb./year)</b>						
	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>CO</b>	<b>VOC</b>
SSPE1	116,839	45,869	62,945	62,945	254,226	87,640
SSPE2	121,456	47,991	65,179	65,179	268,001	91,735
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	Yes	No	No	No	Yes	Yes

This source is an existing Major Source for VOC, NO<sub>x</sub> and CO emissions and will remain a Major Source for VOC, NO<sub>x</sub> and CO.

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

<b>PSD Major Source Determination (tons/year)</b>						
	<b>NO<sub>2</sub></b>	<b>VOC</b>	<b>SO<sub>2</sub></b>	<b>CO</b>	<b>PM</b>	<b>PM<sub>10</sub></b>
Estimated Facility PE before Project Increase	58.42	43.82	22.9	127.11	31.47	31.47
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source?	No	No	No	No	No	No

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 lb. /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.

Since this is a new emissions unit, 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 a major source for NO<sub>x</sub>, VOC the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if further SB 288 Major Modification calculation is required.

<b>SB 288 Major Modification Thresholds</b>			
<b>Pollutant</b>	<b>Project PE2 (lb./year)</b>	<b>Threshold (lb./year)</b>	<b>SB 288 Major Modification Calculation Required?</b>
NO <sub>x</sub>	4,616.5	50,000	No
SO <sub>x</sub>	2,122.1	80,000	No
PM <sub>10</sub>	2,233.8	30,000	No
VOC	4,095.3	50,000	No

Since none of the SB 288 Major Modification Thresholds are surpassed with this project, this project does not constitute an SB 288 Major Modification and no further discussion is required.

## 8. Federal Major Modification / New Major Source

### 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.

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. In step 1, emission decreases can not cancel out the increases. Step 2 allows consideration of the project’s net emissions increase as described in 40 CFR 51.165 and the Federal Clean Air Act Section 182 (e), as applicable.

#### Step 1

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

Emission Increase = PE2

In conclusion, the project’s combined total emission increases are calculated and summarized in the following table and are compared to the Federal Major Modification Thresholds in the following table.

<b>Federal Major Modification Thresholds for Emission Increases</b>			
<b>Pollutant</b>	<b>Total Emissions Increases (lb./yr.)</b>	<b>Thresholds (lb./yr.)</b>	<b>Federal Major Modification?</b>
NO <sub>x</sub> *	4,617	0	Yes
VOC*	4,095	0	Yes
PM <sub>10</sub>	2,234	30,000	No
PM <sub>2.5</sub>	2,234	20,000	No
SO <sub>x</sub>	2,122	80,000	No

\*If there is any emission increases in NO<sub>x</sub> or VOC, this project is a Federal Major Modification and no further analysis is required.

Since there is an increase in NO<sub>x</sub> and VOC emissions, this project constitutes a Federal Major Modification. Consequently, as discussed below in the offset section of this evaluation, pursuant to Section 7.4.2.1 of District Rule 2201, NO<sub>x</sub> and VOC Emission Reduction Credits (ERCs) used to satisfy the offset quantity required under District Rule 2201 must surplus at the time of use (ATC issuance).

Separately, Federal Offset quantities are calculated below.

### Federal Offset Quantity Calculation

The Federal offset quantity (FOQ) is only calculated for the pollutants for which a project is a Federal Major Modification or a New Major Source as determined above.

Pursuant to 40 CFR 51.165(a)(3)(ii)(J), 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) for each emission unit times the applicable federal offset ratio.

$$FOQ = \sum(PE2 - AE) \times \text{Federal offset ratio}$$

Please note that, as described in 40 CFR 51.165(a)(1)(xii), actual emissions (AE), as of a particular date, shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a consecutive 24-month period which precedes the particular date and which is representative of normal source operation. The reviewing authority shall allow the use of a different time period upon a determination that it is more representative of normal source operation.

#### Actual Emissions

Since this is a new unit, AE = 0

Therefore

$$FOQ = PE2 \times \text{Federal offset ratio}$$

#### Federal Offset Ratio

According the CAA 182(e), the federal offset ratio for VOC and NOx is 1.5 to 1 (due to extreme ozone non-attainment). Otherwise, the federal offset ratio for PM2.5, PM10, and SOx is 1.0 to 1.

#### Federal Offset Quantities (FOQ)

NOx		Federal Offset Ratio	1.5
Permit No.	Actual Emissions (lb./year)	Potential Emissions (lb./year)	Emissions Change (lb./yr.)
S-2018-100-0	0	4,617	4,617
$\sum(PE2 - AE)$ (lb./year):			4,617
Federal Offset Quantity (lb./year): $\sum(PE2 - AE) \times 1.5$			6,925.5
Validated Federal Offset Quantity (tons/year): $\sum(PE2 - AE) \times 1.5 \div 2,000$			3.47

VOC		Federal Offset Ratio	1.5
Permit No.	Actual Emissions (lb./year)	Potential Emissions (lb./year)	Emissions Change (lb./yr.)
S-2018-100-0	0	4,095	4,095
$\sum(PE2 - AE)$ (lb./year):			<b>4,095</b>
Federal Offset Quantity (lb./year): $\sum(PE2 - AE) \times 1.5$			<b>6,142.5</b>
Validated Federal Offset Quantity (tons/year): $\sum(PE2 - AE) \times 1.5 \div 2,000$			<b>3.07</b>

### 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
- Hydrogen sulfide (H2S)
- Total reduced sulfur (including H2S)

#### 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 <sub>2</sub>	VOC	SO <sub>2</sub>	CO	PM	PM <sub>10</sub>
Total PE from New and Modified Units	2.3	2.0	1.1	6.9	1.1	1.1
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	No	No	No	No	No	No

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. Detailed QNEC calculations are included in **Appendix E**.

## **VIII. Compliance Determination**

### **Rule 2201 New and Modified Stationary Source Review Rule**

#### **A. Best Available Control Technology (BACT)**

##### **1. BACT Applicability**

Pursuant to District Rule 2201, Section 4.1, 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\*:

- a. 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 Adjusted Increase in Permitted Emissions (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 two new steam generator with a PE greater than 2 lb./day for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC. BACT is triggered for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, and VOC since the PEs are greater than 2 lb./day. BACT is triggered for CO since the SSPE2 for CO is 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 SB 288 and/or Federal Major Modification for VOC and NO<sub>x</sub> emissions. Therefore BACT is triggered for NO<sub>x</sub> for all emissions units in the project for which there is an emission increase.

**2. BACT Guideline**

BACT Guideline 1.2.1, applies to the oilfield steam generators greater  $\geq$  20 MMBtu/hr. [Oilfield Steam Generator ( $>$  or  $=$ 20 MMBtu/hr.)] (See **Appendix B**)

**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 **Appendix B**), BACT has been satisfied with the following:

NO <sub>x</sub> :	5 ppmvd @ 3% O <sub>2</sub>
SO <sub>x</sub> and PM <sub>10</sub> :	gaseous fuel treated such that the sulfur content does not exceed 1 gr of sulfur compounds (as S) per 100 dscf
CO:	25 ppmvd or less @ 3% O <sub>2</sub>
VOC:	Gaseous fuel

**B. Offsets**

**1. Offset Applicability**

Pursuant to District Rule 2201, Section 4.5, 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 <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE2	121,456	47,991	65,179	268,001	91,735
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	Yes	No	Yes	Yes	Yes

## 2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for NO<sub>x</sub>, PM<sub>10</sub>, CO and VOC. Therefore offset calculations will be required for this project.

The quantity of offsets in pounds per year 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) =  $(\Sigma[PE2 - BE] + ICCE) \times DOR$ , 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; 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:

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

**NO<sub>x</sub>:**

PE2 (NO<sub>x</sub>) = 4,617 lb./year  
 BE (NO<sub>x</sub>) = 0 lb./year  
 ICCE = 0 lb./year

The project is a Federal Major Modification and therefore the correct offset ratio for NO<sub>x</sub> and VOCs is 1.5:1.

Using an offset ratio of 1.5:1, the amount of NO<sub>x</sub> ERCs that need to be withdrawn is:

$$\begin{aligned} \text{Offsets Required (lb./year)} &= ([4,617 - 0] + 0) \times 1.5 \\ &= 4,617 \times 1.5 \\ &= 6,924.8 \text{ lb. NO}_x/\text{year} \\ &= 6,925 \text{ lb. NO}_x/\text{year} \end{aligned}$$

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

$$\begin{aligned} \text{Quarterly offsets required (lb./qtr.)} &= (6,925 \text{ lb. NO}_x/\text{year}) \div (4 \text{ quarters/year}) \\ &= 1,731.25 \text{ lb./qtr.} \end{aligned}$$

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:

<b>Redistribution of Required Quarterly Offsets</b>				
<i>(where X is the annual amount of offsets, and X ÷ 4 = Y.z)</i>				
<b>Value of z</b>	<b>Quarter 1</b>	<b>Quarter 2</b>	<b>Quarter 3</b>	<b>Quarter 4</b>
.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>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>	<u>Total Annual</u>
1,731	1,731	1,731	1,732	6,925

**District and Federal Offset Quantities**

As discussed above, District offsets are triggered and required for NOx under NSR. In addition, as demonstrated above, this project does trigger Federal Major Modification / New Major Source requirements for NOx emissions, and federal offset quantities are required for this project for NOx. Pursuant to Section 7.4.2.1 of District Rule 2201, emission reduction credits used to satisfy federal offset quantities for NOx must be creditable and surplus at the time of use (ATC issuance).

**Surplus at the Time Of Use Emission Reduction Credits**

The applicant has stated that the facility plans to use ERC certificate ERC #S-3388-2 to satisfy the federal offset quantities for NOx required for this project. Pursuant to the ERC surplus analysis in **Appendix G**, the District has verified that the credits from the ERC certificate(s) provided by the applicant are sufficient to satisfy the federal offset quantities for NOx required for this project.

The applicant has stated that the facility plans to use ERC certificates S-3388-2 to offset the increases in NOx emissions associated with this project. The above certificate has available quarterly NOx credits as follows:

	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
ERC #S-3388-2	4,704	3,393	3,449	2,696

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

**Proposed Rule 2201 (offset) Conditions:**

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender NOx emission reduction credits for the following quantity of emissions: 1st quarter - 1,731 lb., 2nd quarter - 1,731 lb., 3rd quarter - 1,731 lb., and 4th quarter - 1,732 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201]
- ERC Certificate Number S-3388-2 (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]

**PM<sub>10</sub>:**

As discussed above, District offsets are triggered and required for PM10 under NSR.

PE2 (PM<sub>10</sub>) = 2,606 lb./year  
 BE (PM<sub>10</sub>) = 0 lb./year  
 ICCE = 0 lb./year

The ERC(s) submitted for this project were generated within 15 miles of the new or modified emissions unit's Stationary Source, therefore the correct offset ratio for PM<sub>10</sub> is 1.3:1.

Assuming an offset ratio of 1.3:1, the amount of PM<sub>10</sub> ERCs that need to be withdrawn is:

$$\begin{aligned} \text{Offsets Required (lb./year)} &= ([2,606 - 0] + 0) \times 1.3 \\ &= 2,606 \times 1.3 \\ &= 3,387.9 \text{ lb. PM}_{10}/\text{year} \\ &= 3,388 \text{ lb. PM}_{10}/\text{year} \end{aligned}$$

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

$$\begin{aligned} \text{Quarterly offsets required (lb./qtr.)} &= (3,388 \text{ lb. PM}_{10}/\text{year}) \div (4 \text{ quarters/year}) \\ &= 847.0 \text{ lb./qtr.} \end{aligned}$$

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:

<b>Redistribution of Required Quarterly Offsets</b> (where X is the annual amount of offsets, and $X \div 4 = Y.z$ )				
<b>Value of z</b>	<b>Quarter 1</b>	<b>Quarter 2</b>	<b>Quarter 3</b>	<b>Quarter 4</b>
.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>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>	<u>Total Annual</u>
847	847	847	847	3,388

The applicant has stated that the facility plans to use ERC certificates S-4774-4, S-4878-4, and S-4959-4 to offset the increases in PM<sub>10</sub> emissions associated with this project. The above certificate has available quarterly PM<sub>10</sub> credits as follows:

	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
ERC #S-3392-4	1,271	1,214	1,219	1,224

As seen above, the facility has sufficient credits to fully offset the quarterly PM<sub>10</sub> emissions increases associated with this project.

**Proposed Rule 2201 (offset) Conditions:**

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender PM<sub>10</sub> emission reduction credits for the following quantity of emissions: 1st quarter – 847 lb., 2nd quarter – 847 lb., 3rd quarter – 847 lb., and 4th quarter – 847 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201]
- ERC Certificate Number S-3392-4 (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]

**CO:**

Pursuant to section 4.6.1 of Rule 2201, increases in CO in attainment areas are exempt from offsetting if the applicant demonstrates to the satisfaction of the APCO, that the Ambient Air Quality Standards are not violated in the areas to be affected and such emissions will be consistent with Reasonable Further Progress and will not cause or contribute to a violation of Ambient Air Quality Standards. As shown below in section VII.F, Ambient Air Quality Standards are not violated; therefore, offsets are not required for CO.

**VOC:**

PE1 (VOC) = 0  
PE2 (VOC) = 4,095 lb./year  
ICCE = 0 lb./year

The project is a Federal Major Modification and therefore the correct offset ratio for VOC is 1.5:1.

$$\begin{aligned} \text{Offsets Required (lb./year)} &= ([4,095 - 0] + 0) \times 1.5 \\ &= 4,095 \times 1.5 \\ &= 6,143 \text{ lb. VOC /year} \end{aligned}$$

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

$$\begin{aligned} \text{Quarterly offsets required (lb./qtr.)} &= (6,143 \text{ lb. VOC /year}) \div (4 \text{ quarters/year}) \\ &= 1,535.75 \text{ lb./qtr.} \end{aligned}$$

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:

<b>Redistribution of Required Quarterly Offsets</b> (where X is the annual amount of offsets, and $X \div 4 = Y.z$ )				
<b>Value of z</b>	<b>Quarter 1</b>	<b>Quarter 2</b>	<b>Quarter 3</b>	<b>Quarter 4</b>
.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>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>	<u>Total Annual</u>
1,535	1,536	1,536	1,536	6,143

**District and Federal Offset Quantities**

As discussed above, District offsets are triggered and required for NOx under NSR. In addition, as demonstrated above, this project does trigger Federal Major Modification requirements for VOC emissions, and federal offset quantities are required for this project for VOC. Pursuant to Section 7.4.2.1 of District Rule 2201, emission reduction credits used to satisfy federal offset quantities for VOC must be creditable and surplus at the time of use (ATC issuance).

**Surplus at the Time Of Use Emission Reduction Credits**

The applicant has stated that the facility plans to use ERC certificate ERC #S-3387-1 to satisfy the federal offset quantities for NOx required for this project. Pursuant to the ERC surplus analysis in **Appendix G** the District has verified that the credits from the ERC certificate(s) provided by the applicant are sufficient to satisfy the federal offset quantities for VOC required for this project.

The applicant has stated that the facility plans to use ERC certificate ERC #S-3387-1, offset the increases in VOC emissions associated with this project. The above certificate has available quarterly VOC credits as follows:

	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
ERC #S-3387-1	23,009	20,107	19,072	13,925

As seen above, the facility has sufficient credits to fully offset the quarterly NO<sub>x</sub> emissions increases associated with this project.

**Proposed Rule 2201 (offset) Conditions:**

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 1,535 lb., 2nd quarter - 1,536 lb., 3rd quarter - 1,536 lb., and 4th quarter - 1,536 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201]
- ERC Certificate Number S-3387-1 (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]

**3. ERC Withdrawal Calculations**

The applicant must identify the ERC Certificate(s) to be used to offset the increase of VOC, NO<sub>x</sub>, SO<sub>x</sub> and PM<sub>10</sub> emissions for the project. As indicated in previous section, the applicant is proposing to use ERC certificates to mitigate the increases of VOC, NO<sub>x</sub>, SO<sub>x</sub> and PM<sub>10</sub> emissions associated with this project. See **Appendix F** for detailed ERC Withdrawal Calculations.

**C. Public Notification**

**1. Applicability**

Pursuant to District Rule 2201, Section 5.4, 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**

The PE2 for this new unit is compared to the daily PE Public Notice thresholds in the following table:

<b>PE &gt; 100 lb./day Public Notice Thresholds</b>			
<b>Pollutant</b>	<b>PE2 (lb./day)</b>	<b>Public Notice Threshold</b>	<b>Public Notice Triggered?</b>
NO <sub>x</sub>	12.6	100 lb./day	No
SO <sub>x</sub>	5.8	100 lb./day	No
PM <sub>10</sub>	7.1	100 lb./day	No
CO	37.7	100 lb./day	No
VOC	11.2	100 lb./day	No

Therefore, public noticing for PE > 100 lb. /day purposes is not required.

**c. Offset Threshold**

Public notification is required if the pre-project Stationary Source Potential to Emit (SSPE1) is increased to a level exceeding the offset threshold levels. The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

<b>Offset Thresholds</b>				
<b>Pollutant</b>	<b>SSPE1 (lb./year)</b>	<b>SSPE2 (lb./year)</b>	<b>Offset Threshold</b>	<b>Public Notice Required?</b>
NO <sub>x</sub>	116,839	121,456.00	20,000 lb./year	No
SO <sub>x</sub>	45,869	47,991	54,750 lb./year	No
PM <sub>10</sub>	62,945	65,179.00	29,200 lb./year	No
CO	254,226	268,001.00	200,000 lb./year	No
VOC	87,640	91,735.00	20,000 lb./year	No

As demonstrated 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.

<b>SSIPE Public Notice Thresholds</b>					
<b>Pollutant</b>	<b>SSPE2 (lb./year)</b>	<b>SSPE1 (lb./year)</b>	<b>SSIPE (lb./year)</b>	<b>SSIPE Public Notice Threshold</b>	<b>Public Notice Required?</b>
NO <sub>x</sub>	121,456.00	116,839	4,617.00	20,000 lb./year	No
SO <sub>x</sub>	47,991	45,869	2,122.00	20,000 lb./year	No
PM <sub>10</sub>	65,179.00	62,945	2,234.00	20,000 lb./year	No
CO	268,001.00	254,226	13,775.00	20,000 lb./year	No
VOC	91,735.00	87,640	4,095.00	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**

Since this facility does not have a Title V operating permit, this change is not a Title V significant Modification, and therefore public noticing is not required.

**2. Public Notice Action**

As discussed above, public noticing is required for this project for Federal Major Modification purposes, and Significant Permit Modification purposes. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be electronically published on the District’s website 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:**

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

- Except during startup and shutdown, emissions shall not exceed any of the following limits: NO<sub>x</sub> (as NO<sub>x</sub>): 5 ppmvd @ 3% O<sub>2</sub> or 0.0062 lb. /MMBtu; SO<sub>x</sub>: 0.00285 lb. /MMBtu; PM<sub>10</sub>: 0.0035 lb. /MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb.-CO/MMBtu; or VOC: 0.0055 lb./MMBtu. [District Rules 2201 and 4320]

## **E. Compliance Assurance**

### **1. Source Testing**

This unit is subject to District Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*. Source testing requirements, in accordance with District Rule 4320, will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

### **2. Monitoring**

As required by District Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*, this unit is subject to monitoring requirements. Monitoring requirements, in accordance with District Rule 4320, will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

### **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 following permit condition will be listed on the permit as follows:

- Permittee shall maintain daily records of the type and quantity of fuel combusted by the steam generator. [District Rule 2201 and 40 CFR 60.48c (g)]
- 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, 4320, and 40 CFR 60.48c (i)]

## **F. Ambient Air Quality Analysis (AAQA)**

Section 4.14 of District Rule 2201 requires that an AAQA 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 **Appendix C** of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO<sub>x</sub>, CO, and SO<sub>x</sub>. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO<sub>x</sub>, CO, or SO<sub>x</sub>.

The proposed location is in a non-attainment area for the state's PM<sub>10</sub> as well as federal and state PM<sub>2.5</sub> thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM<sub>10</sub> and PM<sub>2.5</sub>.

### **G. Alternate Siting Analysis**

The current project occurs at an existing facility. The applicant proposes to install a steam generator.

Since the project will provide steam generator 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**

Pursuant to their current operating permit, this facility is an existing major source; however, the facility has not received their Title V permit. An application to comply with Rule 2520 - *Federally Mandated Operating Permits* has already been submitted to the District. Therefore, no action is required at this time.

### **Rule 4001 New Source Performance Standards (NSPS)**

#### **40 CFR Part 60 Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units**

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 Steam Generators between 10 MMBtu/hr. and 100 MMBtu/hr. (post-6/9/89 construction, modification or, reconstruction). Subpart Dc has standards for SO<sub>x</sub> and PM<sub>10</sub>. The 85 MMBtu/hr steam generators are subject to Subpart Dc requirements.

#### **60.42c – Standards for Sulfur Dioxide**

Since coal is not combusted by the steam generators in this project, the requirements of this section are not applicable.

#### **60.43c – Standards for Particulate Matter**

The steam generators do not fired on coal, combust mixtures of coal with other fuels, combust wood, combust mixtures of wood with other fuels, or oil; therefore, it will not be subject to the requirements of this section.

#### **60.44c – Compliance and Performance Tests Methods and Procedures for Sulfur Dioxide.**

Since the steam generators in this project are not subject to the sulfur dioxide requirements of this subpart, no testing to show compliance is required. Therefore, the requirements of this section are not applicable to the steam generators in this project.

#### **60.45c – Compliance and Performance Test Methods and Procedures for Particulate Matter**

Since the steam generators in this project are not subject to the particulate matter requirements of this subpart, no testing to show compliance is required. Therefore, the requirements of this section are not applicable to the steam generator in this project.

#### **60.46c – Emission Monitoring for Sulfur Dioxide**

Since the steam generators in this project is not subject to the sulfur dioxide requirements of this subpart, no monitoring is required. Therefore, the requirements of this section are not applicable to the steam generators in this project.

#### **60.47c – Emission Monitoring for Particulate Matter**

Since the steam generators in this project is not subject to the particulate matter requirements of this subpart, no monitoring is required. Therefore, the requirements of this section are not applicable to the steam generators in this project.

#### **60.48c – Reporting and Recordingkeeping Requirements**

Section 60.48c (a) states that the owner or operator of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by §60.7 of this part. This notification shall include:

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

*The design heat input capacity and type of fuel combusted at the facility will be listed on the unit's equipment description. No conditions are required to show compliance with this requirement.*

- (2) If applicable, a copy of any Federally enforceable requirement that limits the annual capacity factor for any fuel mixture of fuels under §60.42c or §40.43c.

*This requirement is not applicable since the unit is not subject to §60.42c or §40.43c.*

- (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; therefore one will not be required.*

- (4) Notification if an emerging technology will be used for controlling SO<sub>2</sub> emissions. The Administrator will examine the description of the control device 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 and until this determination is made by the Administrator. *This requirement is not applicable since the unit will not be equipped with an emerging technology used to control SO<sub>2</sub> emissions.*

District Rule 4001, §3.0 defines the Administrator as the APCO of the District. The following condition ensures compliance:

- Permittee shall submit notification to the District of the date of construction, anticipated startup, and actual startup. Notifications shall be postmarked no later than 30 days after construction and 15 days after actual startup. The notifications shall include the design heat input and identification of fuels for this permit unit. [40 CFR 60.48c (a)]

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. The following conditions will be added to the permit to ensure compliance with this section.

- A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted in the unit shall be installed, utilized and maintained. [District Rule 2201 and 40 CFR 60.48c (g)]
- Permittee shall maintain daily records of the type and quantity of fuel combusted by the steam generator. [District Rule 2201 and 40 CFR 60.48c (g)]

Section 60.48c (i) states that all records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record. District Rule 4320 requires that records be kept for five years. Compliance is ensured with the following condition:

- *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, 4320, and 40 CFR 60.48c (i)]*

Therefore, compliance with the requirements of this rule is expected.

**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). As the steam generators are fired solely on natural gas, visible emissions are not expected to exceed Ringelmann 1 or 20% opacity. Also, based on past inspections of the facility 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.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification of an existing source shall not result in an increase in cancer risk greater than the District’s significance level (20 in a million) and shall not result in acute and/or chronic risk indices greater than 1.

An HRA is not required for a project with a total facility prioritization score of less than or equal to one. According to the Technical Services Memo for this project, the total facility prioritization score including this project was less than or equal to one.

The resulting prioritization score for this project is shown below.

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
100-0	0.02	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	No	No
<b>Project Totals</b>	0.02	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>		
<b>Facility Totals</b>	<1	0.00	0.00	0.00E+00		

Notes:

1. The project passed with a prioritization score less than 1; therefore, no further analysis was required.

In accordance with District policy APR 1905, no further analysis is required to determine the impact from this project and compliance with the District’s Risk Management Policy is expected.

Compliance with District Rule 4102 requirements is expected.

See **Appendix C: Health Risk Assessment Summary**

**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  
 PM<sub>10</sub> Emission Factor: 0.005 lb-PM<sub>10</sub>/MMBtu  
 Percentage of PM as PM<sub>10</sub> in Exhaust: 100%  
 Exhaust Oxygen (O<sub>2</sub>) Concentration: 3%

$$\text{Excess Air Correction to F Factor} = \frac{20.9}{(20.9 - 3)} = 1.17$$

$$GL = \left( \frac{0.0035 \text{ lb-PM}}{\text{MMBtu}} \times \frac{7,000 \text{ grain}}{\text{lb-PM}} \right) / \left( \frac{8,578 \text{ ft}^3}{\text{MMBtu}} \times 1.17 \right)$$

$$GL = 0.002 \text{ grain/dscf} < 0.1 \text{ grain/dscf}$$

Therefore, compliance with the requirements of this rule is expected.

**Rule 4305 Boilers, Steam Generators and Process Heaters – Phase 2**

Pursuant to Rule 4305, Section 2.0, the proposed new unit will be subject to Rule 4305. Also, the proposed new unit will also be subject to Rule 4306. Since emissions limits of Rule 4306 and all other requirements are equivalent to or more stringent than Rule 4305 requirements, compliance with Rule 4320 requirements will satisfy requirements of Rule 4305.

**Rule 4306 Boilers, Steam Generators and Process Heaters – Phase 3**

Pursuant to Rule 4306, Section 2.0, the proposed unit will be subject to Rule 4306. Also, the proposed unit will also be subject to Rule 4320. Since emissions limits of Rule 4320 and all other requirements are equivalent to or more stringent than Rule 4306 requirements, compliance with Rule 4320 requirements will satisfy requirements of Rule 4306.

**Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr**

This rule limits NO<sub>x</sub>, CO, SO<sub>2</sub> and PM<sub>10</sub> emissions from boilers, steam generators and process heaters rated greater than 5 MMBtu/hr. This rule also provides a compliance option of payment of fees in proportion to the actual amount of NO<sub>x</sub> emitted over the previous year.

The steam generators are rated at greater than 5 MMBtu/hr heat input. Therefore, this rule applies.

## Section 5.1 NOx Emission Limits

Section 5.1 states that an operator of a unit(s) subject to this rule shall comply with all applicable requirements of the rule and one of the following, on a unit-by-unit basis:

- Operate the unit to comply with the emission limits specified in Sections 5.2 and 5.4; or
- Pay an annual emissions fee to the District as specified in Section 5.3 and comply with the control requirements specified in Section 5.4; or
- Comply with the applicable Low-use Unit requirements of Section 5.5.

Section 5.2.1 states that on and after the indicated Compliance Deadline units shall not be operated in a manner which exceeds the applicable NO<sub>x</sub> limit specified in Table 1 of this rule.

The units have a maximum heat input of 85.0 MMBtu/hr.; therefore, the applicable emission limit category Section 5.2, Table 1, Category C.2 from District Rule 4320 applies as follows:

C. Oilfield Steam Generators			
Category	NO <sub>x</sub> Limit	Authority to Construct	Compliance Deadline
2. Units with a total rated heat input >20.0 MMBtu/hr.	a) Standard Schedule 7 ppmv or 0.008 lb./MMBtu; or	July 1, 2009	July 1, 2010
	b) Staged Enhanced Schedule Initial Limit 9 ppmv or 0.011 lb./MMBtu; and	January 1, 2013	July 1, 2012
	Final Limit 5 ppmv or 0.0062 lb./MMBtu	January 1, 2013	January 1, 2014

Crimson has proposed to comply with Rule 4320 by limiting the burners to 5 ppm-NO<sub>x</sub> @ 3% O<sub>2</sub> (or 0.0062 lb.-NO<sub>x</sub>/MMBtu). The following condition will be listed on the ATC to ensure compliance:

- Emission rates shall not exceed any of the following: NO<sub>x</sub> (as NO<sub>x</sub>): 5 ppmvd @ 3% O<sub>2</sub> or 0.0062 lb./MMBtu; SO<sub>x</sub>: 0.00285 lb./MMBtu; PM<sub>10</sub>: 0.0035 lb./MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb.-CO/MMBtu; or VOC: 0.0055 lb./MMBtu. [District Rules 2201 and 4320]

## Section 5.4 Particulate Matter Control Requirements

5.4.1 To limit particulate matter emissions, an operator shall comply with one of the following requirements:

- 5.4.1.1 On and after the applicable NO<sub>x</sub> Compliance Deadline specified in Section 5.2 Table 1, operators shall fire units exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases;



- 5.4.1.2 On and after the applicable NO<sub>x</sub> Compliance Deadline specified in Section 5.2 Table 1, operators shall limit fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet; or
- 5.4.1.3 On and after the applicable NO<sub>x</sub> Compliance Deadline specified in Section 5.2 Table 1, operators shall install and properly operate an emission control system that reduces SO<sub>2</sub> emissions by at least 95% by weight; or limit exhaust SO<sub>2</sub> to less than or equal to 9 ppmv corrected to 3.0% O<sub>2</sub>.
- 5.4.1.4 Notwithstanding the compliance deadlines indicated in Sections 5.4.1.1 through 5.4.1.3, refinery units, which require modification of refinery equipment to reduce sulfur emissions, shall be in compliance with the applicable requirement in Section 5.4.1 no later than July 1, 2013.

Crimson has addressed the particulate matter requirement by proposing to fire the unit on fuel with a sulfur content to no more than one (1) grain of total sulfur per one hundred (100) standard cubic feet.

- *The unit shall only be fired on natural gas/waste gas with a maximum sulfur content of 1 gr S/100 scf. [District Rules 2201 and 4320] N*

Compliance with section 5.4 is expected.

### **Section 5.6 Startup and Shutdown Provisions**

Section 5.6 states that on and after the full compliance deadline specified 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.

Emissions during start-up and shutdown are not be subject to the emission limits in Sections 5.2 and 5.2.2. Start-up and shutdown provisions are not proposed.

### **Section 5.7 Monitoring Provisions**

Section 5.7.1 requires that permit units subject to District Rule 4320, Section 5.2 shall both install and maintain an operational APCO approved Continuous Emission Monitoring System (CEMS) for NO<sub>x</sub>, CO and O<sub>2</sub>, or implement an APCO-approved alternate monitoring.

Crimson proposes to use Alternate Monitoring Scheme A (pursuant to District Policy SSP-1105), which requires that monitoring of NO<sub>x</sub>, CO, and O<sub>2</sub> exhaust concentrations shall be conducted at least once per month (in which a source test is not performed) using a portable analyzer. The following conditions will be incorporated into the ATC to ensure compliance with the requirements of the proposed alternate monitoring plan:

- {4063} The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> 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]

- If the NO<sub>x</sub> or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, 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 4102, 4305, 4306 and 4320] Y
- All NO<sub>x</sub>, CO, and O<sub>2</sub> 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 NO<sub>x</sub>, CO, and O<sub>2</sub> 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 sample 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 4102, 4305, 4306 and 4320] Y
- {4066} The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent by volume and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (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]
- 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. Unless otherwise specified in the PTO, 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 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Y

Section 5.7.6 requires operators complying with Sections 5.4.1.1 or 5.4.1.2 to provide an annual fuel analysis to the District unless a more frequent sampling and reporting period is included in the Permits to Operate. Sulfur analysis shall be performed in accordance with the test methods in Section 6.2.

- When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320]

The following condition will be listed on the ATC to ensure compliance with the reporting section of this requirement:

- 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 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).

Therefore, the following condition will be listed on the ATC as follows:

- {2976} The source test plan shall identify which basis (ppmv or lb./MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320]

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.

Therefore, the following permit condition will be listed on the ATC as follows:

- {2972} 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. Unless otherwise 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. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306, and 4320]

Section 5.8.4 requires that for emissions monitoring pursuant to Sections 5.7.1 and 6.3.1 using a portable NO<sub>x</sub> 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.

Therefore, the following permit condition will be listed on the ATC as follows:

- {4065} 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]

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. Therefore, the following permit condition will be listed on the ATC as follows:

- {2980} 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 and EPA upon request. Failure to maintain records or information contained in the records that demonstrate noncompliance with the applicable requirements of this rule shall constitute a violation of this rule.

A permit condition will be listed on the ATC as follows:

- 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 <sub>x</sub>	ppmv	EPA Method 7E or ARB Method 100
NO <sub>x</sub>	lb./MMBtu	EPA Method 19
CO	ppmv	EPA Method 10 or ARB Method 100

Pollutant	Units	Test Method Required
Stack Gas O <sub>2</sub>	%	EPA Method 3 or 3A, or ARB Method 100
Stack Gas Velocities	ft/min	EPA Method 2
Stack Gas Moisture Content	%	EPA Method 4
Oxides of sulfur		EPA Method 6C, EPA Method 8, or ARB Method 100
Total Sulfur as Hydrogen Sulfide (H <sub>2</sub> S) Content		EPA Method 11 or EPA Method 15, as appropriate.
Sulfur Content of Liquid Fuel		ASTM D 6920-03 or ASTM D 5453-99

The following permit condition will be listed on the ATC as follows:

- 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 ARB Method 100; Stack gas oxygen (O<sub>2</sub>) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO<sub>x</sub> - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H<sub>2</sub>S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rule 2201, 4305, 4306, 4320] N

### Section 6.3, Compliance Testing

Section 6.3.1 requires that this unit be tested to determine compliance with the applicable requirements of section 5.1 and 5.2.3 not less than once every 12 months. Upon demonstrating compliance on two consecutive compliance source tests, the following source test may be deferred for up to thirty-six months.

The following permit conditions will be listed on the ATC:

- A source test to demonstrate compliance with NO<sub>x</sub> and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 220, 4305, 4306 and 4320]
- Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). 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 4305, 4306 and 4320]
- The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

## **Section 7.0, Compliance Schedule**

Section 7.0 identifies the dates by which the operator shall submit an application for an ATC and the date by which the owner shall demonstrate compliance with this rule.

The unit will be in compliance with the emissions limits listed in Table 1, Section 5.2 of this rule, and periodic monitoring and source testing as required by District Rule 4320. Therefore, requirements of the compliance schedule, as listed in Section 7.0 of District Rule 4320, are satisfied. No further discussion is required.

## **Conclusion**

Conditions will be incorporated into the permit in order to ensure compliance with each section of this rule. Therefore, compliance with District Rule 4320 requirements is expected.

## **Rule 4351 Boilers, Steam Generators and Process Heaters – Phase 1**

This rule applies to boilers, steam generators, and process heaters at NO<sub>x</sub> Major Sources that are not located west of Interstate 5 in Fresno, Kings, or Kern counties. The facility is a NO<sub>x</sub> Major Sources is located east of Interstate five. Therefore, this rule applies. Since emissions limits of Rule 4320 and all other requirements are equivalent to, or more stringent, than Rule 4351 requirements, compliance with Rule 4320 requirements will satisfy requirements of Rule 4351.

## **Rule 4801 Sulfur Compounds**

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<sub>2</sub>, on a dry basis averaged over 15 consecutive minutes. As the combustion equipment associated with this project will be fired on PUC quality natural gas, compliance with the requirements of this rule is expected.

## **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.

### **Greenhouse Gas (GHG) Significance Determination**

#### District is a Responsible Agency

It is determined that another agency has prepared an environmental review document for the project. The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). As a Responsible Agency, the District is limited to mitigating or avoiding impacts for which it has statutory authority. The District does not have statutory authority for regulating greenhouse gas emissions. The District has determined that the applicant is responsible for implementing greenhouse gas mitigation measures, if any, imposed by the Lead Agency.

#### **District CEQA Findings**

The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). The District's engineering evaluation of the project (this document) demonstrates that compliance with District rules and permit conditions would reduce Stationary Source emissions from the project to levels below the District's significance thresholds for criteria pollutants. The District has determined that no additional findings are required (CEQA Guidelines §15096(h)).

#### **Indemnification Agreement/Letter of Credit Determination**

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit is based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

The criteria pollutant emissions and toxic air contaminant emissions associated with the proposed project are not significant, and there is minimal potential for public concern for this particular type of facility/operation. Therefore, an Indemnification Agreement and/or a Letter of Credit will not be required for this project in the absence of expressed public concern.

**IX. Recommendation**

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATC S-2018-100-0 subject to the permit conditions on the attached draft ATC in **Appendix A**.

**X. Billing Information**

<b>Annual Permit Fees</b>			
<b>Permit Number</b>	<b>Fee Schedule</b>	<b>Fee Description</b>	<b>Annual Fee</b>
S-2018-100-0	3020-02-H	85 MMBtu/hr	\$1,238

**Appendixes**

- A: Draft ATC and Emission Profile
- B: BACT Guideline and BACT Analysis
- C: HRA Summary
- D: SSPE1 Calculations
- E: Quarterly Net Emissions Change
- F: ERC Withdrawal Calculations
- G: ERC Surplus Analysis



**Appendix A:  
Draft ATC and Emission Profile**

*San Joaquin Valley  
Air Pollution Control District*

## AUTHORITY TO CONSTRUCT

DRAFT

**ISSUANCE DATE:** DRAFT

**PERMIT NO:** S-2018-100-0

**LEGAL OWNER OR OPERATOR:** CRIMSON RESOURCE MANAGEMENT

**MAILING ADDRESS:** 11200 RIVER RUN BLVD STE 200  
BAKERSFIELD, CA 93311

**LOCATION:** HEAVY OIL WESTERN STATIONARY SOURCE

**SECTION:** 25 **TOWNSHIP:** 31S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**

85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED PCL STEAM GENERATOR MODEL 85M WITH A NORTH AMERICAN LE-85 ULTA LOW NOX BURNER AND FLUE GAS RECIRCULATION (STEAM GENERATOR #4)

## CONDITIONS

1. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOX emission reduction credits for the following quantity of emissions: 1st quarter - 1,731 lb., 2nd quarter - 1,731 lb., 3rd quarter - 1,731 lb., and 4th quarter - 1,732 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule]
2. ERC Certificate Number S-3388-2 (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]
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter - 847 lb., 2nd quarter - 847 lb., 3rd quarter - 847 lb., and 4th quarter - 847 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201]
4. ERC Certificate Number S-3392-4 (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]

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.

Samir Sheikh, Executive Director / APCO

DRAFT

**Brian Clements, Director of Permit Services**

S-2018-100-0 : Jun 21 2021 9:25AM - JONESW : Joint Inspection NOT Required

5. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 1,535 lb., 2nd quarter - 1,536 lb., 3rd quarter - 1,536 lb., and 4th quarter - 1,536 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201]
6. ERC Certificate Number S-3387-1 (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]
7. The unit shall only be fired on natural gas/waste gas with a maximum sulfur content of 1.0 gr S/100 scf [District Rule 2201 and 4320]
8. Emission rates shall not exceed any of the following: NO<sub>x</sub> (as NO<sub>x</sub>): 5 ppmvd @ 3% O<sub>2</sub> or 0.0062 lb. /MMBtu; SO<sub>x</sub>: 0.00285 lb. /MMBtu; PM<sub>10</sub>: 0.0035 lb. /MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb.-CO/MMBtu; or VOC: 0.0055 lb./MMBtu. [District Rule 2201 and 4320]
9. Permittee shall submit notification to the District of the date of construction, anticipated startup, and actual startup. Notifications shall be postmarked no later than 30 days after construction and 15 days after actual startup. The notifications shall include the design heat input and identification of fuels for this permit unit. [District Rule 40 CFR 60.48c (a)]
10. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted in the unit shall be installed, utilized and maintained. [District Rule 2201 and 40 CFR 60.48c (g)]
11. {4063} The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> 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 and 4306]
12. If the NO<sub>x</sub> or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, 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 Rule 4102, 4305, 4306 and 4320]
13. All NO<sub>x</sub>, CO, and O<sub>2</sub> 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 NO<sub>x</sub>, CO, and O<sub>2</sub> 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 sample 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 Rule 4102, 4305, 4306 and 4320]
14. {4066} The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent by volume and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (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 and 4306]
15. 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. Unless otherwise specified in the PTO, 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 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rule 4305, 4306 and 4320]

CONDITIONS CONTINUE ON NEXT PAGE

16. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320]
17. {2976} The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306]
18. {2972} 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 and 4306]
19. {4065} 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 and 4306]
20. {2980} 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 and 4306]
21. The following test methods shall be used: NOX (ppmv) - EPA Method 7E or ARB Method 100, NO<sub>x</sub> (lb./MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O<sub>2</sub>) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO<sub>x</sub> - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H<sub>2</sub>S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rule 2201, 4305, 4306, 4320]
22. A source test to demonstrate compliance with NO<sub>x</sub> and CO emission limits shall be performed within 60 days of startup of this unit. [District Rule 220, 4305, 4306 and 4320]
23. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). 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 Rule 4305, 4306 and 4320]
24. The results of each source test shall be submitted to the District within 60 days thereafter [District Rule 1081]
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 Rule 1070, 4305, 4306, 4320, and 40 CFR 60.48c (i)]
26. Permittee shall maintain daily records of the type and quantity of fuel combusted by the steam generator. [District Rule 2201 and 40 CFR 60.48c (g)]

DRAFT

Permit #: S-2018-100-0	<b>Last Updated</b>
Facility: CRIMSON RESOURCE MANAGEMENT	05/31/2021 JONESW

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	4617.0	2122.0	2606.0	13775.0	4095.0
Daily Emis. Limit (lb/Day)	12.6	5.8	7.1	37.7	11.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	1154.0	531.0	558.0	3444.0	1024.0
Q2:	1154.0	531.0	558.0	3444.0	1024.0
Q3:	1154.0	531.0	558.0	3444.0	1024.0
Q4:	1154.0	531.0	558.0	3444.0	1024.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

**Appendix B:  
BACT Guideline and BACT Analysis**

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.2.1\***

Last Update: 03/24/2014

**Oilfield Steam Generator (> or =20 MMBtu/hr)**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Gaseous fuel		
SO <sub>x</sub>	Fired on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dsct; or use of a continuously operating SO <sub>2</sub> scrubber and either achieve 95% by weight control of sulfur compounds or achieve an emission rate of 9 ppmvd SO <sub>2</sub> @ 3% O <sub>2</sub>		
PM <sub>10</sub>	Fired on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dsct; or use of a continuously operating SO <sub>2</sub> scrubber and either achieve 95% by weight control of sulfur compounds or achieve an emission rate of 9 ppmvd SO <sub>2</sub> @ 3% O <sub>2</sub>		
NO <sub>x</sub>	<ul style="list-style-type: none"> <li>-Units rated 85 MMBtu/hr and fired solely on PUC quality natural gas: 6 ppmvd @ 3% O<sub>2</sub>; or</li> <li>-Units firing on &gt; or = 50% PUC quality natural gas; commercial propane; and/or LPG: 7 ppmvd @ 3% O<sub>2</sub>, except units rated 85 MMBtu/hr and fired solely on PUC quality natural gas; or</li> <li>-Units firing on &lt;50% PUC quality natural gas; commercial propane; and/or LPG: 9 ppmvd @ 3% O<sub>2</sub></li> </ul>	5 ppmvd @ 3% O <sub>2</sub>	
CO	25 ppmvd @ 3% O <sub>2</sub>		

## Top Down BACT Analysis for Steam Generators

For the steam generator, BACT is required for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC.

### Top-Down BACT Analysis for NO<sub>x</sub> Emissions

#### a. Step 1 - Identify All Possible Control Technologies

From the SJVUAPCD BACT Clearinghouse, Guideline 1.2.1, Oilfield Steam Generator ( $\geq$  20 MMBtu/hr), 4<sup>th</sup> quarter 2014, identifies BACT for NO<sub>x</sub> emissions as follows:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
NO <sub>x</sub>	<ul style="list-style-type: none"> <li>Units rated 85 MMBtu/hr and fired solely on PUC quality natural gas: 6 ppmvd @ 3% O<sub>2</sub>; or</li> <li>Units firing on &gt; 50% PUC quality natural gas, commercial propane, and/or LPG: 7 ppmvd @ 3% O<sub>2</sub>, except units rated 85 MMBtu/hr and fired solely on PUC quality natural gas; or</li> <li>Units firing on &lt; 50% PUC quality natural gas, commercial propane, and/or LPG: 9 ppmvd @ 3% O<sub>2</sub></li> </ul>	5 ppmvd @ 3% O <sub>2</sub>	

#### Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

#### Step 3 - Rank Remaining Control Technologies by Control Effectiveness

- 5 ppmvd @ 3% O<sub>2</sub> (Technologically Feasible)
- Units rated 85 MMBtu/hr and fired solely on PUC quality natural gas: 6 ppmvd @ 3% O<sub>2</sub> (Achieved in Practice)
- Units firing on > 50% PUC quality natural gas, commercial propane, and/or LPG: 7 ppmvd @ 3% O<sub>2</sub>, except units rated 85 MMBtu/hr and fired solely on PUC quality natural gas (Achieved in Practice)



4. Units firing on < 50% PUC quality natural gas, commercial propane, and/or LPG: 9 ppmvd @ 3% O<sub>2</sub> (Achieved in Practice)

#### **Step 4 - Cost Effectiveness Analysis**

The applicant has proposed to limit the NO<sub>x</sub> emissions of the steam generator in this project to 5 ppmv @ 3% O<sub>2</sub>; therefore a cost effective analysis is not required.

#### **Step 5 - Select BACT**

BACT for NO<sub>x</sub> emissions from the oilfield steam generator is 5 ppmvd @ 3% O<sub>2</sub>. The applicant has proposed to install a steam generator with a NO<sub>x</sub> limit of 5 ppmvd @ 3% O<sub>2</sub>; therefore, BACT for NO<sub>x</sub> emissions is satisfied.

## Top Down BACT Analysis for SO<sub>x</sub> and PM<sub>10</sub> Emissions

### Step 1 - Identify all control technologies

From the SJVUAPCD BACT Clearinghouse, Guideline 1.2.1, Oilfield Steam Generator ( $\geq$  20 MMBtu/hr), 4<sup>th</sup> quarter 2014, identifies BACT for SO<sub>x</sub> and PM<sub>10</sub> emissions as follows:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
SO <sub>x</sub> and PM <sub>10</sub>	Fired on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dscf; or use of a continuously operating SO <sub>2</sub> scrubber and either achieve 95% by weight control of sulfur compounds or achieve an emissions rate of 9 ppmvd SO <sub>2</sub> @ 3% O <sub>2</sub>		

### Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

### Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Fired on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dscf; or use of a continuously operating SO<sub>2</sub> scrubber and either achieve 95% by weight control of sulfur compounds or achieve an emissions rate of 9 ppmvd SO<sub>2</sub> @ 3% O<sub>2</sub> (Achieved in Practice)

### Step 4 - Cost Effectiveness Analysis

The applicant has proposed to use natural/waste/TEOR/produced gas fuel with a sulfur content no more than 1 grains/100 scf for the steam generators, which meets the most stringent emission requirements of BACT. Therefore, BACT is satisfied and a cost effective analysis does not need to be performed.

## **Step 5 - Select BACT**

Natural/waste/TEOR/produced gas with a sulfur content not to exceed 1 gr-S/100 scf. This proposal is selected as BACT for SO<sub>x</sub> and PM<sub>10</sub> emissions; therefore, BACT for SO<sub>x</sub> and PM<sub>10</sub> emissions is satisfied.

## Top Down BACT Analysis for CO Emissions

### Step 1 - Identify All Possible CO Control Technologies

From the SJVUAPCD BACT Clearinghouse, Guideline 1.2.1, Oilfield Steam Generator ( $\geq$  20 MMBtu/hr), 4<sup>th</sup> quarter 2014, identifies BACT for CO emissions as follows:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
CO	25 ppmvd @ 3% O <sub>2</sub>		

### Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

### Step 3 - Rank Remaining Control Technologies by Control Effectiveness

- 1) 25 ppmvd @ 3% O<sub>2</sub> (Achieved-In-Practice)

### Step 4 - Cost Effectiveness Analysis

The applicant has proposed to limit the CO emissions of the steam generators in this project to 25 ppmv @ 3% O<sub>2</sub>. Since the applicant has chosen the most effective control technology in step 3, a cost effectiveness analysis is not required.

### Step 5 - Select BACT

The applicant has proposed to install steam generators with a CO limit of 25 ppmvd @ 3% O<sub>2</sub>; therefore, BACT for CO emissions is satisfied.

## Top Down BACT Analysis for VOC Emissions

### Step 1 - Identify All Possible VOC Control Technologies

From the SJVUAPCD BACT Clearinghouse, Guideline 1.2.1, Oilfield Steam Generator ( $\geq$  20 MMBtu/hr), 4<sup>th</sup> quarter 2014, identifies BACT for VOC emissions as follows:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Gaseous fuel		

### Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

### Step 3 - Rank Remaining Control Technologies by Control Effectiveness

- 1) Gaseous fuel (Achieved-In-Practice)

### Step 4 - Cost Effectiveness Analysis

The applicant has proposed the use of natural/waste/TEOR/produced gas fuel for the steam generators in this project. Since the applicant has chosen the most effective control technology in step 3, a cost effectiveness analysis is not required.

### Step 5 - Select BACT

The applicant has proposed natural/waste gas fuel; therefore BACT for VOC emissions is satisfied.

**Appendix C:  
HRA Summary**

# San Joaquin Valley Air Pollution Control District

## Risk Management Review and Ambient Air Quality Analysis

To: William Jones – Permit Services  
 From: Keanu Morin – Technical Services  
 Date: May 14, 2021  
 Facility Name: Crimson Resource Management  
 Location: Section 25, Township 31S, Range 22E  
 Application #(s): S-2018-100-0  
 Project #: S-1203974

---

### Summary

#### RMR

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
100-0	0.02	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	No	No
<b>Project Totals</b>	0.02	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>		
<b>Facility Totals</b>	<1	0.00	0.00	0.00E+00		

Notes:

- The project passed with a prioritization score less than 1; therefore, no further analysis was required.

#### AAQA

Pollutant	Air Quality Standard (State/Federal)				
	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass		Pass		
NO <sub>x</sub>	Pass				Pass
SO <sub>x</sub>	Pass	Pass		Pass	Pass
PM <sub>10</sub>				Pass	Pass
PM <sub>2.5</sub>				Pass	Pass

Notes:

- Results were taken from the attached AAQA Report.
- The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2) unless otherwise noted below.
- Modeled PM<sub>10</sub> concentrations were below the District SIL for non-fugitive sources of 5 µg/m<sup>3</sup> for the 24-hour average concentration and 1 µg/m<sup>3</sup> for the annual concentration.
- Modeled PM<sub>2.5</sub> concentrations were below the District SIL for non-fugitive sources of 1.2 µg/m<sup>3</sup> for the 24-hour average concentration and 0.2 µg/m<sup>3</sup> for the annual concentration.

To ensure that human health risks will not exceed District allowable levels; the following shall be included as requirements for:

Unit # 1-0

1. No special requirements.

**Project Description**

Technical Services received a request on May 12, 2021 to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for the following:

- Unit -100-0: 85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED PCL STEAM GENERATOR MODEL 85M WITH A NORTH AMERICAN LE-85 ULTA LOW NOX BURNER AND FLUE GAS RECIRCULATION

**RMR Report**

**Analysis**

The District performed an analysis pursuant to the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015) to determine the possible cancer and non-cancer health impact to the nearest resident or worksite. This policy requires that an assessment be performed on a unit by unit basis, project basis, and on a facility-wide basis. If a preliminary prioritization analysis demonstrates that:

- A unit's prioritization score is less than the District's significance threshold and;
- The project's prioritization score is less than the District's significance threshold and;
- The facility's total prioritization score is less than the District's significance threshold

Then, generally no further analysis is required.

The District's significant prioritization score threshold is defined as being equal to or greater than 1.0. If a preliminary analysis demonstrates that either the unit(s) or the project's or the facility's total prioritization score is greater than the District threshold, a screening or a refined assessment is required

If a refined assessment is greater than one in a million but less than 20 in one million for carcinogenic impacts (Cancer Risk) and less than 1.0 for the Acute and Chronic hazard indices(Non-Carcinogenic) on a unit by unit basis, project basis and on a facility-wide basis the proposed application is considered less than significant. For unit's that exceed a cancer risk of 1 in one million, Toxic Best Available Control Technology (TBACT) must be implemented.

Toxic emissions for this project were calculated using the following methods:

- Toxic emission factors for this unit were derived from data in the 1992 Radian Corporation report to WSPA.

These emissions were input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy, risks from the proposed unit's toxic emissions were prioritized using the procedure in the 2016 CAPCOA Facility Prioritization Guidelines. The prioritization score for this proposed unit was less than 1.0 (see RMR Summary Table).Therefore, no further analysis was necessary.



The following parameters were used for the review:

Source Process Rates						
Unit ID	Process ID	Process Material	Process Units	Hourly Process Rate	Annual Process Rate	Receptor Distance (m)
100-0	1	Natural Gas	MMscf.	0.09	744.60	835

## AAQA Report

The District modeled the impact of the proposed project on the National Ambient Air Quality Standard (NAAQS) and/or California Ambient Air Quality Standard (CAAQS) in accordance with District Policy APR-1925 (Policy for District Rule 2201 AAQA Modeling) and EPA's Guideline for Air Quality Modeling (Appendix W of 40 CFR Part 51). The District uses a progressive three level approach to perform AAQAs. The first level (Level 1) uses a very conservative approach. If this analysis indicates a likely exceedance of an AAQS or Significant Impact Level (SIL), the analysis proceeds to the second level (Level 2) which implements a more refined approach. For the 1-hour NO<sub>2</sub> standard, there is also a third level that can be implemented if the Level 2 analysis indicates a likely exceedance of an AAQS or SIL.

The modeling analyses predicts the maximum air quality impacts using the appropriate emissions for each standard's averaging period. Required model inputs for a refined AAQA include background ambient air quality data, land characteristics, meteorological inputs, a receptor grid, and source parameters including emissions. These inputs are described in the sections that follow.

Ambient air concentrations of criteria pollutants are recorded at monitoring stations throughout the San Joaquin Valley. Monitoring stations may not measure all necessary pollutants, so background data may need to be collected from multiple sources. The following stations were used for this evaluation:

Monitoring Stations				
Pollutant	Station Name	County	City	Measurement Year
CO	Arvin - Di Giorgio	Kern	Arvin	2018
NOx	Bakersfield-California Avenue	Kern	Bakersfield	2018
PM10	Bakersfield-California Avenue	Kern	Bakersfield	2018
PM2.5	BAKERSFIELD - SOUTHEAST (PLANZ)	Kern	Bakersfield	2018
SOx	Fresno - Garland	Fresno	Fresno	2018

Technical Services performed modeling for directly emitted criteria pollutants with the emission rates below:

Emission Rates (lbs/hour)						
Unit ID	Process	NOx	SOx	CO	PM10	PM2.5
100-0	1	0.50	0.20	1.60	0.30	0.30

Emission Rates (lbs/year)						
Unit ID	Process	NOx	SOx	CO	PM10	PM2.5
100-0	1	4,617	2,122	13,775	2,234	2,234

The AERMOD model was used to determine if emissions from the project would cause or contribute to an exceedance of any state of federal air quality standard. The parameters outlined below and

meteorological data for 2004-2008 from Fellows (rural dispersion coefficient selected) were used for the analysis:

The following parameters were used for the review:

Point Source Parameters						
Unit ID	Unit Description	Release Height (m)	Temp. (°K)	Exit Velocity (m/sec)	Stack Diameter (m)	Vertical/ Horizontal/ Capped
100-0	85 MMbtu/hr Steam Generator	6.10	389	17.37	1.07	Vertical

## Conclusion

### RMR

The cumulative prioritization score for the facility, including this project, is less than 1.0. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

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.

### AAQA

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

## Attachments

- A. Modeling request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Prioritization score w/ toxic emissions summary
- D. Facility Summary
- E. AAQA results

**Appendix D:  
SSPE1 Calculations**

# Detailed SSPE Report

<i>Region Facility</i>	<i>Unit Mod</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>CO</i>	<i>VOC</i>	<i>Number of Outstanding ATCs</i>
S 2018	0 0						0
S 2018	13 1	0	0	0	0	0	0
S 2018	14 1	0	0	0	0	0	0
S 2018	15 1	0	0	0	0	0	0
S 2018	16 1	0	0	0	0	0	0
S 2018	17 0	0	0	0	0	182	0
S 2018	19 0	0				500	0
S 2018	20 3	0	0	0	0	1085	0
S 2018	21 0	0				500	0
S 2018	22 0	0				500	0
S 2018	23 0	0	0	0	0	0	0
S 2018	25 2	0	0	0	0	1212	0
S 2018	29 0	5957	2122	5659	14147	4095	0
S 2018	30 0	5957	212	5659	14147	4095	0
S 2018	31 0	0	0	0	0	3376	0
S 2018	32 1	0	0	0	0	91	2
S 2018	33 0	0	0	0	0	18	0
S 2018	35 0	0	0	0	0	864	0
S 2018	36 0	0	0	0	0	864	0
S 2018	37 0	0	0	0	0	864	0
S 2018	38 0	0	0	0	0	864	0
S 2018	44 0	0	0	0	0	864	0
S 2018	46 0	0	0	0	0	864	0
S 2018	48 0	0	0	0	0	330	0
S 2018	49 0	0	0	0	0	1539	0
S 2018	50 0	4617	2122	5659	14147	4095	0

Monday, May 31, 2021

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**Notes:**

*Blank values for a particular permit unit do not necessarily reflect zero emissions. For units with blank values, the PE must still be determined based on physical PE or as limited by permit condition.*

*For permits that show outstanding ATCs, consult PAS ATC Emission Profile records to determine what the highest PE is for each pollutant.*

*ATCs for new units (e.g. S-XXXX-X-0) must be added in separately.*

*ERC's for onsite reductions must be added in separately per Rule 2201 as well.*

<i>Region</i>	<i>Facility</i>	<i>Unit</i>	<i>Mod</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>CO</i>	<i>VOC</i>	<i>Number of Outstanding ATCs</i>
S	2018	51	0	0	0	0	0	0	0
S	2018	52	0	7884	624	1460	17805	1205	0
S	2018	53	0	3627	1038	1531	7253	604	0
S	2018	54	0	0	0	0	0	0	0
S	2018	55	0	0	0	0	0	0	0
S	2018	56	0	0	0	0	0	0	0
S	2018	57	0	0	0	0	0	0	0
S	2018	58	0	5242	1867	2293	11794	3604	0
S	2018	59	0	5242	1867	2293	11794	3604	0
S	2018	60	0	5242	1867	2293	11794	3604	0
S	2018	61	0	5242	1867	2293	11794	3604	0
S	2018	62	0	5242	1867	2293	11794	3604	0
S	2018	63	0	5242	1867	2293	11794	3604	0
S	2018	64	0	5242	1867	2293	11794	3604	0
S	2018	65	0	3942	3592	1664	7884	657	0
S	2018	66	0	3942	3592	1664	7884	657	0
S	2018	67	0	0	0	0	0	0	0
S	2018	68	0	0	0	0	0	0	0
S	2018	69	0	0	0	0	0	5475	0
S	2018	70	0	0	0	0	0	0	0
S	2018	71	0	0	0	0	0	0	0
S	2018	72	0	0	0	0	0	0	0
S	2018	73	0	0	0	0	0	0	0
S	2018	74	0	0	0	0	0	0	0
S	2018	75	0	5242	1867	2293	11794	3604	0
S	2018	76	0	5242	1867	2293	11794	3604	0
S	2018	77	0	5242	1867	2293	11794	3604	0
S	2018	78	0	5242	1867	2293	11794	3604	0
S	2018	79	0	0	0	0	0	0	0

Monday, May 31, 2021

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**Notes:**

**Blank values for a particular permit unit do not necessarily reflect zero emissions. For units with blank values, the PE must still be determined based on physical PE or as limited by permit condition.**

**For permits that show outstanding ATCs, consult PAS ATC Emission Profile records to determine what the highest PE is for each pollutant.**

**ATCs for new units (e.g. S-XXXX-X-0) must be added in separately.**

**ERC's for onsite reductions must be added in separately per Rule 2201 as well.**

<i>Region</i>	<i>Facility</i>	<i>Unit</i>	<i>Mod</i>	<i>NOx</i>	<i>SOx</i>	<i>PM10</i>	<i>CO</i>	<i>VOC</i>	<i>Number of Outstanding ATCs</i>
S	2018	80	0	0	0	0	0	0	0
S	2018	81	0	0	0	0	0	0	0
S	2018	82	0	6023	10184	4161	9855	3011	0
S	2018	83	0	6023	0	4161	9855	3011	0
S	2018	84	0	6023	0	4161	9855	3011	0
S	2018	85	0	0	0	0	0	0	0
S	2018	86	0	0	0	0	0	0	0
S	2018	87	0	0	0	0	0	0	0
S	2018	88	0	0	0	0	0	0	0
S	2018	89	0	0	0	0	0	0	0
S	2018	90	0	0	0	0	0	0	0
S	2018	91	0	0	0	0	0	0	0
S	2018	92	0	0	0	0	0	0	0
S	2018	93	0	0	0	0	0	0	0
S	2018	94	0	0	0	0	0	0	0
S	2018	95	0	0	0	0	0	0	0
S	2018	96	0	5182	1846	1943	11660	3563	0
S	2018	97	0	0	0	0	0	0	0
S	2018	98	0	0	0	0	0	0	0
<i>SSPE (lbs)</i>				116839	45869	62945	254226	87640	

*Notes:*

*Blank values for a particular permit unit do not necessarily reflect zero emissions. For units with blank values, the PE must still be determined based on physical PE or as limited by permit condition.*

*For permits that show outstanding ATCs, consult PAS ATC Emission Profile records to determine what the highest PE is for each pollutant.*

*ATCs for new units (e.g. S-XXXX-X-0) must be added in separately.*

*ERC's for onsite reductions must be added in separately per Rule 2201 as well.*

**Appendix E:  
Quarterly Net Emissions Change**

## 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.1 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

$PE2_{\text{quarterly}} = PE2_{\text{annual}} \div 4 \text{ quarters/year}$

$PE1_{\text{quarterly}} = PE1_{\text{annual}} \div 4 \text{ quarters/year}$

Quarterly NEC [QNEC]			
Pollutant	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO <sub>x</sub>	1,154.13	0	1,154.13
SO <sub>x</sub>	530.53	0	530.53
PM <sub>10</sub>	558.45	0	558.45
CO	3,443.78	0	3,443.78
VOC	1,023.83	0	1,023.83



**Appendix F:  
ERC Withdrawal Calculations**

<b>NO<sub>x</sub></b>	<b>1<sup>st</sup> Quarter (lb)</b>	<b>2<sup>nd</sup> Quarter (lb)</b>	<b>3<sup>rd</sup> Quarter (lb)</b>	<b>4<sup>th</sup> Quarter (lb)</b>
ERC S-3388-2	4,704	3,393	3,449	2,696
Offsets Required (Includes distance offset ratio)	1,731	1,731	1,731	1,732
Amount Remaining	2,973	1,662	1,718	964
NO <sub>x</sub> Credits reissued to Crimson	2,973	1,662	1,718	964

<b>VOC</b>	<b>1<sup>st</sup> Quarter (lb)</b>	<b>2<sup>nd</sup> Quarter (lb)</b>	<b>3<sup>rd</sup> Quarter (lb)</b>	<b>4<sup>th</sup> Quarter (lb)</b>
ERC S-3387-1	23,009	20,107	19,072	13,925
Offsets Required (Includes distance offset ratio)	1,535	1,536	1,536	1,536
Amount Remaining	21,474	18,571	17,536	12,389
VOC Credits reissued to Crimson	21,474	18,571	17,536	12,389

<b>PM<sub>10</sub></b>	<b>1<sup>st</sup> Quarter (lb.)</b>	<b>2<sup>nd</sup> Quarter (lb.)</b>	<b>3<sup>rd</sup> Quarter (lb.)</b>	<b>4<sup>th</sup> Quarter (lb.)</b>
ERC #S-3392-4	1,271	1,214	1,219	1,224
Offsets Required (Includes distance offset ratio)	847	847	847	847
Amount Remaining	424	367	372	377
PM <sub>10</sub> Credits reissued to Crimson	424	367	372	377

**Appendix G:  
ERC Surplus Analysis**

# San Joaquin Valley Air Pollution Control District

## Surplus ERC Analysis

**Requester/Facility Name:** Crimson Resource Management

**Date:** 8/4/21

**Mailing Address:** 11200 River Run Blvd. Ste 200,  
Bakersfield, CA 93311

**Engineer:** William Jones

**Lead Engineer:** James Harader

**Contact Person:** Steve Nixon – EH&S Manager

**Telephone:** 661.281.2251

**ERC Certificate(s) #:** S-3387-1

**Project #:** S-1212602

### I. Proposal

Crimson Resource Management has requested the District perform an analysis of the current surplus value of the following Emission Reduction Credit (ERC) certificate:

Proposed ERC Certificate(s)	
Certificate #	Criteria Pollutant
S-3387-1	VOC

The purpose of this analysis is to ensure that the emission reductions on this ERC certificate are surplus of all applicable Federal requirements; therefore, this analysis establishes the surplus value of the ERC certificate as of the date of this analysis. The current face value and surplus value of the ERC certificate evaluated in this analysis is summarized in the following table:

#### Criteria Pollutant Summary: VOC

ERC Certificate S-3387-1				
Pollutant	1 <sup>st</sup> Qtr. (lb/qtr)	2 <sup>nd</sup> Qtr. (lb/qtr)	3 <sup>rd</sup> Qtr. (lb/qtr)	4 <sup>th</sup> Qtr. (lb/qtr)
Current Value	23,009	20,107	19,072	13,925
Surplus Value	23,009	20,107	19,072	13,925

## II. Individual ERC Certificate Analysis

### ERC Certificate S-3387-1

#### A. ERC Background

##### Criteria Pollutant: VOC

ERC Certificate S-3387-1 is a certificate that was split out from parent ERC Certificate S-2202-1. Original ERC Certificate S-2202-1 was issued to Crimson Resource Management on December 6, 2006 under project S-1052797. The ERCs were generated from the replacement of 6 lean burn natural gas fired IC engines (S-48-3, '-4, '-7, '-8, '-9, and '-10) driving gas compressors with three lower-emitting IC engine electrical generators powering electrically driven inlet gas compressors at facility S-48. The following table summarizes the values of the original parent certificate and the current value of the subject certificate proposed to be utilized as a part of the current District project:

ERC Certificate S-3387-1				
Pollutant	1 <sup>st</sup> Qtr. (lb/qtr)	2 <sup>nd</sup> Qtr. (lb/qtr)	3 <sup>rd</sup> Qtr. (lb/qtr)	4 <sup>th</sup> Qtr. (lb/qtr)
Original Value of Parent Certificate S-2202-1	23,063	20,161	19,126	13,979
Current Value of ERC Certificate S-3387-1	23,009	20,107	19,072	13,925

#### B. Applicable Rules and Regulations at Time of Original Banking Project

Based on the application review for the original ERC banking project, the following rules and regulations were evaluated to determine the surplus value of actual emission reductions of VOC generated by the reduction project.

##### 1. District Rules

###### Rule 2301 - Emission Reduction Credit Banking (12/17/92)

The application review for the original ERC banking project demonstrated that the ERC credit complied with District Rule 2301 requirements at the time it was issued.

###### Rule 4701 – Internal Combustion Engines – Phase I (8/21/03)

###### Rule 4702 – Internal Combustion Engines – Phase II (4/20/06)

The application review for the original ERC banking project demonstrated that the (6) engines had VOC limits that were below the limits in the Rules listed above for lean burn IC engines used for gas compression. A comparison of the emission limits is listed in the table below:

PERMIT NUMBER	EQUIPMENT DESCRIPTION	UNIT VOC EMISSIONS LIMIT	DISTRICT RULE 4702 (11/14/13) VOC EMISSIONS LIMIT	Source
S-48-3	600 HP CLARK MODEL RA-6 NATURAL GAS-FIRED EMERGENCY STANDBY IC ENGINE POWERING COMPRESSOR S/N A-21184	528 ppmv	750 ppmv	Original Banking project S-1052797
S-48-4	600 HP CLARK MODEL RA-6 NATURAL GAS-FIRED EMERGENCY STANDBY IC ENGINE DRIVING COMPRESSOR S/N 21167	710 ppmv	750 ppmv	Original Banking project S-1052797
S-48-7	660 HP CLARK MODEL HRA-6-M NATURAL GAS-FIRED EMERGENCY STANDBY IC ENGINE DRIVING COMPRESSOR S/N 21287	498 ppmv	750 ppmv	Original Banking project S-1052797
S-48-8	660 HP CLARK MODEL HRA-6-M NATURAL GAS-FIRED EMERGENCY STANDBY IC ENGINE DRIVING COMPRESSOR S/N A-21286	725 ppmv	750 ppmv	Original Banking project S-1052797
S-48-9	800 BHP NATURAL GAS FIRED CLARK MODEL RA-8 IC ENGINE DRIVING COMPRESSOR, S/N 25748	327.1 ppmv	750 ppmv	Original Banking project S-1052797
S-48-10	660 BHP NATURAL GAS FIRED CLARK MODEL HRA-6-M IC ENGINE DRIVING COMPRESSOR, S/N A-21383	324.6 ppmv	750 ppmv	Original Banking project S-1052797

Any adjustments to the surplus value of emission reductions from these units due to the requirements of this rule will be calculated in Section D of this analysis.

## 2. Federal Rules and Regulations

There were no applicable federal rules or regulations identified that applied at the time of this original ERC banking action; therefore, no further discussion is required.

### C. New or Modified Rule and Regulations Applicable to the Original Banking Project

All District and federal rules and regulations that have been adopted or amended since the date the original banking project was finalized will be evaluated below:

#### 1. District Rules:

##### Rule 4702 – Internal Combustion Engines – Phase II (11/14/13)

District Rule 4702 was amended by the District on November 14, 2013 and added to the District's SIP on April 25, 2016. The requirements of the amended Rule 4702 would have been applicable to the engines that were shut down in the original ERC banking project. However, the engines continue to comply with the limit requirements of the amended version of this rule. Therefore, the VOC emission reductions are still surplus of the requirements of this rule.

#### 2. Federal Rules and Regulations:

##### 40 CFR Part 60 Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

This subpart applies to stationary lean burn engines with a maximum engine power greater than or equal to 500 hp and less than 1,350 hp that were manufactured on or after July 2, 2007. The lean Burn Engines involved in this project were manufactured before 2007, and therefore not subject to this subpart.

### D. Surplus at Time of Use Adjustments to ERC Quantities

As demonstrated in the section above, the emissions reductions from permit units in the original banking project continue to be surplus of all applicable District and Federal Rules and Regulations. Therefore, no discounting to the ERC values are necessary for surplus at time of use considerations.

### E. Surplus Value of ERC Certificate

The emissions continue to be Surplus of all District and Federal Rules and Regulations; therefore, no adjustments to the ERC values are necessary.

ERC Certificate S-3387-1 – Criteria Pollutant VOC					
		1 <sup>st</sup> Qtr. (lb/qtr)	2 <sup>nd</sup> Qtr. (lb/qtr)	3 <sup>rd</sup> Qtr. (lb/qtr)	4 <sup>th</sup> Qtr. (lb/qtr)
(A)	Current ERC Quantity	23,009	20,107	19,072	13,925
(B)	Percent Discount	0%	0%	0%	0%
(C) = (A) x [1 – (B)]	<b>Surplus Value</b>	<b>23,009</b>	<b>20,107</b>	<b>19,072</b>	<b>13,925</b>

# San Joaquin Valley Air Pollution Control District

## Surplus ERC Analysis

**Requester/Facility Name:** Crimson Resource Management

**Date:** 8/4/21

**Mailing Address:** 11200 River Run Blvd. Ste 200,  
Bakersfield, CA 93311

**Engineer:** William Jones

**Lead Engineer:** James Harader

**Contact Person:** Steve Nixon – EH&S Manager

**Telephone:** 661.281.2251

**ERC Certificate(s) #:** S-3388-2

**Project #:** S-1212601

### III. Proposal

Crimson Resource Management has requested the District perform an analysis of the current surplus value of the following Emission Reduction Credit (ERC) certificate

Proposed ERC Certificate(s)	
Certificate #	Criteria Pollutant
S-3388-2	NOx

This analysis establishes the surplus value of the ERC certificate as of the date of this analysis. The current face value and surplus value of the ERC certificate evaluated in this analysis is summarized in the following table:

**Criteria Pollutant: NOx**

ERC Certificate S-3388-2				
Pollutant	1 <sup>st</sup> Qtr. (lb./qtr.)	2 <sup>nd</sup> Qtr. (lb./qtr.)	3 <sup>rd</sup> Qtr. (lb./qtr.)	4 <sup>th</sup> Qtr. (lb./qtr.)
Current Value	4,704	3,393	3,449	2,696
Surplus Value	4,704	3,393	3,449	2,696



## IV. Individual ERC Certificate Analysis

### ERC Certificate S-3388-2

#### A. ERC Background

##### Criteria Pollutant: NOx

ERC Certificate S-3388-2 is a certificate that was split out from parent ERC Certificate S-2202-2. Original ERC Certificate S-2202-2 was issued to Crimson Resource Management on December 6, 2006 under project S-1052797. The ERCs were generated from the replacement of 6 lean burn natural gas fired IC engines (S-48-3, '-4, '-7, '-8, '-9, and '-10) driving gas compressors with three lower-emitting IC engine electrical generators powering electrically driven inlet gas compressors at facility S-48. The following table summarizes the values of the original parent certificate and the current value of the subject certificate proposed to be utilized as a part of the current District project:

ERC Certificate S-3388-2				
Pollutant	1 <sup>st</sup> Qtr. (lb./qtr.)	2 <sup>nd</sup> Qtr. (lb./qtr.)	3 <sup>rd</sup> Qtr. (lb./qtr.)	4 <sup>th</sup> Qtr. (lb./qtr.)
Original Value of Parent Certificate S-2202-2	4,704	3,393	3,449	2,696
Current Value of ERC Certificate S-3388-2	4,704	3,393	3,449	2,696

#### B. Applicable Rules and Regulations at Time of Original Banking Project

Based on the application review for the original ERC banking project, the following rules and regulations were evaluated to determine the surplus value of actual emission reductions of NOx generated by the reduction project.

##### 3. District Rules

###### Rule 2301 - Emission Reduction Credit Banking (12/17/92)

The application review for the original ERC banking project demonstrated that the ERC credit complied with District Rule 2301 requirements at the time it was issued.

###### Rule 4701 – Internal Combustion Engines – Phase I (8/21/03)

###### Rule 4702 – Internal Combustion Engines – Phase II (4/20/06)

The application review for the original ERC banking project demonstrated that the six engines had NOx limits that were below the limits in the Rules listed above for lean burn gaseous fueled, IC engines used for gas compression. A comparison of the emission limits is listed in the table below:

PERMIT NUMBER	EQUIPMENT DESCRIPTION	UNIT NOx EMISSIONS LIMIT	DISTRICT RULE 4702 (11/14/13) NOx EMISSIONS LIMIT	Source
S-48-3	600 HP CLARK MODEL RA-6 NATURAL GAS-FIRED EMERGENCY STANDBY IC ENGINE POWERING COMPRESSOR S/N A-21184	61.5 ppmv	65 ppmv or 85% reduction	Original Banking project S-1052797
S-48-4	600 HP CLARK MODEL RA-6 NATURAL GAS-FIRED EMERGENCY STANDBY IC ENGINE DRIVING COMPRESSOR S/N 21167	28.5 ppmv	65 ppmv or 85% reduction	Original Banking project S-1052797
S-48-7	660 HP CLARK MODEL HRA-6-M NATURAL GAS-FIRED EMERGENCY STANDBY IC ENGINE DRIVING COMPRESSOR S/N 21287	65 ppmv	75 ppmv or 85% reduction	Original Banking project S-1052797
S-48-8	660 HP CLARK MODEL HRA-6-M NATURAL GAS-FIRED EMERGENCY STANDBY IC ENGINE DRIVING COMPRESSOR S/N A-21286	64.2 ppmv	75 ppmv or 85% reduction	Original Banking project S-1052797
S-48-9	800 BHP NATURAL GAS FIRED CLARK MODEL RA-8 IC ENGINE DRIVING COMPRESSOR, S/N 25748	65 ppmv	75 ppmv or 85% reduction	Original Banking project S-1052797
S-48-10	660 BHP NATURAL GAS FIRED CLARK MODEL HRA-6-M IC ENGINE DRIVING COMPRESSOR, S/N A-21383	65 ppmv	75 ppmv or 85% reduction	Original Banking project S-1052797

As seen above the NOx emission limits for the engines associated with this project, do not exceed the NOx emission limit requirements in DISTRICT RULE 4702 (11/14/13).

#### 4. Federal Rules and Regulations

There were no applicable federal rules or regulations identified that applied at the time of this original ERC banking action; therefore, no further discussion is required.

### C. New or Modified Rule and Regulations Applicable to the Original Banking Project

All District and federal rules and regulations that have been adopted or amended since the date the original banking project was finalized will be evaluated below:

#### 3. District Rules:

##### Rule 4702 – Internal Combustion Engines – Phase II (11/14/13)

District Rule 4702 was amended by the District on November 14, 2013 and added to the District's SIP on April 25, 2016. The requirements of the amended Rule 4702 would have been applicable to the engines that were shut down in the original ERC banking project. However, the engines continue to comply with the limit requirements of the amended version of this rule. Therefore, the NOx emission reductions are still surplus of the requirements of this rule.

#### 4. Federal Rules and Regulations:

##### 40 CFR Part 60 Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

This subpart applies to stationary lean burn engines with a maximum engine power greater than or equal to 500 hp and less than 1,350 hp that were manufactured on or after July 2, 2007. Engines involved in this project are lean burn and their hp rating is between 600 hp and 800 hp, but they were manufactured before 2007. Therefore, the NOx requirements of this subpart do not apply and the emission reductions continue to be surplus of this subpart.

### D. Surplus at Time of Use Adjustments to ERC Quantities

As demonstrated in the section above, the emissions reductions from permit units in the original banking project are surplus of the applicable District and Federal Rules and Regulations. Therefore, no discounting to the ERC values are necessary for surplus at time of use considerations.

### E. Surplus Value of ERC Certificate

The emissions continue to be Surplus of all District and Federal Rules and Regulations; therefore, no adjustments to the ERC values are necessary.

ERC Certificate S-3388-2 – Criteria Pollutant NOx					
		1 <sup>st</sup> Qtr. (lb/qtr)	2 <sup>nd</sup> Qtr. (lb/qtr)	3 <sup>rd</sup> Qtr. (lb/qtr)	4 <sup>th</sup> Qtr. (lb/qtr)
(A)	Current ERC Quantity	4,704	3,393	3,449	2,696
(B)	Percent Discount	0%	0%	0%	0%
(C) = (A) x [1 – (B)]	<b>Surplus Value</b>	<b>4,704</b>	<b>3,393</b>	<b>3,449</b>	<b>2,696</b>