



DEC 06 2011

Gerardo C. Rios, Chief
Permits Office
Air Division
U.S. EPA - Region IX
75 Hawthorne St
San Francisco, CA 94105

Re: **Proposed Authorities to Construct / Certificate of Conformity (Minor Mod)
District Facility # S-36
Project # 1113927**

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authorities to Construct for San Joaquin Refining Company, located at 3129 Standard Street in Bakersfield, which has been issued a Title V permit. San Joaquin Refining Company is requesting that a Certificate of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. San Joaquin Refining Company has proposed to install SCR on three boilers/process heaters for Rule 4320 compliance.

Enclosed is the engineering evaluation of this application, a copy of the current Title V permit, and proposed Authorities to Construct # S-36-1-16, 41-18 and 51-19 with Certificate of Conformity. After demonstrating compliance with the Authorities to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,


David Warner
Director of Permit Services

Enclosures
cc: Steve Roeder, Permit Services

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
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DEC 06 2011

David Campbell
San Joaquin Refining Company
PO Box 5576
Bakersfield, CA 93388

**Re: Proposed Authorities to Construct / Certificate of Conformity (Minor Mod)
District Facility # S-36
Project # 1113927**

Dear Mr. Campbell:

Enclosed for your review is the District's analysis of your application for Authorities to Construct for the facility identified above. You have requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. San Joaquin Refining Company has proposed to install SCR on three boilers/process heaters for Rule 4320 compliance.

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

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

Thank you for your cooperation in this matter.

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San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review
SCR on Three Heaters for Rule 4320 Compliance

Facility Name: San Joaquin Refining
Mailing Address: PO Box 5576
Bakersfield, CA 93388

Date: 12/05/11
Engineer: Steve Roeder
Lead Engineer: Allan Phillips *AP SURR AOE*

Contact Person: David Campbell
Telephone: (661) 327-8248
Fax: (661) 327-2150
email: davidc@sjr.com
Application #: S-36-1-15, 41-18 and 51-19
Project #: S-1113297
Deemed Complete: 8/31/11

DEC 05 2011

I. Proposal

San Joaquin Refining (SJR) is proposing to install selective catalytic reduction (SCR) and limit the NO_x emissions to 9 ppmv on three emissions units for Rule 4320 compliance, and remove the oil-firing provisions of the units to be fitted with SCR.

Unit S-36-1

Unit S-36-1 consists of one 52.2 MMBtu/hr crude oil heater (#4) and one 27 MMBtu/hr Vacuum Heater (#VH-4). Consistent with the January 2011 revision to SJR's Rule 4320 Emission Control Plan (ECP), the 27 MMBtu/hr vacuum heater will be equipped with an SCR unit and the oil-firing capacity will be removed. The 52.2 MMBtu/hr crude oil heater will not be fitted with SCR, and SJR will pay the Rule 4320 fees for that emissions unit.

In addition, the SCR stack for unit S-36-1-16 will include a 0.9 MMBtu/hr reheat burner. This will only operate when the heater is operating sufficiently below it's rated capacity so that the exhaust gas temperature will remain high enough to properly maintain SCR operation. As such, there is not increase in the "rating" of the Vacuum Heater.

Unit S-36-41

Unit S-36-41 consists of one 31.25 MMBtu/hr boiler. The unit will be equipped with SCR and the oil-firing capacity will be removed.

Unit S-36-51

Unit S-36-51 consists of 5 heaters. The 47.1 MMBtu/hr heater (H-101) will be equipped with SCR. Pursuant to the aforementioned ECP, a Cogen unit is being proposed (S-36-115, Project 1104824) to replace the 7.44 MMBtu/hr H-201, the 17 MMBtu/hr H-501, the 8.4 MMBtu/hr H-601 and the 8 MMBtu/hr H-602, and full compliance is scheduled by 1/1/14. No changes to these heaters are proposed.

Each unit being modified in this project will comply with the Staged Enhanced Schedule initial limit of Rule 4320, Table 1.D.2(b) (9 ppmv NO_x at 3% O₂). No other changes are proposed. See the current operating permits in Appendix A.

SJR is a Title V facility. SJR received their Title V permit on February 7, 2002. These modifications can be classified as Title V minor modifications pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authorities to Construct. SJR must apply to administratively amend their Title V permit prior to operating the equipment.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4305	Boilers, Steam Generators and Process Heaters – Phase II (8/21/03)
Rule 4306	Boilers, Steam Generators and Process Heaters – Phase III (10/16/08)
Rule 4320	Advanced Emissions Reduction Options for Boilers, Steam Generators and Process Heaters Greater Than 5.0 MMBtu/hr (10/16/08)
Rule 4351	Boilers, Steam Generators, and Process Heaters – Phase I (08/21/03)
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice
California Environmental Quality Act (CEQA)	

III. Project Location

The facility is located at the corner of Shell Street and Standard Street in Bakersfield. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

The boilers and heaters provide process heat for the refining of crude oil.

V. Equipment Listing

Pre-Project Equipment Descriptions

S-36-1-13: 79.2 MMBTU/HR ATMOSPHERIC/VACUUM CRUDE UNIT #4 WITH PREFLASH COLUMN, FRACTIONATOR, VACUUM DISTILLATION COLUMN WITH MECHANICAL VACUUM PRODUCING SYSTEM, 27 MMBTU/HR GAS/OIL/WASTE GAS FIRED NATURAL DRAFT VACUUM HEATER #VH-4 WITH THREE ZEECO CLSF 11 LOW NOX BURNERS AND 52.2 MMBTU/HR GAS/OIL FIRED NATURAL DRAFT HEATER #4 WITH ZEECO MODEL CLSF LOW NOX BURNERS

- S-36-41-16: 31.25 MMBTU/HR FORCED DRAFT WICKES BOILER WITH NORTH AMERICAN MODEL 6131-FC2 NATURAL GAS/OIL-FIRED LOW NOX BURNER WITH FGR
- S-36-51-14: 103.4 MMBTU/HR DIESEL TREATING UNIT WITH SULFUR RECOVERY UNIT AND SAFETY FLARE

ATC Equipment Descriptions

- S-36-1-16: MODIFICATION OF 79.2 MMBTU/HR ATMOSPHERIC/VACUUM CRUDE UNIT #4 WITH PREFLASH COLUMN, FRACTIONATOR, VACUUM DISTILLATION COLUMN WITH MECHANICAL VACUUM PRODUCING SYSTEM, 27 MMBTU/HR GAS/OIL/WASTE GAS FIRED NATURAL DRAFT VACUUM HEATER #VH-4 WITH THREE ZEECO CLSF 11 LOW NOX BURNERS AND 52.2 MMBTU/HR GAS/OIL FIRED NATURAL DRAFT HEATER #4 WITH ZEECO MODEL CLSF LOW NOX BURNERS: INSTALL SCR AND 0.9 MMBTU/HR REHEAT BURNER ON VACUUM HEATER #VH-4 FOR RULE 4320 COMPLIANCE AND REMOVE OIL-FIRING PROVISIONS FROM HEATER #VH-4
- S-36-41-18: MODIFICATION OF 31.25 MMBTU/HR FORCED DRAFT WICKES BOILER WITH NORTH AMERICAN MODEL 6131-FC2 NATURAL GAS/OIL-FIRED LOW NOX BURNER WITH FGR: INSTALL SCR FOR RULE 4320 COMPLIANCE AND REMOVE OIL-FIRING PROVISIONS
- S-36-51-19: MODIFICATION OF 103.4 MMBTU/HR DIESEL TREATING UNIT WITH SULFUR RECOVERY UNIT, CAUSTIC SCRUBBER, AND SAFETY FLARE: INSTALL SCR ON H-101 FOR RULE 4320 COMPLIANCE AND REMOVE OIL-FIRING PROVISIONS

Post-project Equipment Descriptions

- S-36-1-16: 79.2 MMBTU/HR ATMOSPHERIC/VACUUM CRUDE UNIT #4 WITH PREFLASH COLUMN, FRACTIONATOR, VACUUM DISTILLATION COLUMN WITH MECHANICAL VACUUM PRODUCING SYSTEM, 27 MMBTU/HR GAS AND WASTE GAS FIRED NATURAL DRAFT VACUUM HEATER #VH-4 WITH THREE ZEECO CLSF 11 LOW NOX BURNERS AND SCR (INCLUDING ONE 0.9 MMBTU/HR REHEAT BURNER), AND ONE 52.2 MMBTU/HR GAS-FIRED NATURAL DRAFT HEATER #4 WITH ZEECO MODEL CLSF LOW NOX BURNERS
- S-36-41-18: 31.25 MMBTU/HR FORCED DRAFT WICKES BOILER WITH NORTH AMERICAN MODEL 6131-FC2 NATURAL GAS-FIRED LOW NOX BURNER WITH FGR AND SCR
- S-36-51-19: 103.4 MMBTU/HR DIESEL TREATING UNIT WITH SULFUR RECOVERY UNIT, CAUSTIC SCRUBBER, AND SAFETY FLARE

VI. Emission Control Technology Evaluation

NO_x is the pollutant of concern with natural gas-fired heaters and boilers.

NO_x formation is either due to thermal fixation of atmospheric nitrogen in the combustion air during the combustion process (thermal NO_x) or due to the conversion of chemically bound nitrogen in the fuel (fuel NO_x). Due to the low fuel nitrogen content of natural gas, nearly all NO_x emissions from natural gas-fired boilers are thermal NO_x. Formation of thermal NO_x is affected by four furnace zone factors: (1) nitrogen concentration, (2) oxygen concentration, (3) peak temperature, and (4) time of exposure at peak temperature.

The low-NO_x burner is designed to operate at a lower peak temperature, keeping thermal NO_x production to a minimum.

The SCR system injects ammonia upstream of a NO_x reduction catalyst. In the catalyst section, the ammonia, oxygen and NO_x react to form nitrogen gas (N₂), and water (H₂O). The amount of ammonia which is injected is directly dependent on the concentration of NO_x in the exhaust. Slightly more ammonia than is theoretically required is injected in order to allow for incomplete mixing and non-uniform flow. A certain amount of ammonia will not be used in the reaction and is emitted as "ammonia slip" with the stack gas, at a proposed maximum amount of 10 ppmv.

VII. General Calculations

A. Assumptions

- The maximum operating schedule is 24 hr/day, 365 day/yr (current permits)
- Maximum Heat Inputs are taken from the current permits.
- Oil firing has been eliminated for each unit fitted with SCR (Applicant)
- EPA F-factor for natural gas is 8,578 dscf/MMBtu (40 CFR 60, Appendix B)
- Molar Specific Volume of a gas @ 60 degrees F is 379.5 ft³/lb-mol
- Natural gas heating value = 1,000 Btu/scf (District Policy APR 1720)
- Oil heating value = 140,000 Btu/gallon (AP-42, Section 1.3)
- All pre-project emission factors for the emissions units are taken from the current permits
- Pre-project emissions for the permit units are taken from the projects indicated below
- The emission factors for all the burners that are not being equipped with SCR will not change
- The post-project natural gas-firing emission factors for SO_x, PM₁₀, CO and VOC will not change
- The post-project emission factors for NO_x are 9 ppmv for all burners being equipped with SCR (Applicant)
- Ammonia slip is 10 ppmv @ 3% O₂ (Applicant)

B. Emission Factors

Ammonia Slip

The ammonia slip is calculated strictly for the purpose of health risk analysis (See Rule 4102 *Nuisance* below), and is not included in the potential emissions for this project. The emission factor for ammonia slip (NH₃) is calculated as follows:

$$\frac{10 \text{ parts}}{\text{million}} \times \frac{8,578 \text{ dscf}}{\text{MMBtu}} \times \frac{\text{lb} \cdot \text{mol}}{379.5 \text{ ft}^3} \times \frac{17 \text{ lb} \cdot \text{NH}_3}{\text{lb} \cdot \text{mole}} \times \frac{20.9}{20.9 - 3} = 0.0045 \frac{\text{lb} \cdot \text{NH}_3}{\text{MMBtu}}$$

1. Pre-project Emission Factors

A. S-36-1-13 contains two heaters.

1. 52.2 MMBtu/hr Crude Oil Heater #4

The pre-project emissions for the Crude Oil Heater #4 are taken from the current Permit (S-36-1-13) and are converted into lb/day and lb/year in Appendix B. The results are posted in the following table.

52.2 MMBtu/hr Crude Heater #4			
	lb/day	lb/year	Source
NO _x	269.4	18,480	Appendix B
SO _x	1540.9	15,140	Appendix B
PM ₁₀	104.0	2,720	Appendix B
CO	390.9	135,355	Appendix B
VOC	12.5	4,550	Appendix B

2. 27 MMBtu/hr Draft Vacuum Heater #VH-4

The pre-project emissions for the Draft Vacuum Heater #VH-4 are taken from the current Permit (S-36-1-13) and are converted into lb/day and lb/year in Appendix B. The results are posted in the following table.

27.0 MMBtu/hr Draft Vacuum Heater #VH-4			
	lb/day	lb/year	Source
NO _x	139.3	9,559	Appendix B
SO _x	797.0	7,849	Appendix B
PM ₁₀	53.8	1,407	Appendix B
CO	202.2	70,011	Appendix B
VOC	5.2	1,777	Appendix B

B. S-36-41 contains one 31.25 MMBtu/hr Wickes Boiler

The emissions for the Wickes Boiler include both oil and gas-firing. The oil-firing provisions are being eliminated. The highest case daily and annual emissions were determined in Project 1055248 based on combinations of gas and oil firing. The highest case emission factors are presented in lb/day and lb/year in the following table.

31.25 MMBtu/hr Wickes Boiler			
	lb/day	lb/year	Source
NO _x	39.0	12,309	Project 1055248
SO _x	2.1	780*	Project 1055248
PM ₁₀	17.3	4,458	Project 1055248
CO	234	56,694**	Calculated below
VOC	4.1	1,506	Project 1055248

*The current permit listed the annual SO_x emission limit as 383 lb/year. This was a misprint. The actual annual emissions for SO_x is 0.00285 lb/MMBtu x 31.23 MMBtu/hr x 8,760 hr/year = 780 lb/year.

**The currently permitted emissions for CO are slightly high at 80,821 lb/year (Emission Profile) and slightly low in the EE at 20,262. The true PE1 for CO is calculated below, assuming the HHV for fuel oil is 140,000 lb/gallon, the emission limit of 400 ppmv CO @ 3% O₂ is 0.312 lb/MMBtu, and the emission limit for gas-firing of 100 ppmv CO @ 3% O₂ is 0.074 lb/MMBtu.

The unit was authorized up to 1,093,500 gallons per year, or 4,899 hours (153,094 MMBtu).

$$\frac{153,094 \text{ MMBtu}}{\text{year}} \times \frac{0.312 \text{ lb CO}}{\text{MMBtu}} + \frac{120,656 \text{ MMBtu}}{\text{year}} \times \frac{0.074 \text{ lb CO}}{\text{MMBtu}} = 56,694 \frac{\text{lb CO}}{\text{year}}$$

C. S-36-51 contains 5 heaters, a safety flare, a thermal oxidizer, a caustic scrubber and fugitive components. The pre-project emission factors are taken from Project 1085235 and are presented in lb/day and lb/year in the following tables.

1. 47.1 MMBtu/hr Furnace #H-101

47.1 MMBtu/hr Furnace #H-101			
	lb/day	lb/year	Source
NO _x	40.7	14,853	Project 1085235
SO _x	3.8	1,403	Project 1085235
PM ₁₀	15.5	5,653	Project 1085235
CO	17	6,189	Project 1085235
VOC	4.5	1,650	Project 1085235

2. 7.4 MMBtu/hr Heater #H-201

7.4 MMBtu/hr Heater #H-201			
	lb/day	lb/year	Source
NO _x	6.3	2,301	Project 1085235
SO _x	3.7	1,369	Project 1085235
PM ₁₀	2.4	893	Project 1085235
CO	18.0	6,583	Project 1085235
VOC	0.7	261	Project 1085235

3. 17 MMBtu/hr Heater #H-501

30.0 MMBtu/hr Heater #H-501			
	lb/day	lb/year	Source
NO _x	14.7	5,361	Project 1085235
SO _x	1.4	3,127	Project 1085235
PM ₁₀	5.6	2,040	Project 1085235
CO	6.1	15,041	Project 1085235
VOC	1.6	596	Project 1085235

4. 8.4 MMBtu/hr Heater #H-601

8.4 MMBtu/hr Heater #H-601			
	lb/day	lb/year	Source
NO _x	7.3	2,649	Project 1085235
SO _x	4.2	1,545	Project 1085235
PM ₁₀	2.8	1,008	Project 1085235
CO	59.5	21,707	Project 1085235
VOC	0.8	294	Project 1085235

5. 8 MMBtu/hr Heater #H-602

8 MMBtu/hr Heater #H-602			
	lb/day	lb/year	Source
NO _x	6.9	2,523	Project 1085235
SO _x	4	1,472	Project 1085235
PM ₁₀	2.6	960	Project 1085235
CO	19.4	7,078	Project 1085235
VOC	0.8	280	Project 1085235

6. Flare

Flare			
	lb/day	lb/year	Source
NO _x	6.8	2,482	Project 1085235
SO _x	4	38,289	Project 1085235
PM ₁₀	2.6	986	Project 1085235
CO	19.4	25,660	Project 1085235
VOC	0.8	2,701	Project 1085235

7. Fugitives

Fugitive Emissions			
	lb/day	lb/year	Source
VOC	26.9	9,815	Project 1085235

8. Thermal Oxidizer

Thermal Oxidizer			
	lb/day	lb/year	Source
SO _x	108	39,438	Project 1085235

9. Caustic Scrubber

Fugitive Emissions			
	lb/day	lb/year	Source
VOC	1.1	402	Project 1085235

2. Post-Project Emission Factors

The post project emission factors are presented in the tables below.

A. S-36-1-16: 27 MMBtu/hr Heater #VH-4

27 MMBtu/hr Heater #VH-4			
	ppm	lb/MMBtu	Source
NO _x	9 ppmv @ 3% O ₂	0.011 lb/MMBtu	Applicant
SO _x	-	0.00285 lb/MMBtu	District Policy APR 1720
PM ₁₀	-	0.004 lb/MMBtu	PTO S-36-1-13
CO	400 ppmv @ 3% O ₂	0.296 lb/MMBtu	PTO S-36-1-13
VOC	17.8 ppmv @ 3% O ₂	0.0075 lb/MMBtu	PTO S-36-1-13
NH ₃	10 ppmv @ 3% O ₂	0.0045 lb/MMBtu	Applicant/Calculated

B. S-36-41-18: 31.25 MMBtu/hr Wickes Boiler

31.25 MMBtu/hr Wickes Boiler			
	ppm	lb/MMBtu	Source
NO _x	9 ppmv @ 3% O ₂	0.011 lb/MMBtu	Applicant
SO _x	-	0.00285 lb/MMBtu	District Policy APR 1720
PM ₁₀	-	0.0076 lb/MMBtu	PTO S-36-41-16
CO	100 ppmv @ 3% O ₂	0.074 lb/MMBtu	PTO S-36-41-16
VOC	13 ppmv @ 3% O ₂	0.0055 lb/MMBtu	PTO S-36-41-16
NH ₃	10 ppmv @ 3% O ₂	0.0045 lb/MMBtu	Applicant/Calculated

C. S-36-51-14: 47.1 MMBtu/hr Heater #H-101

47.1 MMBtu/hr Heater #H-101			
	ppm	lb/MMBtu	Source
NO _x	9 ppmv @ 3% O ₂	0.011 lb/MMBtu	Applicant
SO _x	-	0.0034 lb/MMBtu	PTO S-36-41-16*
PM ₁₀	-	0.0137 lb/MMBtu	PTO S-36-41-16
CO	20 ppmv @ 3% O ₂	0.015 lb/MMBtu	PTO S-36-41-16
VOC	9.5 ppmv @ 3% O ₂	0.0040 lb/MMBtu	PYO S-36-41-16
NH ₃	10 ppmv @ 3% O ₂	0.0045 lb/MMBtu	Applicant/Calculated

*This figure represents a mixture of PSA offgas (249 MMBtu/scf at 0.0123 grains-S/scf) and PUC natural gas (1,000 Btu/scf at 0.01 grains-S/scf). The 0.123 grain-S/scf of PSA gas will remain on the permit.

C. Calculations

1. Pre-Project Potential to Emit (PE1)

The daily and annual PE1 is calculated below for each permit unit.

A. S-36-1-13

Daily PE1 S-36-1-13 (lb/day)					
Unit	NO _x	SO _x	PM ₁₀	CO	VOC
Crude Heater #4	269.4	1,540.9	104.0	390.9	12.5
Vacuum Heater #VH-4	139.3	797.0	53.8	202.2	5.2
Total	408.7	2,337.9	157.8	593.1	17.7

Annual PE1 S-36-1-13 (lb/year)					
Unit	NO _x	SO _x	PM ₁₀	CO	VOC
Crude Heater #4	18,480	15,140	2,720	135,355	4,550
Vacuum Heater #VH-4	9,559	7,849	1,407	70,011	1,777
Total	28,039	22,989	4,127	205,366	6,327

B. S-36-41-16

Daily PE1 S-36-41-16 (lb/day)					
Unit	NO _x	SO _x	PM ₁₀	CO	VOC
Wickes Boiler	39.0	2.1	17.3	234	4.1
Total	39	2.1	17.3	234	4.1

Annual PE1 S-36-41-16 (lb/year)					
Unit	NO _x	SO _x	PM ₁₀	CO	VOC
Wickes Boiler	12,309	780	4,458	80,921	1,506
Total	12,309	780	4,458	80,921	1,506

C. S-36-51-14

Daily PE1 S-36-51-14 (lb/day)					
Unit	NO _x	SO _x	PM ₁₀	CO	VOC
Heater #H-101	40.7	3.8	15.5	17	4.5
Heater #H-201	6.3	3.7	2.4	18.0	0.7
Heater #H-501	14.7	1.4	5.6	6.1	1.6
Heater #H-601	7.3	4.2	2.8	59.5	0.8
Heater #H-602	6.9	4.0	2.6	19.4	0.8
Flare	6.8	104.9	2.7	70.3	7.4
Fugitives	0	0	0	0	26.9
Thermal Oxidizer	0	108	0	0	0
Caustic Scrubber	0	0	0	0	1.1
Total	82.7	230	31.6	190.3	43.8

Annual PE1 S-36-51-14 (lb/year)					
Unit	NO _x	SO _x	PM ₁₀	CO	VOC
Heater #H-101	14,853	1,403	5,653	6,189	1,650
Heater #H-201	2,301	1,369	893	6,583	261
Heater #H-501	5,361	3,127	2,040	15,041	596
Heater #H-601	2,649	1,545	1,008	21,707	294
Heater #H-602	2,523	1,472	960	7,078	280
Flare	2,482	38,289	986	25,660	2,701
Fugitives	0	0	0	0	9,815
Thermal Oxidizer	0	39,438	0	0	0
Caustic Scrubber	0	0	0	0	402
Total	30,169	86,643	11,540	82,258	15,999

2. Post Project Potential to Emit (PE2) and Increase in Permitted Emissions (IPE)

The PE2 (including ammonia slip) and the IPE are calculated for each emissions unit below. Then the PE2 is calculated for the entire permit unit.

- a) Permit Unit S-36-1-16, Emissions Unit 27 MMBtu/hr Vacuum Heater #VH-4,
- b) Permit Unit S-36-41-18, Emissions Unit 31.25 MMBtu/hr Wickes Boiler,
- c) Permit unit S-36-51-19, Emissions Unit 47.1 MMBtu/hr Heater #H-101.

- a) S-36-1-16, 27 MMBtu/hr Vacuum Heater #VH-4

Daily PE2 for S-36-1-16, Heater #VH-4				
Pollutant	Emission Factors (lb/MMBtu)	Rating (MMBtu/hr)	Daily Hours of Operation	PE2 Total (lb/day)
NO _x	0.011	27	24	7.1
SO _x	0.00285	27	24	1.8
PM ₁₀	0.004	27	24	2.6
CO	0.296	27	24	191.8
VOC	0.0075	27	24	4.9
NH ₃	0.0045	27	24	2.9

Annual PE2 for S-36-1-16, Heater #VH-4				
Pollutant	Emission Factors (lb/MMBtu)	Rating (MMBtu/hr)	Annual Hours of Operation	PE2 Total (lb/year)
NO _x	0.011	27	8,760	2,602
SO _x	0.00285	27	8,760	674
PM ₁₀	0.004	27	8,760	946
CO	0.296	27	8,760	70,010
VOC	0.0075	27	8,760	1,774
NH ₃	0.0045	27	8,760	1,064

The total PE2 for permit S-36-1-16 is calculated as follows.

Daily PE2 S-36-1-16 (lb/day)					
Unit	NO _x	SO _x	PM ₁₀	CO	VOC
Crude Heater #4	269.4	3.6	104.0	390.9	12.5
Vacuum Heater #VH-4	7.1	1.8	2.6	191.8	4.9
Total PE2	276.5	5.4	106.6	582.7	17.4

Annual PE2 S-36-1-16 (lb/year)					
Unit	NO _x	SO _x	PM ₁₀	CO	VOC
Crude Heater #4	18,480	1,288	2,720	135,355	4,550
Vacuum Heater #VH-4	2,602	674	946	70,010	1,774
Total PE2	21,082	1,962	3,666	205,365	6,324

The IPE for unit S-36-1-16 is calculated by subtracting PE2-PE1 as follows.

IPE S-36-1-16 (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
PE2	21,082	1,962	3,666	205,365	6,324
PE1	28,039	22,989	4,127	205,366	6,327
IPE	-6,957	-21,027	-461	-1	-3

b) S-36-41-18, 31.25 MMBtu/hr Wickes Boiler (emissions unit)

Daily PE2 for S-36-41-18, Wickes Boiler				
Pollutant	Emission Factors (lb/MMBtu)	Rating (MMBtu/hr)	Daily Hours of Operation	PE2 Total (lb/day)
NO _x	0.011	31.25	24	8.3
SO _x	0.00285	31.25	24	2.1
PM ₁₀	0.0076	31.25	24	5.7
CO	0.074	31.25	24	55.5
VOC	0.0055	31.25	24	4.1
NH ₃	0.0045	31.25	24	3.4

Annual PE2 for S-36-41-18, Wickes Boiler				
Pollutant	Emission Factors (lb/MMBtu)	Rating (MMBtu/hr)	Annual Hours of Operation	PE2 Total (lb/year)
NO _x	0.011	31.25	8,760	3,011
SO _x	0.00285	31.25	8,760	780
PM ₁₀	0.0076	31.25	8,760	2,081
CO	0.074	31.25	8,760	20,258
VOC	0.0055	31.25	8,760	1,506
NH ₃	0.0045	31.25	8,760	1,232

The total PE2 is presented as follows (permit unit).

Daily PE2 S-36-41-18 (lb/day)					
Unit	NO _x	SO _x	PM ₁₀	CO	VOC
Wickes Boiler	8.3	2.1	5.7	55.5	4.1
Total PE2	8.3	2.1	5.7	55.5	4.1

Annual PE2 S-36-41-18 (lb/year)					
Unit	NO _x	SO _x	PM ₁₀	CO	VOC
Wickes Boiler	3,011	780	2,081	20,258	1,506
Total PE2	3,011	780	2,081	20,258	1,506

The IPE for S-36-41-18 is calculated by subtracting PE2-PE1 as follows.

IPE S-36-41-18 (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
PE2	3,011	780	2,081	20,258	1,506
PE1	12,309	780	4,458	56,694	1,506
IPE	-9,298	0	-2,377	-36,436	0

c) S-36-51-19, 47.1 MMBtu/hr Heater #H-101 (emissions unit)

Daily PE2 for S-36-51-19, Heater #H-101				
Pollutant	Emission Factors (lb/MMBtu)	Rating (MMBtu/hr)	Daily Hours of Operation	PE2 Total (lb/day)
NO _x	0.011	47.1	24	12.4
SO _x	0.0034	47.1	24	3.8
PM ₁₀	0.0137	47.1	24	15.5
CO	0.015	47.1	24	17.0
VOC	0.0040	47.1	24	4.5
NH ₃	0.0045	47.1	24	5.1

Annual PE2 for S-36-51-19, Heater #H-101				
Pollutant	Emission Factors (lb/MMBtu)	Rating (MMBtu/hr)	Annual Hours of Operation	PE2 Total (lb/year)
NO _x	0.011	47.1	8,760	4,539
SO _x	0.0034	47.1	8,760	1,403
PM ₁₀	0.0137	47.1	8,760	5,653
CO	0.015	47.1	8,760	6,189
VOC	0.0040	47.1	8,760	1,650
NH ₃	0.0045	47.1	8,760	1,857

The total PE2 for permit unit S-36-51-19 is calculated as follows.

Daily PE2 S-36-51-19 (lb/day)					
Unit	NO _x	SO _x	PM ₁₀	CO	VOC
Heater #H-101	12.4	3.8	15.5	17	4.5
Heater #H-201	6.3	3.7	2.4	18.0	0.7
Heater #H-501	14.7	1.4	5.6	6.1	1.6
Heater #H-601	7.3	4.2	2.8	59.5	0.8
Heater #H-602	6.9	4.0	2.6	19.4	0.8
Flare	6.8	104.9	2.7	70.3	7.4
Fugitives	0	0	0	0	26.9
Thermal Oxidizer	0	108	0	0	0
Caustic Scrubber	0	0	0	0	1.1
Total PE2	54.4	230	31.6	190.3	43.8

Annual PE2 S-36-51-19 (lb/year)					
Unit	NO _x	SO _x	PM ₁₀	CO	VOC
Heater #H-101	4,539	1,403	5,653	6,189	1,650
Heater #H-201	2,301	1,369	893	6,583	261
Heater #H-501	5,361	3,127	2,040	15,041	596
Heater #H-601	2,649	1,545	1,008	21,707	294
Heater #H-602	2,523	1,472	960	7,078	280
Flare	2,482	38,289	986	25,660	2,701
Fugitives	0	0	0	0	9,815
Thermal Oxidizer	0	39,438	0	0	0
Caustic Scrubber	0	0	0	0	402
Total PE2	19,855	86,643	11,540	82,258	15,999

The IPE for S-36-51-19 is calculated by subtracting PE2-PE1 as follows.

IPE S-36-51-19 (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
PE2	19,855	86,643	11,540	82,258	15,999
PE1	30,169	86,643	11,540	82,258	15,999
IPE	-10,314	0	0	0	0

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

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 facility holds Three ERCs. The SSPE1 is determined by taking the annual emissions from the current permits and is calculated in the following table.

The SSPE was accurately calculated during project 1085235. This figure is added to the Stationary Source Increase in Permitted Emissions (SSIPE) associated with every project since then, and the value of the ERCs, to determine the SSPE1 for this project.

SSPE1						
Project	Data	NO _x	SO _x	PM ₁₀	CO	VOC
1085235	SSPE2	133,261	125,543	42,802	634,011	120,796
1102734	SSIPE	0	0	0	0	0
1103459	SSIPE	537	54	63	2921	514
ERC	S-3547-5	0	157	0	0	0
ERC	S-3549-2	806	0	0	0	0
ERC	S-3551-4	0	0	0	0	771
SSPE1		134,604	125,754	42,865	636,932	122,081

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

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.

The SSPE2 is determined by adding the SSPE1 to the IPE for each permit unit (calculated above) in the following table.

SSPE2					
Data	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE1	134,604	125,754	42,865	636,932	122,081
IPE S-36-1-16	-6,957	-21,027	-461	-1	-3
IPE S-36-41-18	-9,298	0	-2,377	-36,436	0
IPE S-36-51-19	-10,314	0	0	0	0
SSPE2	108,035	104,727	40,027	600,495	122,078

5. Major Source Determination

Major Source is a stationary source with a SSPE2, equal to or exceeding one or more of the following threshold values.

The SSPE1 and SSPE2 are compared to the major source thresholds as follows.

Major Source Determination					
Pollutant	SSPE1 (lb/yr)	SSPE2 (lb/yr)	Major Source Threshold (lb/yr)	Existing Major Source?	Post Project Major Source?
NO _x	136,604	108,035	20,000	Yes	Yes
SO _x	125,754	104,727	140,000	No	No
PM ₁₀	42,865	40,727	140,000	No	No
CO	636,932	600,495	200,000	Yes	Yes
VOC	122,081	122,078	20,000	Yes	Yes

As shown in the table above, the facility is an existing major source for NO_x, CO and VOC. The facility is not becoming a major source for any other pollutants.

Since this is not a major source for PM₁₀, it is not a major source for PM_{2.5}.

6. Baseline Emissions (BE)

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

Since this project includes only the installation of SCR and the removal of oil firing, both of which are for compliance with District Rule 4320, this project is exempt from offsets. Therefore the BE calculations are not necessary.

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."

This facility is a major source for NO_x, CO and VOC. Therefore the project's PE2 is compared to the SB 288 Major Modification Thresholds in order to determine if the SB 288 Major Modification calculation is required.

This project involves the retrofitting of three heaters with SCR for Rule 4320 compliance. The project's PE2 for NO_x and VOC is calculated in the following table.

Project's PE2			
Emissions Unit	NO _x (lb/year)	CO (lb/year)	VOC (lb/year)
S-36-1-16, Heater VH-4	2,602	70,010	1,774
S-36-41-18, Wickes Boiler	3,011	20,258	1,506
S-36-51-19 Heater H-101	4,539	6,189	1,650
Project PE2	10,152	96,457	4,930

The project's PE2 is compared to the SB288 Major Modification Thresholds in the following table.

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO _x	10,152	50,000	No
CO	96,457	N/A*	No
VOC	4,930	50,000	No

*There is no threshold for CO emissions for SB288 Major Modifications.

Since none of the SB 288 project PE2 values are exceeded, this project does not constitute an SB 288 Major Modification.

8. Federal Major Modification

Pursuant to Rule 2201 Section 3.18, the calculation procedure in 40 CFR 51.165(a)(2)(ii) shall be used to determine if a project is a federal major modification:

This calculation procedure states that if the sum of the differences between the projected actual emissions and the baseline actual emissions (for existing emission units) or the sum of the potentials to emit (for new emission units) is significant, i.e. greater than the values listed in Rule 2201, Table 3-1, the project is a federal major modification.

For existing emission units where there is no increase in design capacity the projected actual emissions (PAE) are equal to the emission rate at which the unit is projected to emit in any one year selected by the operator within 5 years after the unit resumes normal operation (10 years for existing units with an increase in design capacity). This projection is made by the operator and must be based on all relevant information, including expected business activity.

For emission units (other than electric utility steam generating units), the baseline actual emissions (BAE) are calculated based on any 24 month period selected by the operator within the previous 10 year period. These emissions must not include any non-compliant operation.

In calculating the emission increase (PAE - BAE), the portion of the post-project emissions that the unit could have actually emitted (during the baseline period), and that are unrelated to the current project, and emissions due to increased product demand, are both excluded.

For rule compliance projects (this project), the difference between the PAE and the BAE (excluding emissions that the unit could have emitted during the baseline period) for pollutants targeted by the prohibitory rule will be a negative value.

Additionally, it can reasonably be concluded that the difference between the PAE and the BAE (excluding emissions that the unit could have emitted during the baseline period) for non-targeted pollutants will be zero as any increase in actual emissions (after the project) would be due to increases in business activity and not due to the modification itself. Such emission increases are excluded when calculating the emission increase.

Therefore, this rule-compliance project will not result in a significant emission increase and does not trigger a federal major modification.

9. Quarterly Net Emissions Change (QNEC)

The QNEC is used to complete the emission profile screen for the District's PAS database. The QNEC for each pollutant is calculated as follows.

$$QNEC = \frac{(PE2 - PE1) \frac{lb}{yr}}{4 \frac{Quarters}{yr}}, \text{ where}$$

QNEC = Quarterly Net Emissions Change for each emissions unit in lb/qtr

		QNEC		
Unit	Pollutant	PE1 (lb/yr)	PE2 (lb/yr)	QNEC (lb/qtr)
S-36-1	NO _x	28,039	21,082	-1,739
	SO _x	22,989	1,962	-5,257
	PM ₁₀	4,127	3,666	- 115
	CO	205,366	205,365	0
	VOC	6,327	6,324	- 1
S-36-41	NO _x	12,309	3,011	-2,325
	SO _x	780	780	0
	PM ₁₀	4,458	2,081	- 594
	CO	56,694	20,258	-9,109
	VOC	1,506	1,506	0
S-36-51	NO _x	30,169	19,855	-2,579
	SO _x	86,643	86,643	0
	PM ₁₀	11,540	11,540	0
	CO	82,258	82,258	0
	VOC	15,999	15,999	0

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following*:

- 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 AIFE exceeding two pounds per day, and/or
 - d. Any new or modified emissions unit, in a stationary source project, which results in an SB288 Major Modification or a Federal Major Modification.
- *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.

According to Section 4.3.2, BACT shall not be required for existing facilities, for the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, as approved by the APCO, provided:

- There shall be no increase in the physical or operational design of the existing facility, except for those changes to the design needed for the installation or modification of the emission control technique itself;
- There shall be no increase in the permitted rating or permitted operating schedule of the permitted unit;
- There shall be no increase in emissions from the stationary source that will cause or contribute to any violation of a National Ambient Air Quality Standard, Prevention of Significant Deterioration increment, or Air Quality Related Value in Class I areas,
- The project shall not result in an increase in permitted emissions or potential to emit of more than 25 tons per year of NO_x, or 25 tons per year of VOC, or 15 tons per year of SO_x, or 15 tons per year of PM-10, or 50 tons per year of CO, and
- The project shall not constitute a federal major modification.

The heaters are being modified strictly for compliance with Rule 4320. Since the conditions above are satisfied, BACT is not required for this project.

2. BACT Guideline

Since BACT is not triggered for this project, no BACT Guideline will be presented.

B. Offsets

1. Offset Applicability

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

According to Section 4.6.8, the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, as approved by the APCO, shall be exempt from offset requirements for all air pollutants provided all of the following conditions are met:

- There shall be no increase in the physical or operational design of the existing facility, except for those changes to the design needed for the installation or modification of the emission control technique itself;
- There shall be no increase in the permitted rating or permitted operating schedule of the permitted unit;
- There shall be no increase in emissions from the stationary source that will cause or contribute to any violation of a National Ambient Air Quality Standard, Prevention of Significant Deterioration increment, or Air Quality Related Value in Class I areas; and
- The project shall not result in an increase in permitted emissions or potential to emit of more than 25 tons per year of NO_x, or 25 tons per year of VOC, or 15 tons per year of SO_x, or 15 tons per year of PM₁₀, or 50 tons per year of CO.

Since all of the conditions above are satisfied, Offsets are not required for this project.

2. Quantity of Offsets Required

Since this project is exempt from offsets, the quantity of offsets required is zero.

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications
- b. New emissions units with a PE > 100 lb/day
- c. Modifications that increase the SSPE across the offset threshold for any pollutant
- d. New Stationary Sources with an SSPE2 exceeding any emissions offset threshold
- e. Any Permitting Action resulting in a SSIPE > 20,000 lb/yr for any pollutant.

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

Public Notification is required for New Major Sources, Federal Major Modifications, and SB 288 Major Modifications. Since this project includes neither of these, public noticing is not required for this purpose.

b. New emissions unit with a PE > 100 lb/day

Public notification is required for projects for any new emissions unit with emissions exceeding 100 lb/day. Since there are no new emissions units in this project with emissions greater than 100 lb/day, public noticing is not required for this purpose.

c. Modifications Exceeding any Offset Thresholds

Public notification is required for projects that raise the SSPE above the offset threshold for any pollutant. As seen in the following table, the facility's SSPE1 and SSPE2 all remain below the offset thresholds, and public notification is not required.

Public Notice Offset Threshold Values				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold (lb/year)	SSPE Crosses the Offset Threshold?
NO _x	136,604	106,617	20,000	No
SO _x	125,754	104,742	54,750	No
PM ₁₀	42,865	39,782	29,200	No
CO	636,932	600,035	200,000	No
VOC	122,081	122,078	20,000	No

d. New Stationary Sources Exceeding any Offset Thresholds

Public notification is required for any new stationary source with an SSPE2 exceeding any offset threshold. Since this is not a new stationary source, public noticing is not required for this purpose.

e. 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, where the SSIPE is calculated as SSPE2 - SSPE1.

The SSIPE is calculated and compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	136,604	106,617	-29,987	20,000 lb/year	No
SO _x	125,754	104,742	-21,012	20,000 lb/year	No
PM ₁₀	42,865	39,782	-3,083	20,000 lb/year	No
CO	636,932	600,035	-36,897	20,000 lb/year	No
VOC	122,081	122,078	-3	20,000 lb/year	No

Since the SSIPE does not exceed 20,000 lb/year for any pollutants, public noticing is not required for this purpose.

2. Public Notice Action

Since public noticing is not required for this project, there will be no public noticing action.

D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required 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.

The following conditions are listed on the respective permits

S-36-1-16

- Vacuum Heater #VH-4 shall be fired on natural gas only. [District Rules 2201 and 4320]
- Natural gas combusted in crude heater #4 and the vacuum heater #VH-4 shall be of PUC quality. [District Rules 2201 and 4320]
- Vacuum Heater #VH-4 shall be equipped with a SCR system and a 0.9 MMBtu/hr reheat burner. The heater shall not be operated unless the SCR system is operating. [District Rule 2201]
- Emissions from 27 MMBtu/hr vacuum heater shall not exceed any of the following limits: 0.011 lb-NOx/MMBtu (9 ppmv @ 3% O₂), 0.00285 lb-SOx/MMBtu, 0.004 lb-PM10/MMBtu, 0.296 lb-CO/MMBtu (400 ppmv @ 3% O₂), or 0.0075 lb-VOC/MMBtu (17.8 ppmv @ 3% O₂). [District Rules 2201, 4305, 4306, 4320 and 4351]

The following conditions will be removed from S-36-1.

- Oil firing emissions from 27 MMBtu/hr vacuum heater shall not exceed any of the following: PM10: 11.56 lb/1000 gal; SOx (as SO₂): 172.7 lb/1000 gal; NOx (as NO₂): 0.215 lb/MM Btu; VOC: 1.12 lb/1000 gal; or CO : 400 ppmv @ 3% O₂. [District Rules 2201, 2520, 9.4.2, 4305 and 4306]
- NOx emissions when gas firing 27 MMBtu/hr vacuum heater shall not exceed 30 ppmv @ 3% O₂. [Stipulated Abatement Order S-00-40P, District Rules 2201, 2520, 9.4.2, 4305, 4306 and 4351]

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- The boiler shall be equipped with a SCR system. The boiler shall not be operated unless the SCR system is operating. [District Rule 2201]
- Emissions from the boiler shall not exceed any of the following limits: 0.011 lb-NOx/MMBtu (9 ppmv @ 3% O₂), 0.00285 lb-SOx/MMBtu, 0.0076 lb-PM10/MMBtu, 0.074 lb-CO/MMBtu (100 ppmv @ 3% O₂), 0.0055 lb-VOC/MMBtu (13 ppmv @ 3% O₂). [District Rules 2201, 4305, 4306, 4320 and 4351]

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- Heater H-101 shall be equipped with a SCR system. The heater shall not be operated unless the SCR system is operating. [District Rule 2201]
- Emissions from process heater H-101 shall not exceed any of the following limits: 0.011 lb-NOx/MMBtu (9 ppmv @ 3% O₂), 0.0034 lb-SOx/MMBtu, 0.0137 lb-PM₁₀/MMBtu, 0.015 lb-CO/MMBtu (20 ppmv @ 3% O₂), or 0.0040 lb-VOC/MMBtu (9.5 ppmv @ 3% O₂). [District Rules 2201, 4305, 4306, 4320 and 4351]

E. Compliance Assurance

1. Source Testing

The source testing requirements are discussed below under Rule 4320.

2. Monitoring

The standard monitoring requirements are discussed below under Rule 4320.

The applicant has proposed to monitor the stack concentration of ammonia with the following permit condition.

- The permittee shall monitor and record the stack concentration of NH₃ from the SCR unit at least once during each month. This monitoring shall be conducted utilizing Draeger tubes or a District-approved equivalent method at the time NO_x, CO and O₂ readings are taken. 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 one (1) day of restarting the unit unless monitoring has been performed within the last month. [District Rules 2201 and 4102]

3. Recordkeeping

The standard recordkeeping requirements are discussed below under Rule 4320. In addition, in order to ensure that the SCR systems are being properly utilized, the following condition is listed on each unit.

- Monthly records of the total amount of ammonia used by the SCR system shall be maintained. [District Rules 1070 and 2520, 9.4.1]

4. Reporting

The reporting requirements are discussed below under Rule 4320.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to Rule 2520, and has received their Title V Operating Permit. The proposed modifications constitute a Minor Modification to the Title V Permit.

In accordance with Rule 2520, the modifications:

1. Do not violate any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
 - a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
 - b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

The facility has applied for a COC. Therefore the facility must apply to modify their Title V permit with an administrative amendment (AA) prior to operating with the proposed modifications. The facility may construct/operate under the ATC upon submittal of the Title V AA application, and the following conditions are listed on the ATCs to ensure compliance.

- {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201]
- {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4]

Rule 4001 New Source Performance Standards (NSPS)

40 CFR 60.18 (Subpart A) – General Provisions (general control device requirements)

The flare listed on S-35-51 is an affected facility under 40 CFR 60 Subparts A and J. The flare is not being modified as part of this project. Therefore, continued compliance with the requirements of 40 CFR 60 Subparts A and J is expected.

40 CFR 60.40c (Subpart Dc) – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

NSPS Subpart Dc applies to steam-generating units greater than 10 MMBtu/hr, but less than or equal to 100 MMBtu/hr for which construction, modification, or reconstruction has commenced after June 9, 1989. The boilers/heaters at this facility were constructed prior to that date. The Code of Federal Regulations, Title 40, Part 60, Subpart A, "General Provisions" defines modification as resulting in an increase in emissions from an affected facility of any air pollutant or which a standard applies. This project does not result in an expected increase in

emissions. Therefore, this project is not considered a modification under NSPS and this rule does not apply.

40 CFR 60.100 (Subpart J) – Standards of Performance for Petroleum Refineries

The provisions of this subpart are applicable to fluid catalytic cracking unit catalyst regenerators, fuel gas combustion devices, and all Claus sulfur recovery units except Claus plants of 20 long tons per day or less.

SJR is not installing a fluid catalytic cracking unit or any equipment fired on refinery fuel gas. SJR is proposing to install SCR on three heaters for Rule 4320 compliance.

The flare listed on S-36-51 is an affected facility under 40 CFR 60 Subparts A and J, and is not being modified as part of this project. Therefore, continued compliance with the requirements of 40 CFR 60 Subparts A and J is expected.

40 CFR 60.590 (Subpart GGG) – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries

No equipment is being modified as part of this project that is associated with any components that can leak. Therefore, this subpart is not applicable to this project.

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

This rule incorporates NESHAPs from 40 CFR 61, Chapter 1.C and the NESHAPs from 40 CFR 63 Chapter 1.C, and applies to all sources of HAPs listed therein. The oil-firing capability is being removed from the modified units. No subparts of 40 CFR Part 61 or 40 CFR Part 63 apply to natural gas-fired boilers.

Rule 4101 Visible Emissions

Section 5.0 requires 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). Visible emissions are not expected to exceed Ringelmann 1 or 20% opacity, and the following condition will be listed on the permit to ensure compliance.

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

Rule 4102 Nuisance

Section 4.0 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of this process heater's operation. Therefore, compliance with this rule is expected and the following condition will remain on the permit to ensure compliance.

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

California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 - *Risk Management Policy for Permitting New and Modified Sources* requires the District to perform an analysis to determine the possible impact to the nearest resident or worksite for all projects including an increase in toxic emissions.

Since ammonia slip is expected from the SCR units, a risk management review (RMR) has been performed (See Appendix B). The RMR summary is shown below.

RMR Summary			
Categories	Ammonia Slips (Units 1-16, 41-18, & 51-19)	Project Totals	Facility Totals
Prioritization Score	1.08	1.08	>1
Acute Hazard Index	0.00	0.00	0.05
Chronic Hazard Index	0.01	0.01	0.03
Maximum Individual Cancer Risk	N/A*	N/A*	4.31E-06
T-BACT Required?	No		
Special Permit Conditions?	Yes		

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

- Ammonia slip from the SCR unit shall not exceed 10 ppmv @ 3% oxygen. [District Rule 4102]
- The exhaust stack of the SCR unit shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]

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.

The concentration of particulate matter in the exhaust can be calculated given the following data, based on the highest PM₁₀ emission factor of all of the units being modified.

F-Factor for Natural Gas: 8,578 dscf/MMBtu at 60 °F
 PM₁₀ Emission Factor: 0.0137 lb-PM₁₀/MMBtu
 Percentage of PM as PM₁₀ in Exhaust: 100%

$$\frac{\left(\frac{0.0137 \text{ lb} \cdot \text{PM}}{\text{MMBtu}} \times \frac{7,000 \text{ grain}}{\text{lb}} \right)}{\frac{8,578 \text{ ft}^3}{\text{MMBtu}} \times 1.17} = 0.0096 \frac{\text{grain} \cdot \text{PM}}{\text{ft}^3}$$

Since 0.0096 grain/dscf is less than 0.1 grain/dscf, compliance with District Rule 4201 is expected and the following condition will be listed on each permit to ensure compliance.

- {588} Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3]

Rule 4301 Fuel Burning Equipment

This rule specifies maximum emission rates in lb/hr for SO₂, NO₂, and combustion contaminants (defined as total PM in Rule 1020). This rule also limits combustion contaminants to ≤ 0.1 gr/scf. According to AP 42 (Table 1.4-2, footnote c), all PM emissions from natural gas and LPG combustion are less than 1 μm in diameter.

The following table compares the emissions from each modified unit with Rule 4301 limits.

Rule 4301 Limits				
Unit	Pollutant	Emissions (lb/hr)	Rule 4301 Limit (lb/hr)	Compliant?
S-36-1-16	NO ₂	0.3	140	Yes
Heater #VH-4	SO ₂	0.1	200	Yes
	Total PM	0.1	200	Yes
S-36-41-18	NO ₂	0.4	140	Yes
Wickes Boiler	SO ₂	0.1	200	Yes
	Total PM	0.2	200	Yes
S-36-51-19	NO ₂	0.5	140	Yes
Heater #H-101	SO ₂	.2	200	Yes
	Total PM	0.6	200	Yes

Since none of the Rule 4301 limits are exceeded, compliance with Rule 4301 is expected, and the relevant conditions will remain on each permit.

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

Rule 4305 applies to any gaseous or liquid fueled boiler, steam generator or process heater with a rated heat input greater than 5 MMBtu/hr. These units are subject to Rule 4305.

The units are subject to Rule 4306, *Boilers, Steam Generators and Process Heaters – Phase 3*.

Since the emissions limits and other requirements of Rule 4306 are equivalent or more stringent than Rule 4305 requirements, compliance with Rule 4306 will satisfy Rule 4305.

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

Rule 4306 applies to any gaseous or liquid fueled boiler, steam generator or process heater with a rated heat input greater than 5 MMBtu/hr. Therefore this unit is subject to Rule 4306.

This unit is also subject to Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators and Process Heaters Greater Than 5.0 MMBtu/hr*.

Since the emissions limits and other requirements of District Rule 4320 are equivalent or more stringent than District Rule 4305 and 4306 requirements, compliance with District Rule 4320 requirements will satisfy the requirements of District Rule 4306.

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

Each of the burners being connected to SCR are subject to Rule 4320. The applicant has proposed to comply with the Staged Enhanced Schedule initial limit of Rule 4320, Table 1.D.2(b) (9 ppmv NO_x at 3% O₂).

Since the 52.2 MMBtu/hr Crude Heater #4 will not be retrofitted for Rule 4320 compliance, and consistent with their Rule 4320 ECP, the facility has elected to pay the annual fees for this emissions unit. Therefore, the following conditions are listed on the permit to ensure compliance.

- Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NO_x emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NO_x emission limit listed in Rule 4320. [District Rule 4320]
- Permittee shall maintain records of fuel hhv and cumulative annual fuel use for each heater for a period of at least five years and shall make such records readily available for District inspection upon request. [District Rules 4320 and 4351]

Compliance with Rule 4320

Section 5.2.1 states that on and after the indicated Compliance Deadline (July 1, 2012), units shall not be operated in a manner which exceeds the applicable NO_x emissions limit specified in Table 1, which is 9 ppmv.

Section 5.2.1 also states that units shall not be operated in a manner to which exceeds a carbon monoxide (CO) emissions limit of 400 ppmv.

The applicant has proposed to limit the NO_x emissions from each unit to 9 ppmv. The units will retain their current permitted limits for CO, which is 400 ppmv for the Heater #VH4, 100 ppmv for the Wickes Boiler, and 20 ppmv for the Heater #H-101.

Section 5.4.1.1 states that on and after the applicable NO_x Compliance Deadline, operators can meet the PM requirements by firing units exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases.

Units S-36-1-16 (Heater #VH-4) and S-36-41-16 are limited to fire PUC quality natural gas.

Section 5.4.2 states that fuel oil back-up sulfur content shall not exceed 15 ppmw.

S-36-1-16

The following condition has been removed from the permit.

- The burning of fuel oil in the vacuum heater shall only be performed during periods of involuntary natural gas curtailments and for equipment testing. [District Rules 2520, 9.4.2, 4305, 4306 and 4351]

The following conditions will ensure compliance.

- Vacuum Heater #VH-4 shall be fired on natural gas only. [District Rules 2201 and 4320]
- Natural gas combusted in crude heater #4 and the vacuum heater #VH-4 shall be of PUC quality. [District Rules 2201 and 4320]
- Sulfur content of liquid back-up fuel for the 52.2 MMBtu/hr heater #4 shall not exceed 15 ppmw. [District Rule 4320]
- Oil-fired emissions for the 52.2 MMBtu/hr Crude Heater #4 shall not exceed any of the following limits: 0.215 lb-NO_x/MMBtu, 0.0015 lb-SO_x/MMBtu, 0.083 lb-PM₁₀/MMBtu, 400 ppmv CO @ 3% O₂ (0.312 lb-CO/MMBtu) or 0.008 lb-VOC/MMBtu. [District Rules 2201 and 4320]
- Fuel sulfur content shall be determined using EPA Method 11 or Method 15, ASTM D 2880, (ASTM) D 6920-03 or ASTM D 5453-99. [District Rule 4320]

The following condition will be modified to include two extra liquid fuel sulfur testing methods.

- If the unit is fired on noncertified liquid fuel and compliance with SO_x emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the liquid fuel being fired in the unit shall be determined using ASTM D 2880, ASTM D 6920-03 or ASTM D 5453-99. [District Rules 4320]

S-36-41-18

The following conditions will be removed from the permit.

- Liquid fuel fired emission rates shall not exceed any of the following: PM₁₀: 0.0231 lb/MMBtu, NO_x (as NO₂) - 40 ppmv @ 3% O₂ or 0.052 lb/MMBtu, VOC: 0.0024 lb/MMBtu, or CO: 400 ppmv @ 3% O₂. [District NSR Rule and District Rules 4305, 4306 and 4351]
- Total quantity of liquid fuel combusted in S-36-2, S-36-4, and S-36-41 shall not exceed 1,093,500 gal/rolling twelve month period. [District Rule 4102]
- Compliance testing to demonstrate compliance with liquid fuel fired NO_x and CO emission limits shall be conducted within 60 days of initial liquid fuel firing. [District Rule 1081]

The following condition will be modified as follows.

- Boiler may be fired on Fruitvale oilfield produced gas or purchased natural gas or liquid fuel. Natural gas and lease produced gas sulfur content shall not exceed 1.0 gr sulfur compounds/100 scf. ~~Liquid fuel sulfur content shall not exceed 10 ppmw.~~ [District Rules 2201 and 4320]

Section 5.4.1.2 states that on and after the applicable NO_x Compliance Deadline, operators shall limit fuel sulfur content to no more than five (5) grains of total sulfur per 100 scf.

Unit S-36-51 (Heater #H-101) is authorized to burn both natural gas and PSA offgas. The sulfur content of the PSA offgas is limited to 1.23 grains per 100 scf. This is lower than 5 grains/100 scf, and the following condition will ensure compliance.

- Sulfur content of PSA offgas combusted in reformer furnace H-101 shall not exceed 0.0123 grains/dscf. Sampling of PSA offgas to determine compliance with sulfur content limit shall be conducted annually. [District Rule 2201]

Section 5.7.1 requires that the operator shall install and maintain an operational APCO approved Continuous Emissions Monitoring System (CEMS) for NO_x, CO, and oxygen, or implement an APCO-approved Alternate Monitoring System.

The applicant has proposed to continue to use Alternate Monitoring Scheme A, and the following conditions are listed on each permit.

- The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306 and 4320]
- In stack oxygen monitors are acceptable for O₂ measurement. [District Rules 4305, 4306 and 4320] (Taken from former PTOs S-36-1-14 and 41-16.)
- If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320]

- All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320].
- The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320]

Section 6.3.1 requires each unit subject to the requirements in Section 5.2 to be source tested to determine compliance with the applicable emission limits at least once every 12 months, (no more than 30 days before or after the required annual source test date).

Section 6.3.1.1 allows units that demonstrate compliance on two consecutive 12-month source tests to defer the following 12-month source test for up to 36 months (no more than 30 days before or after the required 36-month source test date).

Section 6.2 specifies the source testing methods that may be used to demonstrate compliance during the source tests.

Section 6.1 requires that records of all monitoring and source test results be retained for a period of at least 5 years and made available for District inspection upon request.

The following conditions are listed on permits S-36-1-16, S-36-41-18, and S-36-51-19, respectively.

- Source testing to measure NO_x and CO emissions from the 27 MMBtu/hr Vacuum Heater #VH-4 shall be conducted within 60 days of initial start-up. [District Rules 4305, 4306 and 4320]
- Source testing to measure NO_x and CO emissions from the 31.25 MMBtu/hr Wickes Boiler shall be conducted within 60 days of initial startup. [District Rules 4305, 4306 and 4320]
- Source testing to measure NO_x and CO emissions from the 47.1 MMBtu/hr Heater #H-101 shall be conducted within 60 days of initial startup. [District Rules 4305, 4306 and 4320]

The following conditions are listed on all permits in this project.

- {4345} Source testing to measure NOx and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320]
- {109} Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
- {4350} The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] N
- {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
- {4346} NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320]
- {4347} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320] N
- {4348} Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320]
- {4349} Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320]
- {4352} 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]
- {4351} All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306 and 4320]

Section 6.3.2 allows for representative source testing.

Since there are no similar units listed at this facility, the existing representative source testing conditions are being removed from all permits in this project.

Conclusion: These units are expected to comply with Rule 4320.

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

Section 2.0 states that this rule is applicable to equipment with a rated heat input greater than 5.0 MMBtu/hr that is fired with gaseous and or liquid fuel, and is included in a major NO_x source.

Section 5 requires that any natural or induced draft unit to have a NO_x limit of no greater than 0.18 lb-NO_x/MMBtu (147 ppmv @ 3% O₂). The NO_x limits on each of the units in this project are 0.011 lb-NO_x/MMBtu (9 ppmv @ 3% O₂). Therefore compliance with Rule 4351 is expected.

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 SO₂, on a dry basis averaged over 15 consecutive minutes.

Using the ideal gas equation and the highest of the SO_x emission factors presented in Section VII, the sulfur compound emissions are calculated as follows.

$$Volume SO_2 = \frac{n \cdot R \cdot T}{P}$$

Where

n = moles SO₂

T (Standard Temperature) = 60°F = 520°R

P (Standard Pressure) = 14.7 psi

R (Universal Gas Constant) = $\frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot \text{°R}}$

$$\frac{0.0034 \text{ lb} \cdot SO_x}{\text{MMBtu}} \times \frac{\text{MMBtu}}{8,578 \text{ dscf}} \times \frac{1 \text{ lb} \cdot \text{mol}}{64 \text{ lb}} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot \text{°R}} \times \frac{520 \text{ °R}}{14.7 \text{ psi}} \times \frac{1,000,000 \cdot \text{parts}}{\text{million}} = 2.35 \frac{\text{parts}}{\text{million}}$$

Since the sulfur concentration of 2.35 ppmv is less than 2,000 ppmv, compliance with Rule 4801 is expected.

The current sulfur condition on each permit has been revised to state:

- The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period. [District Rule 4801]

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (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 San Joaquin Valley Unified Air Pollution Control District (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

It is determined that no other agency has or will prepare an environmental review document for the project. Thus, the District is the Lead Agency for this project.

The District's engineering evaluation (this document) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15031 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Issue ATCs S-36-1-16, 41-18 and 51-19 subject to the permit conditions listed on the attached draft ATCs pending a successful COC EPA Notice.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-36-1-16	3020-02-H	79.2 MMBtu/hr	\$1,030
S-36-41-18	3020-02-H	31.25 MMBtu/hr	\$1,030
S-36-51-19	3020-02-H	103.4 MMBtu/hr	\$1,030

Appendixes

- A: Current Permits
- B: PE1 and PE2 Calculations for S-36-1-13
- C: HRA Summary
- D: Emissions Profiles
- E: Draft ATCs

Appendix A

Current Permits

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-36-1-13

EXPIRATION DATE: 08/31/2016

SECTION: NE24 **TOWNSHIP:** 29S **RANGE:** 27E

EQUIPMENT DESCRIPTION:

79.2 MMBTU/HR ATMOSPHERIC/VACUUM CRUDE UNIT #4 WITH PREFLASH COLUMN, FRACTIONATOR, VACUUM DISTILLATION COLUMN WITH MECHANICAL VACUUM PRODUCING SYSTEM, 27 MMBTU/HR GAS/OIL/WASTE GAS FIRED NATURAL DRAFT VACUUM HEATER #VH-4 WITH THREE ZEECO CLSF 11 LOW NOX BURNERS AND 52.2 MMBTU/HR GAS/OIL FIRED NATURAL DRAFT HEATER #4 WITH ZEECO MODEL CLSF LOW NOX BURNERS

PERMIT UNIT REQUIREMENTS

1. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4305 and 4306] Federally Enforceable Through Title V Permit
2. The duration of each startup and shutdown period for the 52.2 MMBtu/hr crude heater #4 shall not exceed 8.0 hours and 2.0 hours respectively. Short term NOx and CO emissions limits (lb/MM Btu or ppmv @ 3% O2) shall not apply during periods of startup and and shutdown. [District NSR Rule, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
3. The duration of each startup and shutdown period for the 27.0 MMBtu/hr vacuum heater VH-4 shall not exceed 9.0 hours and 2.0 hours respectively. Short term NOx and CO emissions limits (lb/MM Btu or ppmv @ 3% O2) shall not apply during periods of startup and and shutdown. [District NSR Rule, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
4. All equipment shall be constructed, maintained, and operated according to the specifications and plans contained in the permit application except as otherwise specified herein. [District NSR Rule] Federally Enforceable Through Title V Permit
5. Natural gas combusted in crude heater #4 and the vacuum heater shall be of PUC quality. [District NSR Rule and 4320] Federally Enforceable Through Title V Permit
6. The burning of liquid fuel in crude heater #4 and vacuum heater shall only be performed during periods of involuntary natural gas curtailments and for equipment testing. [District Rules 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
7. The burning of liquid fuel in each heater is limited to 168 cumulative hours in a calendar year plus 48 hour per calendar year for equipment testing of operation during natural gas curtailments. [District Rules 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
8. Vacuum system exhaust gas emissions shall be controlled by incineration in the 27 MMBtu/hr vacuum heater (VH-4). [District Rule 4453] Federally Enforceable Through Title V Permit
9. Heat exchangers utilizing cooling water shall be operated and maintained as to prevent VOC emissions from cooling towers. [District NSR Rule] Federally Enforceable Through Title V Permit
10. Gas firing emissions from 52.2 MMBtu/hr crude heater #4 shall not exceed any of the following: PM10: 0.004 lb/MMBtu; VOC: 0.01 lb/MMBtu; NOx (as NO2) - 30 ppmv @ 3% O2 or 0.036 lb/MMBtu; or CO - 400 ppmv @ 3% O2. [District NSR Rule, 4305, 4306 and 4351] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

11. Liquid fuel firing emissions from 52.2 MMBtu/hr crude heater #4 shall not exceed any of the following limits: 11.56 lb-PM10/1000 gal; SOx (as SO₂): 172.7 lb/1000 gal; NOx (as NO₂): 0.215 lb/MM Btu; VOC: 1.12 lb/1000 gal; or CO : 400 ppmv @ 3% O₂. [District NSR Rule, 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
12. Gas firing emissions from 27 MMBtu/hr vacuum heater shall not exceed any of the following: PM10: 0.004 lb/MMBtu; VOC: 0.0075 lb/MMBtu; or CO - 400 ppmv @ 3% O₂. [District NSR Rule, 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
13. Liquid fuel firing emissions from 27 MMBtu/hr vacuum heater shall not exceed any of the following: PM10: 11.56 lb/1000 gal; SOx (as SO₂): 172.7 lb/1000 gal; NOx (as NO₂): 0.215 lb/MM Btu; VOC: 1.12 lb/1000 gal; or CO : 400 ppmv @ 3% O₂. [District NSR Rule, 4305 and 4306] Federally Enforceable Through Title V Permit
14. NOx emissions when gas firing 27 MMBtu/hr vacuum heater shall not exceed 30 ppmv @ 3% O₂. [District NSR Rule, 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
15. Source testing for NOx and CO emissions shall be conducted not less than once every 12 months, except as provided below. [District Rules 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
16. Source testing for NOx and CO emissions shall be conducted not less than once every 36 months if compliance is demonstrated on two consecutive annual tests. [District Rules 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
17. If permittee fails any compliance demonstration for NOx and/or CO emission limits when testing not less than once every 36 months, compliance with NOx and CO emission limits shall be demonstrated not less than once every 12 months. [District Rules 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
18. Source test results from an individual unit that is identical to this unit, in terms of rated capacity, operational conditions, fuel used, and control method, as approved by the APCO, will satisfy the NOx and CO source testing requirement. [District Rules 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
19. Source testing shall be by District witnessed, or authorized sample collection by ARB certified testing laboratory. [District Rule 1081] Federally Enforceable Through Title V Permit
20. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
22. 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, and stack gas oxygen - EPA Method 3 or 3A or ARB Method 100. [District Rules 1081, 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
23. The permittee shall monitor and record the stack concentration of NOx, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
24. If either the NOx or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

25. 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] Federally Enforceable Through Title V Permit
26. The permittee shall maintain records of: (1) the date and time of NOX, CO, and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOX and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
27. Permittee shall maintain records of fuel hhv and cumulative annual fuel use for a period of five years and shall make such records readily available for District inspection upon request. [District Rule 4351] Federally Enforceable Through Title V Permit
28. All required source testing shall conform to the compliance testing procedures described in District Rule 1081(Amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit
29. Copies of all fuel invoices, gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted and all dates on which unit is fired on any noncertified fuel. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
30. Operator shall maintain all records for at least five years and conform to the recordkeeping requirements described in District Rule 2520. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
31. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
32. Source testing shall be performed using EPA Method 5 while firing on residual oil (including crude or topped crude) to demonstrate compliance with PM emission limits. Source testing shall be performed within 90 days of firing on residual oil unless such testing has been performed within the 12 month period prior to firing on said oil and the test results showed compliance with PM emission limits of this permit. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
33. Emissions of sulfur compounds from each heater shall not exceed 200 lb per hour, calculated as SO2. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or on diesel fuel not exceeding 0.5% sulfur by weight; or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rule 2520, 9.3.2 and District Rule 4301, 5.2.1] Federally Enforceable Through Title V Permit
34. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
35. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6B; or Method 8; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, a grab sample analysis by GC-FPD/TCD performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months; however, annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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36. If the unit is fired on noncertified gaseous fuel and compliance with SO_x emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
37. If the unit is fired on noncertified liquid fuel and compliance with SO_x emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the liquid fuel being fired in the unit shall be determined using ASTM D 2880. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
38. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: ASTM D 240 or D 2382 for liquid hydrocarbon fuels; ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 4305, 6.2.1; 4306, 6.2.1 and 4351, 6.2.1] Federally Enforceable Through Title V Permit
39. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period (Kern County Rule 407). To demonstrate compliance with this requirement the operator shall do one of the following: fire the unit only on PUC or FERC regulated natural gas or diesel fuel not exceeding 0.5% sulfur by weight; or test the sulfur content of each fuel source and demonstrate the sulfur content does not exceed 3.3% by weight for gaseous fuels or 3.0% by weight for residual oil (including crude or topped crude); or determine that the concentration of sulfur compounds in the exhaust does not exceed the concentration limit by a combination of source testing and fuel analysis. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
40. Nitrogen oxide (NO_x) emission concentrations in ppmv shall be referenced at dry stack gas conditions, and shall be calculated to 3.00 percent by volume stack gas oxygen and averaged over 60 minutes, and lb/MMBtu rates shall be calculated as lb NO₂/MMBtu of heat input (hhv). [District Rules 4305, 5.0, 8.2, 4306, 5.0, 8.2 and 4351, 8.1] Federally Enforceable Through Title V Permit
41. Emissions for this unit shall be calculated using the arithmetic mean, pursuant to District Rule 1081 (Amended December 16, 1993), of 3 thirty-minute test runs for NO_x and CO. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
42. Annual test results submitted to the District from unit(s) representing a group of units may be used to measure NO_x emissions of this permit for that group, provided the selection of the representative unit(s) is approved by the APCO prior to testing. Should any of the representative units exceed the required NO_x emission limits of this permit, each of the units in the group shall demonstrate compliance by emissions testing within 90 days of the failed test. (This requirement shall not supersede a more stringent NSR or PSD permit testing requirement.) [District Rules 4305, 6.3.2, 4306, 6.3.2, and 4351, 6.3] Federally Enforceable Through Title V Permit
43. The following conditions must be met for representative unit(s) to be used to test for NO_x limits for a group of units: 1) all units are initially source tested and emissions from each unit in group are less than 90% of the permitted value and vary 25% or less from the average of all runs, 2) all units in group are similar in terms of rated heat input (rating not to exceed 100 MMBtu/hr), make and series, operation conditions, and control method, and 3) the group is owned by a single owner and located at a single stationary source. [District Rule 4305, 6.3.2 and 4306, 6.3.2] Federally Enforceable Through Title V Permit
44. All units in a group for which representative units are source for NO_x emissions shall have received the same maintenance and tune-up procedures as the representative unit(s). These tune-up procedures shall be completed according to District Rule 4304 (Adopted October 19, 1995) and tune-up test results shall show comparable results for each unit in the group. Records shall be maintained for each unit of the group including all preventative and corrective maintenance work done. [District Rule 4305, 6.3.2 and 4306, 6.3.2] Federally Enforceable Through Title V Permit
45. All units in a group for which representative units are source tested for NO_x emissions of this permit shall be fired on the same fuel type during the entire compliance period. If a unit switches for any time to an alternate fuel type (e.g. from natural gas to oil) then that unit shall not be considered part of the group and shall be required to undergo a source test for all fuel types used, within one year of the switch. [District Rule 4305, 6.3.2 and 4306, 6.3.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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46. The number of representative units source tested for NOx emissions shall be at least 30% of the total number of units in the group. The units included in the 30% shall be rotated, so that in 3 years, all units in the entire group will have been tested at least once. [District Rule 4305, 6.3.2 and 4306, 6.3.2] Federally Enforceable Through Title V Permit
47. A component shall be considered leaking if one or more of the conditions specified in Sections 5.1.4.1 through 5.1.4.4 of Rule 4455 exist at the facility. For this permit unit, except for pumps and compressors, a minor gas leak shall be defined for any component listed in Rule 4455 Section 3.22 Table 1 in either liquid or gas/vapor service as a reading in excess of 100 ppmv above background up to and including a reading of 10,000 ppmv above background. For pumps, compressors and other component types not specifically listed in Rule 4455 Section 3.22 Table 1 in either liquid or gas/vapor service, a minor gas leak shall be defined as a reading in excess of 500 ppmv above background up to and including a reading of 10,000 ppmv above background. Readings shall be taken as methane using a portable hydrocarbon detection instrument and shall be made in accordance with the methods specified in Section 6.4.1 of Rule 4455. [District NSR Rule and 4455, 5.1.4] Federally Enforceable Through Title V Permit
48. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
49. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of District Rule 4801, section 3.1 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
50. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from the crude heater #4 for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit
51. Permittee shall maintain records of annual heat input (MMBtu) for crude heater #4 on a calendar year basis. Such 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 and 4320] Federally Enforceable Through Title V Permit

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San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-36-41-16

EXPIRATION DATE: 08/31/2016

SECTION: 23 **TOWNSHIP:** 29S **RANGE:** 27E

EQUIPMENT DESCRIPTION:

31.25 MMBTU/HR FORCED DRAFT WICKES BOILER WITH NORTH AMERICAN MODEL 6131-FC2 NATURAL GAS/OIL-FIRED LOW NOX BURNER WITH FGR

PERMIT UNIT REQUIREMENTS

1. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
2. The duration of each startup and shutdown period for the 31.25 MMBtu/hr heater shall not exceed 4.0 hours and 2.0 hours respectively. Emission limits of Rule 4305 and 4306 are waived during periods of startup and shutdown. [District Rule 4305, Section 5.5.6 and 4306 Section 5.3] Federally Enforceable Through Title V Permit
3. Gas fired emission rates shall not exceed any of the following: PM10: 0.0076 lb/MMBtu, VOC: 0.0055 lb/MMBtu, or CO: 100 ppmv @ 3% O₂. [District NSR Rule and District Rules 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
4. Gas fired NO_x emissions shall not exceed 30 ppmv @ 3% O₂ or 0.036 lb/MMBtu. [District Rule 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
5. Liquid fuel fired emission rates shall not exceed any of the following: PM10: 0.0231 lb/MMBtu, NO_x (as NO₂) - 40 ppmv @ 3% O₂ or 0.052 lb/MMBtu, VOC: 0.0024 lb/MMBtu, or CO: 400 ppmv @ 3% O₂. [District NSR Rule and District Rules 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
6. Boiler may be fired on Fruitvale oilfield produced gas, purchased natural gas or liquid fuel. Natural gas and lease produced gas sulfur content shall not exceed 1.0 gr sulfur compounds/100 scf. Liquid fuel sulfur content shall not exceed 10 ppmw. [District NSR Rule] Federally Enforceable Through Title V Permit
7. Total quantity of liquid fuel combusted in S-36-2, S-36-4, and S-36-41 shall not exceed 1,093,500 gal/rolling twelve month period. [District Rule 4102]
8. Compliance testing to demonstrate compliance with liquid fuel fired NO_x and CO emission limits shall be conducted within 60 days of initial liquid fuel firing. [District Rule 1081] Federally Enforceable Through Title V Permit
9. Source testing for gas fired NO_x and CO emissions shall be conducted not less than once every 12 months, except as provided below. Source testing to demonstrate compliance with liquid fuel fired NO_x and CO emission limits shall be conducted not less than once every 12 months if liquid fuel was used within preceding 12 months, except as provided below. [District Rules 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
10. Source testing for gas and liquid fuel fired NO_x and CO emissions shall be conducted not less than once every 36 months if compliance is demonstrated on two consecutive annual tests. [District Rules 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
11. If permittee fails any source test for NO_x and CO emissions when testing not less than once every 36 months, compliance with NO_x and CO emission limits shall be demonstrated not less than once every 12 months. [District Rules 4305, 4306 and 4351] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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12. Source test results from an individual unit that is identical to this unit, in terms of rated capacity, operational conditions, fuel used, and control method, as approved by the APCO, will satisfy the NO_x and CO source testing requirement. [District Rules 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
13. Source testing shall be by District witnessed, or authorized sample collection by ARB certified testing laboratory. [District Rule 1081] Federally Enforceable Through Title V Permit
14. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
15. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
16. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
17. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
18. 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] Federally Enforceable Through Title V Permit
19. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
20. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, fuel gas sulfur content- ASTM D3246 , fuel oil sulfur content - ASTM D4294 , PAHs - ARB method 429 , and chromium VI compounds - CARB method 425. [District Rules 1081, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
21. Permittee shall maintain records of total quantity of liquid fuel combusted in S-36-2, S-36-4, and S-36-41 on a rolling twelve month basis for a period of five years and shall make such records readily available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit
22. Permittee shall maintain records of fuel oil and lease produced gas sulfur content, fuels hhv and cumulative annual fuels use for a period of five years and shall make such records readily available for District inspection upon request. [District Rule 4351] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
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23. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Last Amended December 19, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit
24. Copies of all fuel invoices, gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted and all dates on which unit is fired on any noncertified fuel. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
25. Operator shall maintain all records for at least five years and conform to the recordkeeping requirements described in District Rule 2520. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
26. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
27. Source testing shall be performed using EPA Method 5 while firing on residual oil (including crude or topped crude) to demonstrate compliance with PM emission limits. Source testing shall be performed within 90 days of firing on residual oil unless such testing has been performed within the 12 month period prior to firing on said oil and the test results showed compliance with PM emission limits of this permit. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
28. Emissions of sulfur compounds from this unit shall not exceed 200 lb per hour, calculated as SO₂. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or on diesel fuel not exceeding 0.5% sulfur by weight; or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rule 2520, 9.3.2 and District Rule 4301, 5.2.1] Federally Enforceable Through Title V Permit
29. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
30. When complying with SO_x emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6B; or Method 8; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, a grab sample analysis by GC-FPD/TCD performed in the laboratory and EPA Method 19 to calculate emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months; however, annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
31. If the unit is fired on noncertified gaseous fuel and compliance with SO_x emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
32. If the unit is fired on noncertified liquid fuel and compliance with SO_x emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the liquid fuel being fired in the unit shall be determined using ASTM D 2880. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
33. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: ASTM D 240 or D 2382 for liquid hydrocarbon fuels; ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 4305, 6.2.1; 4306, 6.2.1; and 4351, 6.2.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
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34. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period (Kern County Rule 407). To demonstrate compliance with this requirement the operator shall do one of the following: fire the unit only on PUC or FERC regulated natural gas or diesel fuel not exceeding 0.5% sulfur by weight; or test the sulfur content of each fuel source and demonstrate the sulfur content does not exceed 3.3% by weight for gaseous fuels or 3.0% by weight for residual oil (including crude or topped crude); or determine that the concentration of sulfur compounds in the exhaust does not exceed the concentration limit by a combination of source testing and fuel analysis. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
35. Nitrogen oxide (NO_x) emission concentrations in ppmv shall be referenced at dry stack gas conditions, and shall be calculated to 3.00 percent by volume stack gas oxygen and averaged over 60 minutes, and lb/MMBtu rates shall be calculated as lb NO₂/MMBtu of heat input (hhv). [District Rule 4305, 5.0, 8.2; 4306, 5.0 and/or 4351, 8.1] Federally Enforceable Through Title V Permit
36. Emissions for this unit shall be calculated using the arithmetic mean, pursuant to District Rule 1081 (Amended December 16, 1993), of 3 thirty-minute test runs for NO_x and CO. [District Rule 1081] Federally Enforceable Through Title V Permit
37. Annual test results submitted to the District from unit(s) representing a group of units may be used to measure NO_x emissions of this permit for that group, provided the selection of the representative unit(s) is approved by the APCO prior to testing. Should any of the representative units exceed the required NO_x emission limits of this permit, each of the units in the group shall demonstrate compliance by emissions testing within 90 days of the failed test. (This requirement shall not supersede a more stringent NSR or PSD permit testing requirement.) [District Rules 4305, 6.3.2; 4306, 6.3.2 and 4351, 6.3] Federally Enforceable Through Title V Permit
38. The following conditions must be met for representative unit(s) to be used to test for NO_x limits for a group of units: 1) all units are initially source tested and emissions from each unit in group are less than 90% of the permitted value and vary 25% or less from the average of all runs, 2) all units in group are similar in terms of rated heat input (rating not to exceed 100 MMBtu/hr), make and series, operation conditions, and control method, and 3) the group is owned by a single owner and located at a single stationary source. [District Rules 4305, 6.3.2 and 4306, 6.3.2] Federally Enforceable Through Title V Permit
39. All units in a group for which representative units are source for NO_x emissions shall have received the same maintenance and tune-up procedures as the representative unit(s). These tune-up procedures shall be completed according to District Rule 4304 (Adopted October 19, 1995) and tune-up test results shall show comparable results for each unit in the group. Records shall be maintained for each unit of the group including all preventative and corrective maintenance work done. [District Rules 4305, 6.3.2 and 4306, 6.3.2] Federally Enforceable Through Title V Permit
40. All units in a group for which representative units are source tested for NO_x emissions of this permit shall be fired on the same fuel type during the entire compliance period. If a unit switches for any time to an alternate fuel type (e.g. from natural gas to oil) then that unit shall not be considered part of the group and shall be required to undergo a source test for all fuel types used, within one year of the switch. [District Rules 4305, 6.3.2 and 4306, 6.3.2] Federally Enforceable Through Title V Permit
41. The number of representative units source tested for NO_x emissions shall be at least 30% of the total number of units in the group. The units included in the 30% shall be rotated, so that in 3 years, all units in the entire group will have been tested at least once. [District Rules 4305, 6.3.2 and 4306, 6.3.2] Federally Enforceable Through Title V Permit
42. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), 4301 (Amended December 17, 1992), and 4801, section 3.1 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-36-51-14

EXPIRATION DATE: 08/31/2016

SECTION: 23 **TOWNSHIP:** 29S **RANGE:** 27E

EQUIPMENT DESCRIPTION:

103.4 MMBTU/HR DIESEL TREATING UNIT WITH SULFUR RECOVERY UNIT AND SAFETY FLARE

PERMIT UNIT REQUIREMENTS

1. No modification to heater H-501 shall be performed without an Authority to Construct for such modification(s), except for changes specified in conditions below. [District Rule 2010] Federally Enforceable Through Title V Permit
2. When heater H-501 is not operated, the fuel supply line shall be physically disconnected from this unit. [District Rule 4306] Federally Enforceable Through Title V Permit
3. Operator shall notify the District at least seven (7) calendar days prior to recommencing operation of this dormant heater, at which time this permit will be administratively modified to remove DEU references. [District Rule 4306] Federally Enforceable Through Title V Permit
4. A source test to demonstrate compliance with the indicated emission limits shall be performed within 60 days of recommencing operation of heater H-501. [District Rule 4306] Federally Enforceable Through Title V Permit
5. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4305 and 4306] Federally Enforceable Through Title V Permit
6. The duration of each startup and shutdown period for the 47.1 MMBtu/hr furnace #H-101 shall not exceed 12.0 hours and 2.0 hours respectively. Emission limits of Rule 4305 and 4306 are waived during periods of startup and shutdown. [District Rule 4305, Section 5.5.6 and 4306, 5.3.3] Federally Enforceable Through Title V Permit
7. The duration of each startup and shutdown period for the 7.4 MMBtu/hr heater #H-201 shall not exceed 8.0 hours and 2.0 hours respectively. Emission limits of Rule 4305 and 4306 are waived during periods of startup and shutdown. [District Rule 4305, Section 5.5.6 and 4306, 5.3.3] Federally Enforceable Through Title V Permit
8. The duration of each startup and shutdown period for the 17.0 MMBtu/hr heater #H-501 shall not exceed 7.25 hours and 2.0 hours respectively. Emission limits of Rule 4305 and 4306 are waived during periods of startup and shutdown. [District Rule 4305, Section 5.5.6 and 4306, 5.3.3] Federally Enforceable Through Title V Permit
9. The duration of each startup and shutdown period for the 8.4 MMBtu/hr heater #H-601 shall not exceed 7.5 hours and 2.0 hours respectively. Emission limits of Rule 4305 and 4306 are waived during periods of startup and shutdown. [District Rule 4305, Section 5.5.6 and 4306, 5.3.3] Federally Enforceable Through Title V Permit
10. The duration of each startup and shutdown period for the 7.4 MMBtu/hr heater #H-602 shall not exceed 7.5 hours and 2.0 hours respectively. Emission limits of Rule 4305 and 4306 are waived during periods of startup and shutdown. [District Rule 4305, Section 5.5.6 and 4306, 5.3.3] Federally Enforceable Through Title V Permit
11. All equipment shall be constructed, maintained and operated according to the specifications and plans contained in the permit application except as otherwise specified herein. [District NSR Rule] Federally Enforceable Through Title V Permit
12. Equipment includes caustic scrubber S-303, caustic recirculation vessels A and B, and caustic recirculation pumps 970A and 970 B. [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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13. Equipment includes: 47.1 MMBtu/hr natural gas-fired and PSA offgas fired reformer furnace #H-101; 30.0 MMBtu/hr (limited to 17.0 MMBtu/hr by fuel limit) refinery fuel gas-fired 1st fractionator heater #H-501; and 7.44 MMBtu/hr refinery fuel gas-fired heater for #H-201 HDS reactor. [District Rule 2010] Federally Enforceable Through Title V Permit
14. Equipment includes: 10.5 MMBtu/hr (limited to 8 MMBtu/hr by fuel limit) refinery fuel gas-fired 3rd fractionator heater #H-602; and 8.4 MMBtu/hr refinery fuel gas-fired 2nd fractionator heater #H-601. [District Rule 2010] Federally Enforceable Through Title V Permit
15. Equipment includes draft fan C-101, reformer M-101, desulfur vessel V-101, shift convertor vessel V-102, process condenser drum V-103, and deaerator V-104. [District Rule 2010] Federally Enforceable Through Title V Permit
16. Equipment includes steam drum V-105, blowdown drum V-106, steam separator V-107, PSA adsorbers V-108 A,B,C & D, and offgas drum V-109. [District Rule 2010] Federally Enforceable Through Title V Permit
17. Equipment includes one 1275 bbl sour water pressure vessel, one 711 bbl, one 1275 bbl, and one 719 bbl light naphtha pressure vessels, and light naphtha loading rack with nitrogen purge system. [District Rule 2010] Federally Enforceable Through Title V Permit
18. Unit 200 (HDS section) includes oil filter A-201, O/H stripper B-201, coke drum B-202, intermediate stripper F-201, and HDS reactor R-201. [District Rule 2010] Federally Enforceable Through Title V Permit
19. Unit 300 (HDA section) includes hot separator B-301, recycle gas separator B-302, recycle gas compressor K/O drum B-310, hydrogen (H₂) gas compressors K-301 A/B, and HDA reactor R-301. [District Rule 2010] Federally Enforceable Through Title V Permit
20. Unit 400 (amine wash & sour water stripper) includes amine solution filter A-401, OH separator B-401, amine K/O drum B-402, amine solution flash drum B-403, amine adsorber F-401, amine regenerator F-402, and amine storage tank T-401. [District Rule 2010] Federally Enforceable Through Title V Permit
21. Unit 400 includes sour water flash drum B-411, slop oil drum B-412, sour water stripper F-410, and sour water feed tank T-411. [District Rule 2010] Federally Enforceable Through Title V Permit
22. Unit 500 (1st fractionator) includes OH separator B-501, HDA feed surge drum B-502, OH separator for light ends stripper B-503, coke drum B-504, 1st fractionator F-501, light ends stripper F-502, and 1st fractionator feed heater H-501. [District Rule 2010] Federally Enforceable Through Title V Permit
23. Unit 600 (2nd/3rd fractionators) includes 2nd fractionator accumulator B-601, 3rd fractionator accumulator B-602, 2nd fractionator F-601, 3rd fractionator F-602, and kero stripper F-603. [District Rule 2010] Federally Enforceable Through Title V Permit
24. Unit 600 includes heavy solvent stripper F-604, 2nd fractionator reboiler H-601, 3rd fractionator reboiler H-602, compressors K-601 A/B, and vacuum pumps K-602 A/B. [District Rule 2010] Federally Enforceable Through Title V Permit
25. Sulfur recovery unit includes liquified oxygen storage facility combustion oxygen enriched air blower 10-K-01A, spare combustion oxygen enriched air blower 10-K-01B, amine acid gas and NH₃ gas KO drums 10-V-01/02, and converter 1/2/3-common shell with hydrogenation reactor 10-V-04/05/06. [District Rule 2010] Federally Enforceable Through Title V Permit
26. Sulfur recovery unit includes sulfur pit vent eductor 10-K-02 (venting to thermal oxidizer 10-F-02), reaction furnace 10-F-01, thermal oxidizer and stack 10-F-02, sulfur pit 10-T-01, K/O drum sour water pumps 10-P-01 A/B, sulfur pump 10-P-03, and boiler feedwater pumps 10-P-04 A/B. [District Rule 2010] Federally Enforceable Through Title V Permit
27. Tailgas unit includes reducing gas generator (RGG) 11-F-01, contact condenser pumps 11-P-01 A/B, rich amine pumps 11-P-02 A/B, regenerator reflux pumps 11-P-03 A/B, amine sump pump 11-P-04, and lean amine pump 11-P-05. [District Rule 2010] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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28. Tail gas unit includes amine surge drum 11-T-01, hydrogenation reactor 11-V-01, contact condenser 11-V-02, amine absorber 11-V-03, amine regenerator 11-V-04, and regenerator reflux drum 11-V-05. [District Rule 2010] Federally Enforceable Through Title V Permit
29. The Claus sulfur recovery unit sulfur production shall not exceed six long tons per day. [District NSR Rule] Federally Enforceable Through Title V Permit
30. Fugitive emission rate from caustic scrubber S-303, caustic recirculation vessels A and B, and caustic recirculation pumps P-970-A and P-970-B, calculated using the California Implementation Guideline for Estimating Mass Emissions of Fugitive Hydrocarbon leaks at Petroleum Facilities, Table IV-2a. 1995 EPA Protocol, Refinery Screening Value Range Emissions Factors, shall not exceed 1.1 lb/day. [District NSR Rule] Federally Enforceable Through Title V Permit
31. Permittee shall maintain accurate fugitive emissions component counts and calculation of resulting emissions from caustic scrubber S-303, caustic recirculation vessels A and B, and caustic recirculation pumps P-970-A and P-970-B using fugitive emissions factors described in this permit. [District NSR Rule] Federally Enforceable Through Title V Permit
32. Gas leaks exceeding 10,000 ppmv and liquid leaks exceeding 3 drops per minute from the caustic scrubber S-303, caustic recirculation vessels A and B, and caustic recirculation pumps P-970-A and P-970-B are a violation of this permit and shall be reported as a deviation. [District NSR Rule] Federally Enforceable Through Title V Permit
33. Flare shall burn no more than 190,000 scf in any day of hydrogen plant gas, purchased natural gas, and all gases from diesel stripper, diesel hydrogenation flash drum, sour water stripper tank, vapors collected from S-36-104, and gases from heavy oil hydrofinisher processing unit on S-36-109. [Rule 2010] Federally Enforceable Through Title V Permit
34. Upon recommencing operation, permittee shall demonstrate fuel limitation for heater H-501 by either a non-resettable fuel meter for each heater and daily records of fuel use, or provide District approved documentation demonstrating how the fuel flow is limited to the permitted rating. [District NSR Rule] Federally Enforceable Through Title V Permit
35. Permittee shall demonstrate fuel limitation for heater H-602 by either a non-resettable fuel meter for each heater and daily records of fuel use, or provide District approved documentation demonstrating how the fuel flow is limited to the permitted rating. [District NSR Rule] Federally Enforceable Through Title V Permit
36. All gases from diesel stripper, diesel hydrogenation flash drum, and sour water stripper tank shall be sent to MEA section for sulfur compound removal except during plant shutdown or breakdown conditions pursuant to Rule 1100 when it shall be burned in the flare. [District NSR Rule] Federally Enforceable Through Title V Permit
37. Flare equipped with flared gas flow meter serving hydrogen plant gas, purchased natural gas, and all gases from diesel stripper, diesel hydrogenation flash drum, sour water stripper tank, vapors collected from S-36-104, and gases from heavy oil hydrofinisher processing unit on S-36-109. These gases shall only be flared during breakdown conditions pursuant to Rule 1100 and during plant shutdowns. [District Rule 4001] Federally Enforceable Through Title V Permit
38. Hydrogen sulfide analyzer/recorder shall be located at exit of tail gas unit prior to thermal oxidizer 10-F-02 and shall be operational and utilized except during bypass of the tail gas treating unit during startup or shutdown. [District NSR Rule] Federally Enforceable Through Title V Permit
39. Bypass of the tailgas unit will occur only when natural gas is supplied to the main reactor furnace during startup or shutdown of the sulfur recovery unit or tail gas treating unit. [District NSR Rule] Federally Enforceable Through Title V Permit
40. Pressure in sour water tank and light naphtha tanks shall be maintained above 15 psig. Sour water tank pressure relief valve shall be set at 40 psig and the light naphtha pressure relief valves shall be set at 50 psig and shall vent to atmosphere. [District Rule 4001] Federally Enforceable Through Title V Permit
41. Light naphtha liquid from overhead accumulator shall be sent to light naphtha pressure storage vessels. [District NSR Rule] Federally Enforceable Through Title V Permit
42. Overhead accumulator offgas shall be sent to the fuel gas compressor for introduction into fuel gas system, or shall be flared under plant breakdown conditions pursuant to Rule 1100. [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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43. All sour water must be treated in sour water stripper prior to being exposed to the atmosphere. [District NSR Rule] Federally Enforceable Through Title V Permit
44. Sour water pressure tank shall vent to sulfur plant or shall vent to flare during breakdown conditions pursuant to Rule 1100. [District NSR Rule] Federally Enforceable Through Title V Permit
45. If thermal oxidizer 10-F-2 is inoperative, sour water shall not be pumped from sour water storage vessel and diesel hydrotreating unit and heavy oil hydrofinishing processing unit shall be shut down. [District NSR Rule] Federally Enforceable Through Title V Permit
46. Sulfur recovery unit and tailgas unit overall sulfur removal shall be no less than 99.8% by weight except during startup or shutdown conditions. [District NSR Rule] Federally Enforceable Through Title V Permit
47. The inlet gas stream to the thermal oxidizer shall not contain greater than 10 ppmv H₂S on a three hour rolling average basis except during startup or shutdown conditions of the sulfur recovery unit or tail gas treating unit. [District NSR Rule] Federally Enforceable Through Title V Permit
48. Startup and shutdown conditions for the sulfur recovery unit and tail gas treating unit combined shall not occur for more than 12 hours in any day. [District NSR Rule] Federally Enforceable Through Title V Permit
49. Thermal oxidizer sulfur compound emissions during startup or shutdown conditions of the sulfur recovery unit or tail gas treating unit shall not exceed 2000 ppm as SO₂. [District NSR Rule and 4801] Federally Enforceable Through Title V Permit
50. SO_x emissions from the sulfur recovery unit and tail gas treating unit through the thermal oxidizer shall not exceed 109.6 pounds per day. [District NSR Rule] Federally Enforceable Through Title V Permit
51. Only natural gas consisting primarily of methane and less than 5% by weight hydrocarbons heavier than butane and PSA offgas shall be combusted in reformer furnace #H-101. [District NSR Rule] Federally Enforceable Through Title V Permit
52. VOC emissions from fugitive emissions sources in this permit unit shall not exceed 27.99 lb per day. [District NSR Rule] Federally Enforceable Through Title V Permit
53. Emissions from process heater H-101 shall not exceed any of the following: PM₁₀: 0.0137 lb/MMBtu; NO_x (as NO₂): 0.036 lb/MMBtu or 30 ppmv @ 3% O₂; VOC: 0.0040 lb/MMBtu; or CO: 0.015 lb/MMBtu. [District NSR Rule, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
54. Emissions from process heater H-201 shall not exceed any of the following: PM₁₀: 0.0137 lb/MMBtu; NO_x (as NO₂): 0.0353 lb/MMBtu or 29.4 ppmv @ 3% O₂; VOC: 0.0040 lb/MMBtu; or CO: 137 ppmv @ 3% O₂. [District NSR Rule] Federally Enforceable Through Title V Permit
55. Upon recommencing operation, emissions from process heater H-501 shall not exceed any of the following: PM₁₀: 0.0137 lb/MMBtu; NO_x (as NO₂): 0.036 lb/MMBtu or 30 ppmv @ 3% O₂; VOC: 0.0040 lb/MMBtu; or CO: 137 ppmv @ 3% O₂. [District NSR Rule, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
56. Emissions from process heaters H-602 shall not exceed any of the following: PM₁₀: 0.0137 lb/MMBtu; NO_x (as NO₂): 0.036 lb/MMBtu or 30 ppmv @ 3% O₂; VOC: 0.0040 lb/MMBtu; or CO: 137 ppmv @ 3% O₂. [District NSR Rule, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
57. Emissions from process heater H-601 shall not exceed any of the following: PM₁₀: 0.0137 lb/MMBtu; NO_x (as NO₂): 0.036 lb/MMBtu or 30 ppmv @ 3% O₂; VOC: 0.0040 lb/MMBtu; or CO: 400 ppmv @ 3% O₂. [District NSR Rule, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
58. Emissions from flare shall not exceed any of the following: PM₁₀: 2.7 lb/day, SO_x: 104.9 lb/day, NO_x: 6.8 lb/day, VOC: 7.4 lb/day, or CO: 70.3 lb/day. [District NSR Rule] Federally Enforceable Through Title V Permit
59. Sulfur content of PSA offgas combusted in reformer furnace H-101 shall not exceed 0.0123 grains/dscf. Sampling of PSA offgas to determine compliance with sulfur content limit shall be conducted annually. [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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60. Upon recommencing operation, sulfur content of fuel gas combusted by 1st fractionator feed heater H-501 shall not exceed 0.10 grains/dscf as determined on a rolling three (3) hour average basis. [40 CFR 60.104(a)(1)] Federally Enforceable Through Title V Permit
61. Sulfur content of fuel gas combusted by 2nd fractionator feed heater H-602 and heater H-201 shall not exceed 0.0553 grains/dscf as determined on a rolling three (3) hour average basis. [District NSR Rule and 40 CFR 60.104(a)(1)] Federally Enforceable Through Title V Permit
62. Sulfur content of fuel gas combusted by 3rd fractionator feed heater H-601 shall not exceed 0.069 grains/dscf as determined on a rolling three (3) hour average basis. [District NSR Rule and 40 CFR 60.104(a)(1)] Federally Enforceable Through Title V Permit
63. Permittee shall maintain accurate records of number of fugitive emissions components and calculated emissions using Technical Guidance Document to AB2588 for refineries Tables D1-D3, AP-42 Table 9.1-2, or other District approved emission factors. [District Rule 1070, and 2520, 9.3.2] Federally Enforceable Through Title V Permit
64. Upon recommencing operation, heater H-501 shall be equipped with sampling facilities for source testing in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit
65. All fired equipment, H-101, H-201, H-601, and H-602, shall be equipped with sampling facilities for source testing in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit
66. Source testing of heaters H-101, H-201, H-501, H-601 and H-602 to measure NO_x and CO emissions shall be conducted not less than once every 12 months, except as provided below. [District Rules 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
67. Source testing to measure NO_x and CO emissions shall be conducted not less than once every 36 months if compliance is demonstrated on two consecutive annual tests. [District Rules 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
68. If permittee fails any compliance demonstration for NO_x or CO emission limits when testing not less than once every 36 months, compliance with NO_x and CO emission limits shall be demonstrated not less than once every 12 months. [District Rules 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
69. Compliance demonstration (source testing) shall be by District witnessed, or authorized, sample collection by ARB certified testing laboratory. [District Rule 1081] Federally Enforceable Through Title V Permit
70. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
71. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
72. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or ARB Method 100, and stack gas oxygen - EPA Method 3 or 3A or ARB Method 100. [District Rules 1081, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
73. Permittee shall comply with all applicable notification, reporting, recordkeeping, testing, and maintenance requirements of Rule 4001 (40 CFR 60; subparts J, GGG, and QQQ). Heaters H-201, H-501, H-601, H-602, and the flare are subject to Subpart J. [District Rule 4001] Federally Enforceable Through Title V Permit
74. Equipment shall include monitoring system as required by 40 CFR 60, Subpart J for monitoring and recording of sulfur content (dry basis) of fuel gas (except PUC regulated natural gas, psa offgas, and combinations of only PUC gas and psa offgas) prior to combustion. [District Rule 4001] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
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75. The combustion in the thermal oxidizer, or other fuel gas combustion device of gases released as a result of start-up, shutdown, or malfunction is exempt from the 0.1 gr/dscf H₂S requirement. The combustion in the flare of gases released as a result of start-up, shutdown, upset, malfunction, or the result of relief valve leakage is exempt from the 0.1 gr/dscf H₂S requirement. [District Rule 4001, Subpart J] Federally Enforceable Through Title V Permit
76. Continuous emissions monitoring system shall be installed, calibrated, operated, and reported according to EPA guidelines as specified under 40 CFR 60, Subpart J, Specification 7, and general requirements. CEM results shall be calculated on a rolling three (3) hour basis. [District Rule 4001] Federally Enforceable Through Title V Permit
77. PSA gas monitoring shall be maintained pursuant to EPA approved alternate monitoring, one analysis for the sulfur content of the feedstock gas each reporting period and a statement confirming that the pipeline natural gas is the only feed to the hydrogen plant. [District Rule 4001] Federally Enforceable Through Title V Permit
78. Permittee shall maintain accurate daily records of amount of gas burned in the flare. [District Rule 1070, and 2520, 9.3.2] Federally Enforceable Through Title V Permit
79. Permittee shall sample flared gas for H₂S content twice daily. [District Rule 1070, and 2520, 9.3.2] Federally Enforceable Through Title V Permit
80. Permittee shall maintain accurate records of fuel consumption data, operational data, startup and shutdown condition frequency and duration of the sulfur recovery unit, and gas sulfur content to verify daily emission limit compliance. [District NSR Rule and 1070] Federally Enforceable Through Title V Permit
81. All records required by this permit shall be made available for District inspection upon request for a period of five years. [District Rule 1070, and 2520, 9.4.2] Federally Enforceable Through Title V Permit
82. Operator shall not burn in any fuel gas combustion device any fuel gas that contains hydrogen sulfide (H₂S) in excess of 0.10 gr/dscf (230 mg/dscm). [40 CFR Part 60, subpart J, 60.104(a)(1)] Federally Enforceable Through Title V Permit
83. Operator shall report all rolling 3-hour periods during which the average concentration of H₂S as measured by the H₂S continuous monitoring system exceeds 0.10 gr/dscf (230 mg/dscm). [40 CFR Part 60, subpart J, 60.105(e)(3)(ii)] Federally Enforceable Through Title V Permit
84. Operator shall determine compliance with the H₂S standard using EPA Method 11. [40 CFR Part 60, subpart J, 60.106(e)] Federally Enforceable Through Title V Permit
85. All required source testing shall conform to the compliance testing procedures described in District Rule 1081(Amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit
86. Copies of all fuel invoices, gas purchase contracts, supplier certifications, and test results used to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted and all dates on which unit is fired on any noncertified fuel. [District Rule 2520, 9.4.2 and 40 CFR 60.48c(g)] Federally Enforceable Through Title V Permit
87. Operator shall maintain all records for at least five years and conform to the recordkeeping requirements described in District Rule 2520. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
88. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
89. Emissions of sulfur compounds from any of the following units, H-101, H-201, H-501, H-601, H-602 shall not exceed 200 lb per hour, calculated as SO₂. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rule 2520, 9.3.2 and District Rule 4301, 5.2.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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90. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
91. When complying with SO_x emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6B; or Method 8; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, a grab sample analysis by GC-FPD/TCD performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months; however, annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
92. If the unit is fired on noncertified gaseous fuel and compliance with SO_x emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
93. If fuel analysis is used to demonstrate compliance with conditions of this permit, the fuel higher heating value for each fuel shall be certified by a third party fuel supplier or determined by: ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 4305, 6.2.1; 4306, 6.2.1, and 4351, 6.2.1] Federally Enforceable Through Title V Permit
94. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period (Kern County Rule 407). To demonstrate compliance with this requirement the operator shall do one of the following: fire the unit only on PUC or FERC regulated natural gas; or test the sulfur content of each fuel source and demonstrate the sulfur content does not exceed 3.3% by weight for gaseous fuels; or determine that the concentration of sulfur compounds in the exhaust does not exceed the concentration limit by a combination of source testing and fuel analysis. [District Rules 2520, 9.3.2 and 4801] Federally Enforceable Through Title V Permit
95. Nitrogen oxide (NO_x) emission concentrations in ppmv shall be referenced at dry stack gas conditions, and shall be calculated to 3.00 percent by volume stack gas oxygen and averaged over 60 minutes, and lb/MMBtu rates shall be calculated as lb NO₂/MMBtu of heat input (hhv). [District Rules 4305, 5.0, 8.2; 4306, 8.1; and/or 4351, 8.1] Federally Enforceable Through Title V Permit
96. Emissions from H-101, H-201, H-501, H-601, and H-602 shall be calculated using the arithmetic mean, pursuant to District Rule 1081 (Amended December 16, 1993), of 3 forty-minute test runs for NO_x and CO. [District Rule 1081] Federally Enforceable Through Title V Permit
97. The flare shall be operated according to the manufacturer's specifications, a copy of which shall be maintained on site. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
98. Flares shall only be used with the net heating value of the gas being combusted being 200 Btu/scf or greater if the flare is non-assisted; or with the net heating value of the gas being combusted being 300 Btu/scf or greater if the flare is air-assisted or steam-assisted. [40 CFR 60.18 (c)(3)] Federally Enforceable Through Title V Permit
99. The net heating value of the gas being combusted in a flare shall be calculated annually, pursuant to 40 CFR 60.18(f)(3) and using EPA Method 18, ASTM D1946, and ASTM D2382. [40 CFR 60.18 (f)(3-6)] Federally Enforceable Through Title V Permit
100. Air-assisted flares shall be operated with an exit velocity less than V_{max}, as determined by the equation specified in paragraph 40 CFR 60.18 (f)(6). [40 CFR 60.18 (c)(5)] Federally Enforceable Through Title V Permit
101. Nonassisted and steam-assisted flares shall be operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18 (f)(4), less than 60 ft/sec, except as provided in 40 CFR 60.18 (c)(4)(ii) and (iii). [40 CFR 60.18 (c)(4)(i)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

102. Nonassisted and steam-assisted flares may be operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18 (f)(4), equal to or greater than 60 ft/sec, but less than 400 ft/sec if the net heating value of the gas being combusted is greater than 1,000 Btu/scf. [40 CFR 60.18 (c)(4)(ii)] Federally Enforceable Through Title V Permit
103. Nonassisted and steam-assisted flares may be operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18 (f)(4), less than the velocity, V_{max} , as determined by the equation specified in paragraph 40 CFR 60.18 (f)(5), and less than 400 ft/sec. [40 CFR 60.18 (c)(4)(iii)] Federally Enforceable Through Title V Permit
104. The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip. [40 CFR 60.18 (f)(4)] Federally Enforceable Through Title V Permit
105. Flares shall be operated with a flame present at all times, and kept in operation when emissions may be vented to them. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. [40 CFR 60.18 (c)(2), 60.18 (e), and 60.18 (f)(2)] Federally Enforceable Through Title V Permit
106. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
107. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of District Rule 4801, section 3.1 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
108. Heat exchangers 11-E-01A and 11-E-01B shall not operate concurrently. [District Rule 2010] Federally Enforceable Through Title V Permit
109. Permittee shall keep an accurate record of dates of inspection and monitoring, components inspected and monitored, and results of fugitive emissions calculations for compliance with the daily emission limit of the caustic scrubber S-303, caustic recirculation vessels A and B, and caustic recirculation pumps P-970-A and P-970-B. Such records shall be made readily available for District inspection upon request for a period of five years. [District Rules 1070 and District NSR Rule] Federally Enforceable Through Title V Permit
110. The flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311, 5.2] Federally Enforceable Through Title V Permit
111. The outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rule 4311, 5.3] Federally Enforceable Through Title V Permit
112. Except for flares equipped with a flow-sensing ignition system, a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an alternative equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated. [District Rule 4311, 5.4] Federally Enforceable Through Title V Permit
113. Flares that use flow-sensing automatic ignition systems and which do not use a continuous flame pilot shall use purge gas for purging. [District Rule 4311, 5.5] Federally Enforceable Through Title V Permit
114. Flaring is prohibited unless it is consistent with an approved flare minimization plan (FMP), and all commitments listed in that plan have been met. This standard shall not apply if the APCO determines that the flaring is caused by an emergency and is necessary to prevent an accident, hazard or release of vent gas directly to the atmosphere. [District Rule 5.8] Federally Enforceable Through Title V Permit
115. The operator shall minimize sulfur dioxide flare emissions to less than 1.50 tons per million barrels of crude processing capacity, calculated as an average over one calendar year. [District Rule 4311, 5.9.1] Federally Enforceable Through Title V Permit
116. The operator shall monitor the vent gas flow to the flare with a flow measuring device. [District Rule 4311, 5.10] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

117. The operator shall maintain and retain on-site for a minimum of five years, and made available to the APCO, ARB, and EPA a copy of the approved flare minimization plan, a copy of annual reports submitted to the District, and all applicable flare monitoring data collected as required by this permit. [District Rule 4311, 6.1] Federally Enforceable Through Title V Permit
118. The operator of a flare subject to flare minimization shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, whichever ever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time. [District Rule 4311, 6.2] Federally Enforceable Through Title V Permit
119. Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare minimization shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Section 3.0 that occurred during the previous 12 month period. The report shall be submitted within 30 days following the end of the twelve month period of the previous year. The report shall include, but is not limited to all of the following: the results of an investigation to determine the primary cause and contributing factors of the flaring event; any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented; if appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and the date, time, and duration of the flaring event. [District Rule 4311, 6.2.2] Federally Enforceable Through Title V Permit
120. Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare monitoring requirements shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report shall include the following: the total volumetric flow of vent gas in standard cubic feet for each day; hydrogen sulfide content, methane content, and hydrocarbon content of vent gas composition; if vent gas composition is monitored by a continuous analyzer or analyzers, average total hydrocarbon content by volume, average methane content by volume, and depending upon the analytical method used, total reduced sulfur content by volume or hydrogen sulfide content by volume of vent gas flared for each hour of the month; if the flow monitor used measures molecular weight, the average molecular weight for each hour of each month; for any pilot and purge gas used, the type of gas used, the volumetric flow for each day and for each month; and the means used to determine flow; flare monitoring system downtime periods, including dates and times; for each day and for each month provide calculated sulfur dioxide emissions; and a flow verification report for each flare subject to this rule. The flow verification report shall include flow verification testing. [District Rule 4311, 6.2.3] Federally Enforceable Through Title V Permit
121. Total hydrocarbon content and methane content of vent gas shall be determined using ASTM Method D 1945-96, ASTM Method UOP 539-97, EPA Method 18, or EPA Method 25A or 25B. [District Rule 4311, 6.3.4.1] Federally Enforceable Through Title V Permit
122. Vent gas flow shall be determined using a verification method recommended by the manufacturer of the flow monitoring equipment installed. [District Rule 4311, 6.3.5.2] Federally Enforceable Through Title V Permit
123. The operator shall monitor sulfur content of the vent gas to the flare using a colorimetric tube system on a daily basis, and monitor vent gas hydrocarbon on a weekly basis by collecting samples and having them tested. [District Rule 4311, 6.6.5] Federally Enforceable Through Title V Permit
124. The operator shall provide the APCO with access to the flare monitoring system to collect the vent gas samples. [District Rule 4311, 6.6.7] Federally Enforceable Through Title V Permit
125. The operator shall monitor the volumetric flows of the flare's purge and pilot gases with flow measuring devices or other parameters as specified on the Permit to Operate so that volumetric flows of pilot and purge gas may be calculated based on pilot design and the parameters monitored. [District Rule 4311, 6.7] Federally Enforceable Through Title V Permit
126. The operator shall monitor and record the water level and pressure of the water seal that services the flare daily. [District Rule 4311, 6.8] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

127. The operator shall report periods of flare monitoring system inoperation greater than 24 continuous hours by the following working day, followed by notification of resumption of monitoring. Periods of inoperation of monitoring equipment shall not exceed 14 days per any 18-consecutive-month period. Periods of flare monitoring system inoperation do not include the periods when the system feeding the flare is not operating. [District Rule 4311, 6.9.1] Federally Enforceable Through Title V Permit
128. The operator shall install and maintain equipment that records a real-time digital image of the flare and flame at a frame rate of no less than one frame per minute. The recorded image of the flare shall be of sufficient size, contrast, and resolution to be readily apparent in the overall image or frame. The image shall include an embedded date and time stamp. The equipment shall archive the images for each 24-hour period. In lieu of video monitoring the operator may use an alternative monitoring method that provides data to verify date, time, vent gas flow, and duration of flaring events. [District Rule 4311, 6.10] Federally Enforceable Through Title V Permit

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

Appendix B

PE1 for S-36-1-13, and PE2 for Crude Heater #4 with 15 ppm Sulfur backup fuel

The daily and annual emissions for the 52.2 MMBtu/hr Crude Oil heater #4 and the 27 MMBtu/hr Draft Vacuum Heater #4 are based on oil-firing capacity for 216 hours per year (permit limit) and gas-firing for 8,544 hours per year (remainder).

1. 52.2 MMBtu/hour Crude Oil Heater #4

Emission Factors are taken from the most recent Permit to Operate S-36-1-13. The oil firing emission factors are converted in the following table.

HHV of Oil = 140,000 Btu/gallon

NO_x and CO conversions for oil and gas (ppmv to lb/MMBtu) were done on District Calculator. Note that the maximum daily emissions are based on firing oil at 24 hr/day.

Heater 4 Emission Factor Conversions for Oil		
Pollutant	Permit Limit	Converted to lb/MMBtu
NO _x	0.215 lb/MMBtu	0.215 lb/MMBtu
SO _x	172.7 lb/1,000 gal	1.23 lb/MMBtu
PM ₁₀	11.56 lb/1,000 gal	0.083 lb/MMBtu
CO	400 ppmv @ 3% O ₂	0.312 lb/MMBtu
VOC	1.12 lb/1,000 gal	0.008 lb/MMBtu

Heater 4 Emission Factors		
Pollutant	Oil (lb/MMBtu)	Gas (lb/MMBtu)
NO _x	0.215	0.036
SO _x	1.23	0.00285*
PM ₁₀	0.083	0.004
CO	0.312	0.2956
VOC	0.008	0.01

*Gas is PUC Quality.

Daily PE1 for the 52.2 MMBtu/hr Crude Oil Heater #4				
Pollutant	Emission Factors (lb/MMBtu)	Rating (MMBtu/hr)	Daily Hours of Operation	PE2 Total (lb/day)
NO _x	0.215	52.2	24	269.4
SO _x	1.23	52.2	24	1540.9
PM ₁₀	0.083	52.2	24	104.0
CO	0.312	52.2	24	390.9
VOC*	0.01	52.2	24	12.5

*The highest daily potential for VOC exists when this unit is fired on gas.

Annual PE1 for the 52.2 MMBtu/hr Crude Oil Heater #4: Oil				
Pollutant	Emission Factors (lb/MMBtu)	Rating (MMBtu/hr)	Annual Hours of Operation	PE2 (lb/Year)
NO _x	0.215	52.2	216	2424.2
SO _x	1.23	52.2	216	13868.5
PM ₁₀	0.083	52.2	216	935.8
CO	0.312	52.2	216	3517.9
VOC	0.008	52.2	216	90.2

Annual PE1 for the 52.2 MMBtu/hr Crude Oil Heater #4: Gas				
Pollutant	Emission Factors (lb/MMBtu)	Rating (MMBtu/hr)	Annual Hours of Operation	PE2 (lb/Year)
NO _x	0.036	52.2	8,544	16055.9
SO _x	0.00285	52.2	8,544	1271.1
PM ₁₀	0.004	52.2	8,544	1784.0
CO	0.2956	52.2	8,544	131836.7
VOC	0.01	52.2	8,544	4460.0

Annual PE1 for the 52.2 MMBtu/hr Crude Oil Heater #4: TOTAL			
Pollutant	Oil (lb/year)	Gas (lb/year)	TOTAL (lb/year)
NO _x	2,424	16,056	18,480
SO _x	13,869	1,271	15,140
PM ₁₀	936	1,784	2,720
CO	3,518	131,837	135,355
VOC	90	4,460	4,550

2. 27 MMBtu/hr Draft Vacuum Heater #VH-4

Vacuum Heater VH-4 Emission Factor Conversions for Oil		
Pollutant	Permit Limit	Converted to lb/MMBtu
NO _x	0.215 lb/MMBtu	0.215 lb/MMBtu
SO _x	172.7 lb/1,000 gal	1.23 lb/MMBtu
PM ₁₀	11.56 lb/1,000 gal	0.083 lb/MMBtu
CO	400 ppmv @ 3% O ₂	0.312 lb/MMBtu
VOC	1.12 lb/1,000 gal	0.008 lb/MMBtu

Vacuum Heater #VH-4 Emission Factors		
Pollutant	Oil (lb/MMBtu)	Gas (lb/MMBtu)
NO _x	0.215	0.036
SO _x	1.23	0.00285
PM ₁₀	0.083	0.004
CO	0.312	0.2956
VOC	0.008	0.0075

Daily PE1 for the 27 MMBtu/hr Vacuum Heater # VH-4				
Pollutant	Emission Factors (lb/MMBtu)	Rating (MMBtu/hr)	Daily Hours of Operation	PE2 Total (lb/day)
NO _x	0.215	27	24	139.3
SO _x	1.23	27	24	797.0
PM ₁₀	0.083	27	24	53.8
CO	0.312	27	24	202.2
VOC	0.008	27	24	5.2

Annual PE1 for the 27 MMBtu/hr Vacuum Heater # VH-4: Oil				
Pollutant	Emission Factors (lb/MMBtu)	Rating (MMBtu/hr)	Annual Hours of Operation	PE2 (lb/Year)
NO _x	0.215	27	216	1253.9
SO _x	1.23	27	216	7173.4
PM ₁₀	0.083	27	216	484.1
CO	0.312	27	216	1819.6
VOC	0.008	27	216	46.7

Annual PE1 for the 27 MMBtu/hr Vacuum Heater # VH-4: Gas				
Pollutant	Emission Factors (lb/MMBtu)	Rating (MMBtu/hr)	Annual Hours of Operation	PE2 (lb/Year)
NO _x	0.036	27	8,544	8304.8
SO _x	0.00285	27	8,544	657.5
PM ₁₀	0.004	27	8,544	922.8
CO	0.2956	27	8,544	68191.4
VOC	0.0075	27	8,544	1730.2

Annual PE1 for the 27 MMBtu/hr Vacuum Heater # VH-4: TOTAL			
Pollutant	Oil (lb/year)	Gas (lb/year)	TOTAL (lb/year)
NO _x	1,254	8,305	9,559
SO _x	7,173	676	7,849
PM ₁₀	484	923	1,407
CO	1,820	68,191	70,011
VOC	47	1,730	1,777

C. PE2 for the 52.2 Crude Oil Heater #4 corrected for Rule 4320 Back-up fuel Sulfur Limit of 15 ppmw.

Pursuant to Rule 4320, the sulfur content of the diesel fuel is limited to 0.0015% by weight. The emission factor is calculated as follows.

$$\frac{15 \text{ lb} \cdot \text{S}}{1,000,000 \text{ lb} \cdot \text{fuel}} \times \frac{7.1 \text{ lb} \cdot \text{fuel}}{\text{gallon}} \times \frac{2 \text{ lb} \cdot \text{SO}_2}{\text{lb} \cdot \text{S}} \times \frac{1 \text{ gallon}}{140,000 \text{ Btu}} \times \frac{1,000,000}{\text{MM}} = 0.00152 \frac{\text{lb} \cdot \text{SO}_2}{\text{MMBtu}}$$

Heater 4 Emission Factors		
Pollutant	Oil (lb/MMBtu)	Gas (lb/MMBtu)
NO _x	0.215	0.036
SO _x	0.00152	0.00285
PM ₁₀	0.083	0.004
CO	0.312	0.2956
VOC	0.008	0.01

Daily PE2 for the 52.2 MMBtu/hr Crude Oil Heater #4				
Pollutant	Emission Factors (lb/MMBtu)	Rating (MMBtu/hr)	Daily Hours of Operation	PE2 Total (lb/day)
NO _x	0.215	52.2	24	269.4
SO _x	0.00285	52.2	24	3.6
PM ₁₀	0.083	52.2	24	104.0
CO	0.312	52.2	24	390.9
VOC*	0.01	52.2	24	12.5

*The highest daily potential for VOC exists when this unit is fired on gas.

Annual PE2 for the 52.2 MMBtu/hr Crude Oil Heater #4: Oil				
Pollutant	Emission Factors (lb/MMBtu)	Rating (MMBtu/hr)	Annual Hours of Operation	PE2 (lb/Year)
NO _x	0.215	52.2	216	2424.2
SO _x	0.00152	52.2	216	17.1
PM ₁₀	0.083	52.2	216	935.8
CO	0.312	52.2	216	3517.9
VOC	0.008	52.2	216	90.2

Annual PE2 for the 52.2 MMBtu/hr Crude Oil Heater #4: Gas				
Pollutant	Emission Factors (lb/MMBtu)	Rating (MMBtu/hr)	Annual Hours of Operation	PE2 (lb/Year)
NO _x	0.036	52.2	8,544	16055.9
SO _x	0.00285	52.2	8,544	1271.1
PM ₁₀	0.004	52.2	8,544	1784.0
CO	0.2956	52.2	8,544	131836.7
VOC	0.01	52.2	8,544	4460.0

Annual PE2 for the 52.2 MMBtu/hr Crude Oil Heater #4: TOTAL

Pollutant	Oil (lb/year)	Gas (lb/year)	TOTAL (lb/year)
NO_x	2,424	16,056	18,480
SO_x	17.1	1,271	1,288
PM₁₀	936	1,784	2,720
CO	3,518	131,837	135,355
VOC	90	4,460	4,550

Appendix C

San Joaquin Valley Air Pollution Control District

Risk Management Review

To: Steve Roeder – Permit Services
 From: Cheryl Lawler – Technical Services
 Date: November 15, 2011
 Facility Name: San Joaquin Refining
 Location: Bakersfield
 Application #(s): S-36-1-16, 41-18, 51-19
 Project #: S-1113297

A. RMR SUMMARY

RMR Summary			
Categories	Ammonia Slips (Units 1-16, 41-18, & 51-19)	Project Totals	Facility Totals
Prioritization Score	1.08	1.03	>1
Acute Hazard Index	0.00	0.00	0.05
Chronic Hazard Index	0.01	0.01	0.03
Maximum Individual Cancer Risk	N/A*	N/A*	4.31E-06
T-BACT Required?	No		
Special Permit Conditions?	Yes		

*The Maximum Individual Cancer Risk was not calculated since there are no risk factors associated with any of the Hazardous Air Pollutants (HAPs) under analysis.

Proposed Permit Conditions

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

Units 1-16, 41-18, 51-19

- {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
N

I. Project Description

Technical Services received a request on October 24, 2011, to perform a Risk Management Review for three existing heaters adding ammonia slips.

II. Analysis

Toxic emissions were calculated using ammonia emission rates calculated and supplied by the processing engineer. In accordance with the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905-1, March 2, 2001), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the project was greater than 1.0 (see RMR Summary Table); therefore, a refined Health Risk Assessment was required and performed for the project. AERMOD was used with point source parameters outlined below and concatenated 5-year meteorological data from Bakersfield to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Chronic and Acute Hazard Indices and the Carcinogenic Risk.

The following parameters were used for the review:

Analysis Parameters			
Source Type	Point	Closest Receptor (m)	98.45
Stack Height (m)	16.3, 9.14, 7.16	Type of Receptor	Business
Stack Diameter (m)	1.52, 0.49, 0.61	Location Type	Urban
Stack Gas Temperature (K)	589	Stack Gas Velocity (m/sec)	10.97

III. Conclusions

The acute and chronic indices are below 1.0; and there is no Cancer Risk associated with any of the HAPs under review. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT).

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

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.

Appendix D Emission Profiles

SJVUAPCD
SOUTHERN

Application Emissions

11/28/11
8:56 am

Permit #: S-36-1-16	Last Updated
Facility: SAN JOAQUIN REFINING COMPANY	11/28/2011 ROEDERS

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	21082.0	1962.0	3666.0	205365.0	6324.0
Daily Emis. Limit (lb/Day)	276.5	5.4	103.6	582.7	17.4
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	-1739.0	-5257.0	-115.0	0.0	-1.0
Q2:	-1739.0	-5257.0	-115.0	0.0	-1.0
Q3:	-1739.0	-5257.0	-115.0	0.0	-1.0
Q4:	-1739.0	-5257.0	-115.0	0.0	-1.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-36-41-18	Last Updated
Facility: SAN JOAQUIN REFINING COMPANY	11/28/2011 ROEDERS

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	3011.0	780.0	2081.0	20258.0	1506.0
Daily Emis. Limit (lb/Day)	8.3	2.1	5.7	55.5	4.1
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	-2325.0	0.0	-594.0	-9109.0	0.0
Q2:	-2325.0	0.0	-594.0	-9109.0	0.0
Q3:	-2325.0	0.0	-594.0	-9109.0	0.0
Q4:	-2325.0	0.0	-594.0	-9109.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-36-51-19	Last Updated
Facility: SAN JOAQUIN REFINING COMPANY	11/28/2011 ROEDERS

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	19855.0	86643.0	11540.0	82258.0	15999.0
Daily Emis. Limit (lb/Day)	54.4	230.0	31.6	190.3	43.8
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	-2579.0	0.0	0.0	0.0	0.0
Q2:	-2579.0	0.0	0.0	0.0	0.0
Q3:	-2579.0	0.0	0.0	0.0	0.0
Q4:	-2579.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Appendix E

Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
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PERMIT NO: S-36-1-16

LEGAL OWNER OR OPERATOR: SAN JOAQUIN REFINING COMPANY
MAILING ADDRESS: PO BOX 5576
BAKERSFIELD, CA 93388

LOCATION: STANDARD AND SHELL ST
BAKERSFIELD, CA 93308

SECTION: NE24 TOWNSHIP: 29S RANGE: 27E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 79.2 MMBTU/HR ATMOSPHERIC/VACUUM CRUDE UNIT #4 WITH PREFLASH COLUMN, FRACTIONATOR, VACUUM DISTILLATION COLUMN WITH MECHANICAL VACUUM PRODUCING SYSTEM, 27 MMBTU/HR GAS/OIL/WASTE GAS FIRED NATURAL DRAFT VACUUM HEATER #VH-4 WITH THREE ZEECO CLSF 11 LOW NOX BURNERS AND 52.2 MMBTU/HR GAS/OIL FIRED NATURAL DRAFT HEATER #4 WITH ZEECO MODEL CLSF LOW NOX BURNERS: INSTALL SCR AND 0.9 MMBTU/HR REHEAT BURNER ON VACUUM HEATER #VH-4 FOR RULE 4320 COMPLIANCE AND REMOVE OIL-FIRING PROVISIONS FROM HEATER #VH-4

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from the 52.2 MMBTU/hr Crude Heater #4 for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit
4. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4305] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director APCO

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DAVID WARNER, Director of Permit Services
S-36-1-16 Dec 5 2011 9:14AM - ROEDERS Joint Inspection NOT Required

5. The duration of each startup and shutdown period for the 52.2 MMBtu/hr crude heater #4 shall not exceed 8.0 hours and 2.0 hours respectively. Short term NOx and CO emissions limits (lb/MM Btu or ppmv @ 3% O2) shall not apply during periods of startup and and shutdown. [District Rules 2201, 4305, 4360 and 4351] Federally Enforceable Through Title V Permit
6. The duration of each startup and shutdown period for the 27.0 MMBtu/hr vacuum heater VH-4 shall not exceed 9.0 hours and 2.0 hours respectively. Short term NOx and CO emissions limits (lb/MM Btu or ppmv @ 3% O2) shall not apply during periods of startup and and shutdown. [District Rules 2201, 4305, 4360 and 4351] Federally Enforceable Through Title V Permit
7. All equipment shall be constructed, maintained, and operated according to the specifications and plans contained in the permit application except as otherwise specified herein. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Vacuum Heater #VH-4 shall be fired on natural gas only. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
9. Natural gas combusted in crude heater #4 and the vacuum heater #VH-4 shall be of PUC quality. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Vacuum Heater #VH-4 shall be equipped with a SCR system and a 0.9 MMBtu/hr reheat burner. The heater shall not be operated unless the SCR system is operating. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The exhaust stack from the SCR unit shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
12. Ammonia slip from the SCR unit shall not exceed 10 ppmv @ 3% O2. [District Rule 4102]
13. Monthly records of the total amount of ammonia used by the SCR system shall be maintained. [District Rules 1070 and 2520] Federally Enforceable Through Title V Permit
14. The burning of fuel oil in heater #4 is limited to 168 cumulative hours in a calendar year plus 48 hour per calendar year for equipment testing of operation during natural gas curtailments. [District Rules 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
15. Sulfur content of liquid back-up fuel for the 52.2 MMBtu/hr heater #4 shall not exceed 15 ppmw. [District Rule 4320] Federally Enforceable Through Title V Permit
16. Vacuum system exhaust gas emissions shall be controlled by incineration in the 27 MMBtu/hr vacuum heater (VH-4). [District Rule 4453 and Kern County Rule 414.2] Federally Enforceable Through Title V Permit
17. Heat exchangers utilizing cooling water shall be operated and maintained as to prevent VOC emissions from cooling towers. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Gas firing emissions from 52.2 MMBtu/hr crude heater #4 shall not exceed any of the following: PM10: 0.004 lb/MMBtu; VOC: 0.01 lb/MMBtu; NOx (as NO2) - 30 ppmv @ 3% O2 or 0.036 lb/MMBtu; or CO - 400 ppmv @ 3% O2. [District Rules 2201, 2520, 9.4.2, 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
19. Oil-fired emissions for the 52.2 MMBtu/hr Crude Heater #4 shall not exceed any of the following limits: 0.215 lb-NOx/MMBtu, 0.0015 lb-SOx/MMBtu, 0.083 lb-PM10/MMBtu, 400 ppmv CO @ 3% O2 (0.312 lb-CO/MMBtu) or 0.008 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
20. Emissions from 27 MMBtu/hr vacuum heater shall not exceed any of the following limits: 0.011 lb-NOx/MMBtu (9 ppmv @ 3% O2), 0.00285 lb-SOx/MMBtu, 0.004 lb-PM10/MMBtu, 0.296 lb-CO/MMBtu (400 ppmv @ 3% O2), or 0.0075 lb-VOC/MMBtu (17.8 ppmv @ 3% O2). [District Rules 2201, 2520, 9.4.2, 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
21. Source testing to measure NOx and CO emissions from the 27 MMBtu/hr Vacuum Heater #VH-4 shall be conducted within 60 days of initial start-up. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

22. Source testing to measure NO_x and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
23. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
24. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
26. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
27. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
28. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. Fuel sulfur content shall be determined using EPA Method 11 or Method 15, ASTM D 2880, (ASTM) D 6920-03 or ASTM D 5453-99. [District Rule 4320] Federally Enforceable Through Title V Permit
30. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. The permittee shall monitor and record the stack concentration of NH₃ from the SCR unit at least once during each month. This monitoring shall be conducted utilizing Draeger tubes or a District-approved equivalent method at the time NO_x, CO and O₂ readings are taken. 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 one (1) day of restarting the unit unless monitoring has been performed within the last month. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
33. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
34. In stack oxygen monitors are acceptable for O₂ measurement. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

35. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
36. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
37. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. The portable analyzer shall be calibrated daily when in use with a two-point calibration method (zero and span). Calibration shall be performed with certified gases. [District Rule 2520] Federally Enforceable Through Title V Permit
39. Permittee shall maintain records of fuel hhv and cumulative annual fuel use for each heater for a period of at least five years and shall make such records readily available for District inspection upon request. [District Rules 4320 and 4351] Federally Enforceable Through Title V Permit
40. All required source testing shall conform to the compliance testing procedures described in District Rule 1081. [District Rule 1081] Federally Enforceable Through Title V Permit
41. Copies of all fuel invoices, gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted and all dates on which unit is fired on any noncertified fuel. [District Rule 2520] Federally Enforceable Through Title V Permit
42. The operator shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520] Federally Enforceable Through Title V Permit
43. {588} Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
44. Source testing shall be performed using EPA Method 5 while firing on residual oil (including crude or topped crude) to demonstrate compliance with PM emission limits. Source testing shall be performed within 90 days of firing on residual oil unless such testing has been performed within the 12 month period prior to firing on said oil and the test results showed compliance with PM emission limits of this permit. [District Rule 2520] Federally Enforceable Through Title V Permit
45. Emissions of sulfur compounds from each heater shall not exceed 200 lb per hour, calculated as SO₂. [District Rule 4301] Federally Enforceable Through Title V Permit
46. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

47. When complying with SO_x emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6B; or Method 8; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, a grab sample analysis by GC-FPD/TCD performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months; however, annual source testing shall resume if any test fails to show compliance. [District Rule 2520] Federally Enforceable Through Title V Permit
48. If the unit is fired on noncertified gaseous fuel and compliance with SO_x emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520] Federally Enforceable Through Title V Permit
49. If the unit is fired on noncertified liquid fuel and compliance with SO_x emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the liquid fuel being fired in the unit shall be determined using ASTM D 2880, (ASTM) D 6920-03 or ASTM D 5453-99. [District Rule 2520] Federally Enforceable Through Title V Permit
50. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: ASTM D 240 or D 2382 for liquid hydrocarbon fuels; ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
51. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period. [District Rule 4801] Federally Enforceable Through Title V Permit
52. A component shall be considered leaking if one or more of the conditions specified in Sections 5.1.4.1 through 5.1.4.4 of Rule 4455 exist at the facility. For this permit unit, except for pumps and compressors, a minor gas leak shall be defined for any component listed in Rule 4455 Section 3.22 Table 1 in either liquid or gas/vapor service as a reading in excess of 100 ppmv above background up to and including a reading of 10,000 ppmv above background. For pumps, compressors and other component types not specifically listed in Rule 4455 Section 3.22 Table 1 in either liquid or gas/vapor service, a minor gas leak shall be defined as a reading in excess of 500 ppmv above background up to and including a reading of 10,000 ppmv above background. Readings shall be taken as methane using a portable hydrocarbon detection instrument and shall be made in accordance with the methods specified in Section 6.4.1 of Rule 4455. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
53. The operator shall not use any component that leaks in excess of the allowable leak standards of Rule 4455, or is found to be in violation of the provisions specified in Section 5.1.3. A component identified as leaking in excess of an allowable leak standard may be used provided it has been identified with a tag for repair, has been repaired, or is awaiting re-inspection after repair, within the applicable time period specified within the rule. [District Rule Rule 4455, 5.1.1] Federally Enforceable Through Title V Permit
54. Each hatch shall be closed at all times except during sampling or adding of process material through the hatch, or during attended repair, replacement, or maintenance operations, provided such activities are done as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere. [District Rule 4455, 5.1.2] Federally Enforceable Through Title V Permit
55. The operator shall be in violation of Rule 4455 if any District inspection demonstrates that one or more of the conditions in Sections 5.1.4 exist at the facility. [District Rule 4455, 5.1.3.1] Federally Enforceable Through Title V Permit
56. Except for annual operator inspection described in Section 5.1.3.2.3, any operator inspection that demonstrates that one or more of the conditions in Section 5.1.4 exist at the facility shall not constitute a violation of Rule 4455 if the leaking components are repaired as soon as practicable but not later than the time frame specified in Rule 4455. Such components shall not be counted towards determination of compliance with the provisions of Section 5.1.4. [District Rule 4455, 5.1.3.2.1] Federally Enforceable Through Title V Permit
57. Leaking components detected during operator inspection pursuant Section 5.1.3.2.1 that are not repaired, replaced, or removed from operation as soon as practicable but not later than the time frame specified in Rule 4455 shall be counted toward determination of compliance with the provisions of Section 5.1.4. [District Rule 4455, 5.1.3.2.2] Federally Enforceable Through Title V Permit

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58. Any operator inspection conducted annually for a component type (including operator annual inspections pursuant to Section 5.2.5, 5.2.6, 5.2.7, or 5.2.8) that demonstrates one or more of the conditions in Section 5.1.4 exist at the facility shall constitute a violation of Rule 4455 regardless of whether or not the leaking components are repaired, replaced, or removed from operation within the allowable repair time frame specified in Rule 4455. [District Rule 4455, 5.1.3.2.3] Federally Enforceable Through Title V Permit
59. The operator shall audio-visually inspect for leaks all accessible operating pumps, compressors and Pressure Relief Devices (PRDs) in service at least once every 24 hours, except when operators do not report to the facility for that given 24 hours. Any identified leak that cannot be immediately repaired shall be reinspected within 24 hours using a portable analyzer. If a leak is found, it shall be repaired as soon as practical but not later than the time frame specified in Table 3. [District Rule 4455, 5.2.1 & 5.2.2] Federally Enforceable Through Title V Permit
60. The operator shall inspect all components at least once every calendar quarter, except for inaccessible components, unsafe-to-monitor components and pipes. Inaccessible components, unsafe-to-monitor components and pipes shall be inspected in accordance with the requirements set forth in Sections 5.2.5, 5.2.6, and 5.2.7. New, replaced, or repaired fittings, flanges and threaded connections shall be inspected immediately after being placed into service. Components shall be inspected using EPA Method 21. [District Rule 4455, 5.2.3, 5.2.4, 5.2.5, 5.2.6 & 5.2.7] Federally Enforceable Through Title V Permit
61. The operator may apply for a written approval from the APCO to change the inspection frequency from quarterly to annually for a component type, provided the operator meets all the criteria specified in Sections 5.2.8.1 through 5.2.8.3. This approval shall apply to accessible component types, specifically designated by the APCO, except pumps, compressors, and PRDs which shall continue to be inspected on a quarterly basis. [District Rule 4455, 5.2.8] Federally Enforceable Through Title V Permit
62. An annual inspection frequency approved by the APCO shall revert to quarterly inspection frequency for a component type if either the operator inspection or District inspection demonstrates that a violation of the provisions of Sections 5.1, 5.2 and 5.3 of the rule exists for that component type, or the APCO issued a Notice of Violation for violating any of the provisions of Rule 4455 during the annual inspection period for that component type. When the inspection frequency changes from annual to quarterly inspections, the operator shall notify the APCO in writing within five (5) calendar days after changing the inspection frequency, giving the reason(s) and date of change to quarterly inspection frequency. [District Rule 4455, 5.2.9 & 5.2.10] Federally Enforceable Through Title V Permit
63. The operator shall initially inspect a process PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the time of the release. To insure that the process PRD is operating properly, and is leak-free, the operator shall re-inspect the process PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the date of the release using EPA Method 21. If the process PRD is found to be leaking at either inspection, the PRD leak shall be treated as if the leak was found during quarterly operator inspections. [District Rule 4455, 5.2.11] Federally Enforceable Through Title V Permit
64. Except for process PRD, a component shall be inspected within 15 calendar days after repairing the leak or replacing the component using EPA Method 21. [District Rule 4455, 5.2.12] Federally Enforceable Through Title V Permit
65. Upon detection of a leaking component, the operator shall affix to that component a weatherproof readily visible tag that contains the information specified in Section 5.3.3. The tag shall remain affixed to the component until the leaking component has been repaired or replaced; has been re-inspected using EPA Method 21; and is found to be in compliance with the requirements of Rule 4455. [District Rule 4455, 5.3.1 5.3.2 and 5.3.3] Federally Enforceable Through Title V Permit
66. An operator shall minimize all component leaks immediately to the extent possible, but not later than one (1) hour after detection of leaks in order to stop or reduce leakage to the atmosphere. [District Rule 4455, 5.3.4] Federally Enforceable Through Title V Permit
67. If the leak has been minimized but the leak still exceeds the applicable leak standards of Rule 4455, an operator shall repair or replace the leaking component, vent the leaking component to a closed vent system, or remove the leaking component from operation as soon as practicable but not later than the time period specified in Table 3. For each calendar quarter, the operator may be allowed to extend the repair period as specified in Table 3, for a total number of leaking components, not to exceed 0.05 percent of the number of components inspected, by type, rounded upward to the nearest integer where required. [District Rule 4455, 5.3.5] Federally Enforceable Through Title V Permit

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68. If the leaking component is an essential component or a critical component and which cannot be immediately shut down for repairs, the operator shall minimize the leak within one hour after detection of the leak. If the leak has been minimized, but the leak still exceeds any of the applicable leak standards of Rule 4455, the essential component or critical component shall be repaired or replaced to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection, whichever comes earlier. [District Rule 4455 5.3.6] Federally Enforceable Through Title V Permit
69. For any component that has incurred five repair actions for major gas leaks or major liquid leaks, or any combination of major gas leaks and major liquid leaks within a continuous 12-month period, the operator shall comply with at least one of the requirements specified in Sections 5.3.7.1, 5.3.7.2, 5.3.7.3, or 5.3.7.4 by the applicable deadlines specified in Sections 5.3.7.5 and 5.3.7.6. If the original leaking component is replaced with a new like-in-kind component before incurring five repair actions for major leaks within 12-consecutive months, the repair count shall start over for the new component. An entire compressor or pump need not be replaced provided the compressor part(s) or pump part(s) that have incurred five repair actions as described in Section 5.3.7 are brought into compliance with at least one of the requirements of Sections 5.3.7.1 through 5.3.7.6. [District Rule 4455, 5.3.7] Federally Enforceable Through Title V Permit
70. The operator shall monitor process PRD by using electronic process control instrumentation that allows for real time continuous parameter monitoring or by using telltale indicators for the process PRD where parameter monitoring is not feasible. [District Rule 4455, 5.4.1] Federally Enforceable Through Title V Permit
71. All major components and critical components shall be physically identified clearly and visibly for inspection, repair, and recordkeeping purposes. The physical identification shall consist of labels, tags, manufacturer's nameplate identifier, serial number, or model number, or other system approved by the APCO that enables an operator or District personnel to locate each individual component. The operator shall replace tags or labels that become missing or unreadable as soon as practicable but not later than 24 hours after discovery. The operator shall comply with the requirements of Sections 6.1.4 if there is any change in the description of major components or critical components. [District Rule 4455, 5.5.1 & 5.5.2] Federally Enforceable Through Title V Permit
72. The operator shall keep a copy of the operator management plan at the facility and make it available to the APCO, ARB and US EPA upon request. By January 30 of each year, the operator shall submit to the APCO for approval, in writing, an annual report indicating any changes to the existing, approved operator management plan. [District Rule 4455, 6.1.2 & 6.1.4] Federally Enforceable Through Title V Permit
73. The operator shall maintain an inspection log containing, at a minimum, 1) total number of components inspected, and total number and percentage of leaking components found by component types, 2) location, type, name or description of each leaking component, and description of any unit where the leaking component is found, 3) date of leak detection and method of leak detection, 4) for gaseous leaks, record the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak, 5) date of repair, replacement, or removal from operation of leaking components, 6) identification and location of essential component and critical components found leaking that cannot be repaired until the next process unit turnaround or not later one year after leak detection, whichever comes earlier, 7) methods used to minimize the leak from essential components and critical components that cannot be repaired until the next process unit turnaround or not later one year after leak detection, whichever comes earlier, 8) after the component is repaired or is replaced, the date of reinspection and the leak concentration in ppmv, 9) inspector's name, business mailing address, and business telephone number, and 10) the facility operator responsible for the inspection and repair program shall sign and date the inspection log certifying the accuracy of the information recorded in the log. [District Rule 4455, 6.2.1] Federally Enforceable Through Title V Permit
74. Records of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components, including a copy of current calibration gas certification from the vendor of said calibration gas cylinder, the date of calibration, concentration of calibration gas, analyzer reading of calibration gas before adjustment, instrument reading of calibration gas after adjustment, calibration gas expiration date, and calibration gas cylinder pressure at the time of calibration. [District Rule 4455, 6.2.3] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

75. The operator shall notify the APCO, by telephone or other methods approved by the APCO, of any process PRD release described in Sections 5.4.4 and 5.4.5, and any release in excess of the reportable quantity limits as stipulated in 40 CFR, Part 117, Part 302 and Part 355, including any release in excess of 100 pounds of VOC, within one hour of such occurrence or within one hour of the time said person knew or reasonably should have known of its occurrence. [District Rule 4455, 6.3.1] Federally Enforceable Through Title V Permit
76. The operator shall submit a written report to the APCO within thirty (30) calendar days following a PRD release subject to 6.3.1. The written report shall include 1) process PRD type, size, and location, 2) date, time and duration of the process PRD release, 3) types of VOC released and individual amounts, in pounds, including supporting calculations, 4) cause of the process PRD release, and 5) corrective actions taken to prevent a subsequent process PRD release. [District Rule 4455 6.3.2] Federally Enforceable Through Title V Permit
77. Copies of all records shall be retained for a minimum of five (5) years after the date of an entry. Such records shall be made available to the APCO, ARB, or US EPA upon request. [District Rule 4455, 6.2.2, 6.2.3 & 6.2.4] Federally Enforceable Through Title V Permit
78. Measurements of gaseous leak concentrations shall be conducted according to US EPA Method 21 using an appropriate portable hydrocarbon detection instrument calibrated with methane. The instrument shall be calibrated in accordance with the procedures specified in US EPA Method 21 or the manufacturer's instruction, as appropriate, not more than 30 days prior to its use. The operator shall record the calibration date of the instrument. [District Rule 4455, 6.4.1] Federally Enforceable Through Title V Permit
79. The VOC content shall be determined using American Society of Testing and Materials (ASTM) D 1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 for liquids. [District Rule 4455, 6.4.2] Federally Enforceable Through Title V Permit
80. The percent by volume liquid evaporated at 150 C shall be determined using ASTM D 86. [District Rule 4455, 6.4.3] Federally Enforceable Through Title V Permit
81. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
82. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of District Rule 4801, section 3.1 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-36-41-18

LEGAL OWNER OR OPERATOR: SAN JOAQUIN REFINING COMPANY
MAILING ADDRESS: PO BOX 5576
BAKERSFIELD, CA 93388

LOCATION: STANDARD AND SHELL ST
BAKERSFIELD, CA 93308

SECTION: 23 **TOWNSHIP:** 29S **RANGE:** 27E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 31.25 MMBTU/HR FORCED DRAFT WICKES BOILER WITH NORTH AMERICAN MODEL 6131-FC2 NATURAL GAS/OIL-FIRED LOW NOX BURNER WITH FGR: INSTALL SCR FOR RULE 4320 COMPLIANCE AND REMOVE OIL-FIRING PROVISIONS

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
4. The duration of each startup and shutdown period for the 31.25 MMBtu/hr heater shall not exceed 4.0 hours and 2.0 hours respectively. Emission limits of Rule 4305 and 4306 are waived during periods of startup and shutdown. [District Rule 4305, Section 5.5.6 and 4306 Section 5.3] Federally Enforceable Through Title V Permit
5. The boiler shall be equipped with a SCR system. The boiler shall not be operated unless the SCR system is operating [District Rule 2201] Federally Enforceable Through Title V Permit
6. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services
S-36-41-18: Dec 5 2011 9 14AM - ROEDERS : Joint Inspection NOT Required

7. Ammonia slip from the SCR unit shall not exceed 10 ppmv @ 3% O₂. [District Rule 4102]
8. Monthly records of the total amount of ammonia used by the SCR system shall be maintained. [District Rules 1070 and 2520, 9.4.1] Federally Enforceable Through Title V Permit
9. Emissions from the boiler shall not exceed any of the following limits: 0.011 lb-NO_x/MMBtu (9 ppmv @ 3% O₂), 0.00285 lb-SO_x/MMBtu, 0.0076 lb-PM₁₀/MMBtu, 0.074 lb-CO/MMBtu (100 ppmv @ 3% O₂), 0.0055 lb-VOC/MMBtu (13 ppmv @ 3% O₂). [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
10. Boiler may be fired on Fruitvale oilfield produced gas or purchased natural gas. Natural gas and lease produced gas sulfur content shall not exceed 1.0 gr sulfur compounds/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. Source testing to measure NO_x and CO emissions from the 31.25 MMBtu/hr Wickes Boiler shall be conducted within 60 days of initial startup. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
12. Source testing to measure NO_x and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
13. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
14. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
15. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
16. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
17. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit
20. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
21. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

23. The permittee shall monitor and record the stack concentration of NH₃ from the SCR unit at least once during each month. This monitoring shall be conducted utilizing Draeger tubes or a District-approved equivalent method at the time NO_x, CO and O₂ readings are taken. 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 one (1) day of restarting the unit unless monitoring has been performed within the last month. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
24. In stack oxygen monitors are acceptable for O₂ measurement. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
27. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
28. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, fuel gas sulfur content - ASTM D3246, fuel oil sulfur content - ASTM D4294, PAHs - ARB method 429, and chromium VI compounds - CARB method 425. [District Rules 1081, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
29. Permittee shall maintain records of total quantity of liquid fuel combusted in S-36-2, S-36-4, and S-36-41 on a rolling twelve month basis for a period of five years and shall make such records readily available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit
30. Permittee shall maintain records of fuel oil and lease produced gas sulfur content, fuels hhv and cumulative annual fuels use for a period of five years and shall make such records readily available for District inspection upon request. [District Rule 4351] Federally Enforceable Through Title V Permit
31. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Last Amended December 19, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit
32. Copies of all fuel invoices, gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted and all dates on which unit is fired on any noncertified fuel. [District Rule 2520] Federally Enforceable Through Title V Permit
33. Operator shall maintain all records for at least five years and conform to the recordkeeping requirements described in District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit

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34. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
35. Emissions of sulfur compounds from this unit shall not exceed 200 lb per hour, calculated as SO₂. [District Rule 4301, 5.2.1] Federally Enforceable Through Title V Permit
36. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520] Federally Enforceable Through Title V Permit
37. When complying with SO_x emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6B; or Method 8; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, a grab sample analysis by GC-FPD/TCD performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months; however, annual source testing shall resume if any test fails to show compliance. [District Rule 2520] Federally Enforceable Through Title V Permit
38. If the unit is fired on noncertified gaseous fuel and compliance with SO_x emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520] Federally Enforceable Through Title V Permit
39. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
40. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period. [District Rule 4801] Federally Enforceable Through Title V Permit
41. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), 4301 (Amended December 17, 1992), and 4801, section 3.1 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-36-51-19

LEGAL OWNER OR OPERATOR: SAN JOAQUIN REFINING COMPANY
MAILING ADDRESS: PO BOX 5576
BAKERSFIELD, CA 93388

LOCATION: STANDARD AND SHELL ST
BAKERSFIELD, CA 93308

SECTION: 23 **TOWNSHIP:** 29S **RANGE:** 27E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 103.4 MMBTU/HR DIESEL TREATING UNIT WITH SULFUR RECOVERY UNIT, CAUSTIC SCRUBBER, AND SAFETY FLARE: INSTALL SCR ON H-101 FOR RULE 4320 COMPLIANCE AND REMOVE OIL-FIRING PROVISIONS

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. No modification to heater H-501 shall be performed without an Authority to Construct for such modification(s), except for changes specified in conditions below. [District Rule 2010] Federally Enforceable Through Title V Permit
4. When heater H-501 is not operated, the fuel supply line shall be physically disconnected from this unit. [District Rule 4306] Federally Enforceable Through Title V Permit
5. Operator shall notify the District at least seven (7) calendar days prior to recommencing operation of this dormant heater, at which time this permit will be administratively modified to remove DEU references. [District Rule 4306] Federally Enforceable Through Title V Permit
6. A source test to demonstrate compliance with the indicated emission limits shall be performed within 60 days of recommencing operation of heater H-501. [District Rule 4306] Federally Enforceable Through Title V Permit

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

Seyed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services

S-36-51-19, Dec 5 2011 9 14AM - ROEDERS - Joint Inspection NOT Required

7. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4305 and 4306] Federally Enforceable Through Title V Permit
8. The duration of each startup and shutdown period for the 47.1 MMBtu/hr furnace #H-101 shall not exceed 12.0 hours and 2.0 hours respectively. Emission limits of Rule 4305 and 4306 are waived during periods of startup and shutdown. [District Rule 4305, Section 5.5.6 and 4306, 5.3.3] Federally Enforceable Through Title V Permit
9. The duration of each startup and shutdown period for the 7.4 MMBtu/hr heater #H-201 shall not exceed 8.0 hours and 2.0 hours respectively. Emission limits of Rule 4305 and 4306 are waived during periods of startup and shutdown. [District Rule 4305, Section 5.5.6 and 4306, 5.3.3] Federally Enforceable Through Title V Permit
10. The duration of each startup and shutdown period for the 17.0 MMBtu/hr heater #H-501 shall not exceed 7.25 hours and 2.0 hours respectively. Emission limits of Rule 4305 and 4306 are waived during periods of startup and shutdown. [District Rule 4305, Section 5.5.6 and 4306, 5.3.3] Federally Enforceable Through Title V Permit
11. The duration of each startup and shutdown period for the 8.4 MMBtu/hr heater #H-601 shall not exceed 7.5 hours and 2.0 hours respectively. Emission limits of Rule 4305 and 4306 are waived during periods of startup and shutdown. [District Rule 4305, Section 5.5.6 and 4306, 5.3.3] Federally Enforceable Through Title V Permit
12. The duration of each startup and shutdown period for the 7.4 MMBtu/hr heater #H-602 shall not exceed 7.5 hours and 2.0 hours respectively. Emission limits of Rule 4305 and 4306 are waived during periods of startup and shutdown. [District Rule 4305, Section 5.5.6 and 4306, 5.3.3] Federally Enforceable Through Title V Permit
13. All equipment shall be constructed, maintained and operated according to the specifications and plans contained in the permit application except as otherwise specified herein. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Equipment includes caustic scrubber S-303, caustic recirculation vessels A and B, and caustic recirculation pumps 970A and 970 B. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Equipment includes: 47.1 MMBtu/hr natural gas-fired and PSA offgas fired reformer furnace #H-101; 30.0 MMBtu/hr (limited to 17.0 MMBtu/hr by fuel limit) refinery fuel gas-fired 1st fractionator heater #H-501; and 7.44 MMBtu/hr refinery fuel gas-fired heater for #H-201 HDS reactor. [District Rule 2010] Federally Enforceable Through Title V Permit
16. Heater H-101 shall be equipped with a SCR system. The heater shall not be operated unless the SCR system is operating. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The exhaust stack from heater H-101 shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
18. Ammonia slip from the SCR unit shall not exceed 10 ppmv @ 3% O₂. [District Rule 4102]
19. Monthly records of the total amount of ammonia used by the SCR system shall be maintained. [District Rules 1070 and 2520, 9.4.1] Federally Enforceable Through Title V Permit
20. Equipment includes: 10.5 MMBtu/hr (limited to 8 MMBtu/hr by fuel limit) refinery fuel gas-fired 3rd fractionator heater #H-602; and 8.4 MMBtu/hr refinery fuel gas-fired 2nd fractionator heater #H-601. [District Rule 2010] Federally Enforceable Through Title V Permit
21. Equipment includes draft fan C-101, reformer M-101, desulfur vessel V-101, shift convertor vessel V-102, process condenser drum V-103, and deaerator V-104. [District Rule 2010] Federally Enforceable Through Title V Permit
22. Equipment includes steam drum V-105, blowdown drum V-106, steam separator V-107, PSA adsorbers V-108 A,B,C & D, and offgas drum V-109. [District Rule 2010] Federally Enforceable Through Title V Permit
23. Equipment includes one 1,275 bbl sour water pressure vessel, one 711 bbl, one 1,275 bbl, and one 719 bbl light naphtha pressure vessels, and light naphtha loading rack with nitrogen purge system. [District Rule 2010] Federally Enforceable Through Title V Permit
24. Unit 200 (HDS section) includes oil filter A-201, O/H stripper B-201, coke drum B-202, intermediate stripper F-201, and HDS reactor R-201. [District Rule 2010] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

25. Unit 300 (HDA section) includes hot separator B-301, recycle gas separator B-302, recycle gas compressor K/O drum B-310, hydrogen (H₂) gas compressors K-301 A/B, and HDA reactor R-301. [District Rule 2010] Federally Enforceable Through Title V Permit
26. Unit 400 (amine wash & sour water stripper) includes amine solution filter A-401, OH separator B-401, amine K/O drum B-402, amine solution flash drum B-403, amine adsorber F-401, amine regenerator F-402, and amine storage tank T-401. [District Rule 2010] Federally Enforceable Through Title V Permit
27. Unit 400 includes sour water flash drum B-411, slop oil drum B-412, sour water stripper F-410, and sour water feed tank T-411. [District Rule 2010] Federally Enforceable Through Title V Permit
28. Unit 500 (1st fractionator) includes OH separator B-501, HDA feed surge drum B-502, OH separator for light ends stripper B-503, coke drum B-504, 1st fractionator F-501, light ends stripper F-502, and 1st fractionator feed heater H-501. [District Rule 2010] Federally Enforceable Through Title V Permit
29. Unit 600 (2nd/3rd fractionators) includes 2nd fractionator accumulator B-601, 3rd fractionator accumulator B-602, 2nd fractionator F-601, 3rd fractionator F-602, and kero stripper F-603. [District Rule 2010] Federally Enforceable Through Title V Permit
30. Unit 600 includes heavy solvent stripper F-604, 2nd fractionator reboiler H-601, 3rd fractionator reboiler H-602, compressors K-601 A/B, and vacuum pumps K-602 A/B. [District Rule 2010] Federally Enforceable Through Title V Permit
31. Sulfur recovery unit includes liquefied oxygen storage facility combustion oxygen enriched air blower 10-K-01A, spare combustion oxygen enriched air blower 10-K-01B, amine acid gas and NH₃ gas KO drums 10-V-01/02, and converter 1/2/3-common shell with hydrogenation reactor 10-V-04/05/06. [District Rule 2010] Federally Enforceable Through Title V Permit
32. Sulfur recovery unit includes sulfur pit vent eductor 10-K-02 (venting to thermal oxidizer 10-F-02), reaction furnace 10-F-01, thermal oxidizer and stack 10-F-02, sulfur pit 10-T-01, K/O drum sour water pumps 10-P-01 A/B, sulfur pump 10-P-03, and boiler feedwater pumps 10-P-04 A/B. [District Rule 2010] Federally Enforceable Through Title V Permit
33. Tailgas unit includes reducing gas generator (RGG) 11-F-01, contact condenser pumps 11-P-01 A/B, rich amine pumps 11-P-02 A/B, regenerator reflux pumps 11-P-03 A/B, amine sump pump 11-P-04, and lean amine pump 11-P-05. [District Rule 2010] Federally Enforceable Through Title V Permit
34. Tail gas unit includes amine surge drum 11-T-01, hydrogenation reactor 11-V-01, contact condenser 11-V-02, amine absorber 11-V-03, amine regenerator 11-V-04, and regenerator reflux drum 11-V-05. [District Rule 2010] Federally Enforceable Through Title V Permit
35. The Claus sulfur recovery unit sulfur production shall not exceed six long tons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
36. Fugitive emission rate from caustic scrubber S-303, caustic recirculation vessels A and B, and caustic recirculation pumps P-970-A and P-970-B, calculated using the California Implementation Guideline for Estimating Mass Emissions of Fugitive Hydrocarbon leaks at Petroleum Facilities, Table IV-2a. 1995 EPA Protocol, Refinery Screening Value Range Emissions Factors, shall not exceed 1.1 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
37. Permittee shall maintain accurate fugitive emissions component counts and calculation of resulting emissions from caustic scrubber S-303, caustic recirculation vessels A and B, and caustic recirculation pumps P-970-A and P-970-B using fugitive emissions factors described in this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
38. Gas leaks exceeding 10,000 ppmv and liquid leaks exceeding 3 drops per minute from the caustic scrubber S-303, caustic recirculation vessels A and B, and caustic recirculation pumps P-970-A and P-970-B are a violation of this permit and shall be reported as a deviation. [District Rule 2201] Federally Enforceable Through Title V Permit

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39. Flare shall burn no more than 190,000 scf in any day of hydrogen plant gas, purchased natural gas, and all gases from diesel stripper, diesel hydrogenation flash drum, sour water stripper tank, vapors collected from S-36-104, and gases from heavy oil hydrofinisher processing unit on S-36-109. [District Rule 2010] Federally Enforceable Through Title V Permit
40. Upon recommencing operation, permittee shall demonstrate fuel limitation for heater H-501 by either a non-resettable fuel meter for each heater and daily records of fuel use, or provide District approved documentation demonstrating how the fuel flow is limited to the permitted rating. [District Rule 2201] Federally Enforceable Through Title V Permit
41. Permittee shall demonstrate fuel limitation for heater H-602 by either a non-resettable fuel meter for each heater and daily records of fuel use, or provide District approved documentation demonstrating how the fuel flow is limited to the permitted rating. [District Rule 2201] Federally Enforceable Through Title V Permit
42. All gases from diesel stripper, diesel hydrogenation flash drum, and sour water stripper tank shall be sent to MEA section for sulfur compound removal except during plant shutdown or breakdown conditions pursuant to Rule 1100 when it shall be burned in the flare. [District Rule 2201] Federally Enforceable Through Title V Permit
43. Flare equipped with flared gas flow meter serving hydrogen plant gas, purchased natural gas, and all gases from diesel stripper, diesel hydrogenation flash drum, sour water stripper tank, vapors collected from S-36-104, and gases from heavy oil hydrofinisher processing unit on S-36-109. These gases shall only be flared during breakdown conditions pursuant to Rule 1100 and during plant shutdowns. [District Rule 4001] Federally Enforceable Through Title V Permit
44. Hydrogen sulfide analyzer/recorder shall be located at exit of tail gas unit prior to thermal oxidizer 10-F-02 and shall be operational and utilized except during bypass of the tail gas treating unit during startup or shutdown. [District NSR Rule] Federally Enforceable Through Title V Permit
45. Bypass of the tailgas unit will occur only when natural gas is supplied to the main reactor furnace during startup or shutdown of the sulfur recovery unit or tail gas treating unit. [District NSR Rule] Federally Enforceable Through Title V Permit
46. Pressure in sour water tank and light naphtha tanks shall be maintained above 15 psig. Sour water tank pressure relief valve shall be set at 40 psig and the light naphtha pressure relief valves shall be set at 50 psig and shall vent to atmosphere. [District Rule 4001] Federally Enforceable Through Title V Permit
47. Light naphtha liquid from overhead accumulator shall be sent to light naphtha pressure storage vessels. [District NSR Rule] Federally Enforceable Through Title V Permit
48. Overhead accumulator offgas shall be sent to the fuel gas compressor for introduction into fuel gas system, or shall be flared under plant breakdown conditions pursuant to Rule 1100. [District NSR Rule] Federally Enforceable Through Title V Permit
49. All sour water must be treated in sour water stripper prior to being exposed to the atmosphere. [District NSR Rule] Federally Enforceable Through Title V Permit
50. Sour water pressure tank shall vent to sulfur plant or shall vent to flare during breakdown conditions pursuant to Rule 1100. [District NSR Rule] Federally Enforceable Through Title V Permit
51. If thermal oxidizer 10-F-2 is inoperative, sour water shall not be pumped from sour water storage vessel and diesel hydrotreating unit and heavy oil hydrofinishing processing unit shall be shut down. [District NSR Rule] Federally Enforceable Through Title V Permit
52. Sulfur recovery unit and tailgas unit overall sulfur removal shall be no less than 99.8% by weight except during startup or shutdown conditions. [District NSR Rule] Federally Enforceable Through Title V Permit
53. The inlet gas stream to the thermal oxidizer shall not contain greater than 10 ppmv H₂S on a three hour rolling average basis except during startup or shutdown conditions of the sulfur recovery unit or tail gas treating unit. [District NSR Rule] Federally Enforceable Through Title V Permit
54. Startup and shutdown conditions for the sulfur recovery unit and tail gas treating unit combined shall not occur for more than 12 hours in any day. [District NSR Rule] Federally Enforceable Through Title V Permit

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55. Thermal oxidizer sulfur compound emissions during startup or shutdown conditions of the sulfur recovery unit or tail gas treating unit shall not exceed 2000 ppm as SO₂. [District NSR Rule and 4801] Federally Enforceable Through Title V Permit
56. SO_x emissions from the sulfur recovery unit and tail gas treating unit through the thermal oxidizer shall not exceed 109.6 pounds per day. [District NSR Rule] Federally Enforceable Through Title V Permit
57. Only natural gas consisting primarily of methane and less than 5% by weight hydrocarbons heavier than butane and PSA offgas shall be combusted in reformer furnace #H-101. [District Rule 2201] Federally Enforceable Through Title V Permit
58. VOC emissions from fugitive emissions sources in this permit unit shall not exceed 27.99 lb per day. [District Rule 2201] Federally Enforceable Through Title V Permit
59. Emissions from process heater H-101 shall not exceed any of the following limits: 0.011 lb-NO_x/MMBtu (9 ppmv @ 3% O₂), 0.0034 lb-SO_x/MMBtu, 0.0137 lb-PM₁₀/MMBtu, 0.015 lb-CO/MMBtu (20 ppmv @ 3% O₂), or 0.0040 lb-VOC/MMBtu (9.5 ppmv @ 3% O₂). [District Rules 2201, 4305, 4306, 4320 and 4351] Federally Enforceable Through Title V Permit
60. Emissions from process heater H-201 shall not exceed any of the following: PM₁₀: 0.0137 lb/MMBtu; NO_x (as NO₂): 0.0353 lb/MMBtu or 29.4 ppmv @ 3% O₂; VOC: 0.0040 lb/MMBtu; or CO: 137 ppmv @ 3% O₂. [District Rule 2201] Federally Enforceable Through Title V Permit
61. Upon recommencing operation, emissions from process heater H-501 shall not exceed any of the following: PM₁₀: 0.0137 lb/MMBtu; NO_x (as NO₂): 0.036 lb/MMBtu or 30 ppmv @ 3% O₂; VOC: 0.0040 lb/MMBtu; or CO: 137 ppmv @ 3% O₂. [District Rules 2201, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
62. Emissions from process heaters H-602 shall not exceed any of the following: PM₁₀: 0.0137 lb/MMBtu; NO_x (as NO₂): 0.036 lb/MMBtu or 30 ppmv @ 3% O₂; VOC: 0.0040 lb/MMBtu; or CO: 137 ppmv @ 3% O₂. [District Rules 2201, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
63. Emissions from process heater H-601 shall not exceed any of the following: PM₁₀: 0.0137 lb/MMBtu; NO_x (as NO₂): 0.036 lb/MMBtu or 30 ppmv @ 3% O₂; VOC: 0.0040 lb/MMBtu; or CO: 400 ppmv @ 3% O₂. [District Rules 2201, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
64. Emissions from flare shall not exceed any of the following: PM₁₀: 2.7 lb/day, SO_x: 104.9 lb/day, NO_x: 6.8 lb/day, VOC: 7.4 lb/day, or CO: 70.3 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
65. Sulfur content of PSA offgas combusted in reformer furnace H-101 shall not exceed 0.0123 grains/dscf. Sampling of PSA offgas to determine compliance with sulfur content limit shall be conducted annually. [District Rule 2201] Federally Enforceable Through Title V Permit
66. Sulfur content of fuel gas combusted by 1st fractionator feed heater H-501 shall not exceed 0.10 grains/dscf as determined on a rolling three (3) hour average basis. [40 CFR 60.104(a)(1)] Federally Enforceable Through Title V Permit
67. Sulfur content of fuel gas combusted by 2nd fractionator feed heater H-602 and heater H-201 shall not exceed 0.0553 grains/dscf as determined on a rolling three (3) hour average basis. [District NSR Rule and 40 CFR 60.104(a)(1)] Federally Enforceable Through Title V Permit
68. Sulfur content of fuel gas combusted by 3rd fractionator feed heater H-601 shall not exceed 0.069 grains/dscf as determined on a rolling three (3) hour average basis. [District Rule 2201 and 40 CFR 60.104(a)(1)] Federally Enforceable Through Title V Permit
69. Permittee shall maintain accurate records of number of fugitive emissions components and calculated emissions using Technical Guidance Document to AB2588 for refineries Tables D1-D3, AP-42 Table 9.1-2, or other District approved emission factors. [District Rules 1070, and 2520, 9.3.2] Federally Enforceable Through Title V Permit
70. Upon recommencing operation, heater H-501 shall be equipped with sampling facilities for source testing in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit

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71. All fired equipment, H-101, H-201, H-601, and H-602, shall be equipped with sampling facilities for source testing in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit
72. Source testing to measure NO_x and CO emissions from the 47.1 MMBtu/hr Heater #H-101 shall be conducted within 60 days of initial startup. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
73. Source testing to measure NO_x and CO emissions from heaters H-101, H-201, H-501, H-601 and H-602 shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
74. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
75. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
76. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
77. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
78. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
79. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
80. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit
81. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
82. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
83. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ of the heaters at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
84. The permittee shall monitor and record the stack concentration of NH₃ from the SCR unit at least once during each month. This monitoring shall be conducted utilizing Draeger tubes or a District-approved equivalent method at the time NO_x, CO and O₂ readings are taken. 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 one (1) day of restarting the unit unless monitoring has been performed within the last month. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
85. In stack oxygen monitors are acceptable for O₂ measurement. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

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86. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
87. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
88. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
89. Permittee shall comply with all applicable notification, reporting, recordkeeping, testing, and maintenance requirements of Rule 4001 (40 CFR 60; subparts J, GGG, and QQQ). Heaters H-201, H-501, H-601, H-602, and the flare are subject to Subpart J. [District Rule 4001] Federally Enforceable Through Title V Permit
90. Equipment shall include monitoring system as required by 40 CFR 60, Subpart J for monitoring and recording of sulfur content (dry basis) of fuel gas (except PUC regulated natural gas, psa offgas, and combinations of only PUC gas and psa offgas) prior to combustion. [District Rule 4001] Federally Enforceable Through Title V Permit
91. The combustion in the thermal oxidizer, or other fuel gas combustion device of gases released as a result of start-up, shutdown, or malfunction is exempt from the 0.1 gr/dscf H₂S requirement. The combustion in the flare of gases released as a result of start-up, shutdown, upset, malfunction, or the result of relief valve leakage is exempt from the 0.1 gr/dscf H₂S requirement. [District Rule 4001, Subpart J] Federally Enforceable Through Title V Permit
92. Continuous emissions monitoring system shall be installed, calibrated, operated, and reported according to EPA guidelines as specified under 40 CFR 60, Subpart J, Specification 7, and general requirements. CEM results shall be calculated on a rolling three (3) hour basis. [District Rule 4001] Federally Enforceable Through Title V Permit
93. PSA gas monitoring shall be maintained pursuant to EPA approved alternate monitoring, one analysis for the sulfur content of the feedstock gas each reporting period and a statement confirming that the pipeline natural gas is the only feed to the hydrogen plant. [District Rule 4001] Federally Enforceable Through Title V Permit
94. Permittee shall maintain accurate daily records of amount of gas burned in the flare. [District Rule 1070, and 2520, 9.3.2] Federally Enforceable Through Title V Permit
95. Permittee shall sample flared gas for H₂S content twice daily. [District Rule 1070, and 2520, 9.3.2] Federally Enforceable Through Title V Permit
96. Permittee shall maintain accurate records of fuel consumption data, operational data, start-up and shutdown condition frequency and duration of the sulfur recovery unit, and gas sulfur content to verify daily emission limit compliance. [District NSR Rule and 1070] Federally Enforceable Through Title V Permit
97. All records required by this permit shall be made available for District inspection upon request for a period of five years. [District Rule 1070, and 2520, 9.4.2] Federally Enforceable Through Title V Permit

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98. Operator shall not burn in any fuel gas combustion device any fuel gas that contains hydrogen sulfide (H₂S) in excess of 0.10 gr/dscf (230 mg/dscm). [40 CFR Part 60, subpart J, 60.104(a)(1)] Federally Enforceable Through Title V Permit
99. Operator shall report all rolling 3-hour periods during which the average concentration of H₂S as measured by the H₂S continuous monitoring system exceeds 0.10 gr/dscf (230 mg/dscm). [40 CFR Part 60, subpart J, 60.105(e)(3)(ii)] Federally Enforceable Through Title V Permit
100. Operator shall determine compliance with the H₂S standard using EPA Method 11. [40 CFR Part 60, subpart J, 60.106(e)] Federally Enforceable Through Title V Permit
101. All required source testing shall conform to the compliance testing procedures described in District Rule 1081(Amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit
102. {552} Copies of all fuel invoices, gas purchase contracts, supplier certifications, and test results used to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted and all dates on which unit is fired on any noncertified fuel. [District Rule 2520, 9.4.2 and 40 CFR 60.48c(g)] Federally Enforceable Through Title V Permit
103. {2805} Operator shall maintain all records for at least five years and conform to the recordkeeping requirements described in District Rule 2520. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
104. {588} Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
105. Emissions of sulfur compounds from any of the following units, H-101, H-201, H-501, H-601, H-602 shall not exceed 200 lb per hour, calculated as SO₂. [District Rule 4301] Federally Enforceable Through Title V Permit
106. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520] Federally Enforceable Through Title V Permit
107. When complying with SO_x emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6B; or Method 8; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, a grab sample analysis by GC-FPD/TCD performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months; however, annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
108. If the unit is fired on noncertified gaseous fuel and compliance with SO_x emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
109. If fuel analysis is used to demonstrate compliance with conditions of this permit, the fuel higher heating value for each fuel shall be certified by a third party fuel supplier or determined by: ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 4305, 6.2.1; 4306, 6.2.1, and 4351, 6.2.1] Federally Enforceable Through Title V Permit
110. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period. [District Rule 4801] Federally Enforceable Through Title V Permit
111. The flare shall be operated according to the manufacturer's specifications, a copy of which shall be maintained on site. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
112. {654} Flares shall only be used with the net heating value of the gas being combusted being 200 Btu/scf or greater if the flare is non-assisted; or with the net heating value of the gas being combusted being 300 Btu/scf or greater if the flare is air-assisted or steam-assisted. [40 CFR 60.18 (c)(3)] Federally Enforceable Through Title V Permit

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113. The net heating value of the gas being combusted in a flare shall be calculated annually, pursuant to 40 CFR 60.18(f)(3) and using EPA Method 18, ASTM D1946, and ASTM D2382. [40 CFR 60.18 (f)(3-6)] Federally Enforceable Through Title V Permit
114. {656} Air-assisted flares shall be operated with an exit velocity less than V_{max} , as determined by the equation specified in paragraph 40 CFR 60.18 (f)(6). [40 CFR 60.18 (c)(5)] Federally Enforceable Through Title V Permit
115. {657} Nonassisted and steam-assisted flares shall be operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18 (f)(4), less than 60 ft/sec, except as provided in 40 CFR 60.18 (c)(4)(ii) and (iii). [40 CFR 60.18 (c)(4)(i)] Federally Enforceable Through Title V Permit
116. {658} Nonassisted and steam-assisted flares may be operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18 (f)(4), equal to or greater than 60 ft/sec, but less than 400 ft/sec if the net heating value of the gas being combusted is greater than 1,000 Btu/scf. [40 CFR 60.18 (c)(4)(ii)] Federally Enforceable Through Title V Permit
117. {659} Nonassisted and steam-assisted flares may be operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18 (f)(4), less than the velocity, V_{max} , as determined by the equation specified in paragraph 40 CFR 60.18 (f)(5), and less than 400 ft/sec. [40 CFR 60.18 (c)(4)(iii)] Federally Enforceable Through Title V Permit
118. {660} The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip. [40 CFR 60.18 (f)(4)] Federally Enforceable Through Title V Permit
119. {661} Flares shall be operated with a flame present at all times, and kept in operation when emissions may be vented to them. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. [40 CFR 60.18 (c)(2), 60.18 (e), and 60.18 (f)(2)] Federally Enforceable Through Title V Permit
120. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
121. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of District Rule 4801, section 3.1 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
122. Heat exchangers 11-E-01A and 11-E-01B shall not operate concurrently. [District Rule 2010] Federally Enforceable Through Title V Permit
123. Permittee shall keep an accurate record of dates of inspection and monitoring, components inspected and monitored, and results of fugitive emissions calculations for compliance with the daily emission limit of the caustic scrubber S-303, caustic recirculation vessels A and B, and caustic recirculation pumps P-970-A and P-970-B. Such records shall be made readily available for District inspection upon request for a period of five years. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
124. The flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311, 5.2] Federally Enforceable Through Title V Permit
125. The outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rule 4311, 5.3] Federally Enforceable Through Title V Permit
126. Except for flares equipped with a flow-sensing ignition system, a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an alternative equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated. [District Rule 4311, 5.4] Federally Enforceable Through Title V Permit
127. Flares that use flow-sensing automatic ignition systems and which do not use a continuous flame pilot shall use purge gas for purging. [District Rule 4311, 5.5] Federally Enforceable Through Title V Permit

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128. Flaring is prohibited unless it is consistent with an approved flare minimization plan (FMP), and all commitments listed in that plan have been met. This standard shall not apply if the APCO determines that the flaring is caused by an emergency and is necessary to prevent an accident, hazard or release of vent gas directly to the atmosphere. [District Rule 5.8] Federally Enforceable Through Title V Permit
129. The operator shall minimize sulfur dioxide flare emissions to less than 1.50 tons per million barrels of crude processing capacity, calculated as an average over one calendar year. [District Rule 4311, 5.9.1] Federally Enforceable Through Title V Permit
130. The operator shall monitor the vent gas flow to the flare with a flow measuring device. [District Rule 4311, 5.10] Federally Enforceable Through Title V Permit
131. The operator shall maintain and retain on-site for a minimum of five years, and made available to the APCO, ARB, and EPA a copy of the approved flare minimization plan, a copy of annual reports submitted to the District, and all applicable flare monitoring data collected as required by this permit. [District Rule 4311, 6.1] Federally Enforceable Through Title V Permit
132. The operator of a flare subject to flare minimization shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, whichever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time. [District Rule 4311, 6.2] Federally Enforceable Through Title V Permit
133. Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare minimization shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Section 3.0 that occurred during the previous 12 month period. The report shall be submitted within 30 days following the end of the twelve month period of the previous year. The report shall include, but is not limited to all of the following: the results of an investigation to determine the primary cause and contributing factors of the flaring event; any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented; if appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and the date, time, and duration of the flaring event. [District Rule 4311, 6.2.2] Federally Enforceable Through Title V Permit
134. Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare monitoring requirements shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report shall include the following: the total volumetric flow of vent gas in standard cubic feet for each day; hydrogen sulfide content, methane content, and hydrocarbon content of vent gas composition; if vent gas composition is monitored by a continuous analyzer or analyzers, average total hydrocarbon content by volume, average methane content by volume, and depending upon the analytical method used, total reduced sulfur content by volume or hydrogen sulfide content by volume of vent gas flared for each hour of the month; if the flow monitor used measures molecular weight, the average molecular weight for each hour of each month; for any pilot and purge gas used, the type of gas used, the volumetric flow for each day and for each month; and the means used to determine flow; flare monitoring system downtime periods, including dates and times; for each day and for each month provide calculated sulfur dioxide emissions; and a flow verification report for each flare subject to this rule. The flow verification report shall include flow verification testing. [District Rule 4311, 6.2.3] Federally Enforceable Through Title V Permit
135. Total hydrocarbon content and methane content of vent gas shall be determined using ASTM Method D 1945-96, ASTM Method UOP 539-97, EPA Method 18, or EPA Method 25A or 25B. [District Rule 4311, 6.3.4.1] Federally Enforceable Through Title V Permit
136. Vent gas flow shall be determined using a verification method recommended by the manufacturer of the flow monitoring equipment installed. [District Rule 4311, 6.3.5.2] Federally Enforceable Through Title V Permit
137. The operator shall monitor sulfur content of the vent gas to the flare using a colorimetric tube system on a daily basis, and monitor vent gas hydrocarbon on a weekly basis by collecting samples and having them tested. [District Rule 4311, 6.6.5] Federally Enforceable Through Title V Permit
138. The operator shall provide the APCO with access to the flare monitoring system to collect the vent gas samples. [District Rule 4311, 6.6.7] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

139. The operator shall monitor the volumetric flows of the flare's purge and pilot gases with flow measuring devices or other parameters as specified on the Permit to Operate so that volumetric flows of pilot and purge gas may be calculated based on pilot design and the parameters monitored. [District Rule 4311, 6.7] Federally Enforceable Through Title V Permit
140. The operator shall monitor and record the water level and pressure of the water seal that services the flare daily. [District Rule 4311, 6.8] Federally Enforceable Through Title V Permit
141. The operator shall report periods of flare monitoring system inoperation greater than 24 continuous hours by the following working day, followed by notification of resumption of monitoring. Periods of inoperation of monitoring equipment shall not exceed 14 days per any 18-consecutive-month period. Periods of flare monitoring system inoperation do not include the periods when the system feeding the flare is not operating. [District Rule 4311, 6.9.1] Federally Enforceable Through Title V Permit
142. The operator shall install and maintain equipment that records a real-time digital image of the flare and flame at a frame rate of no less than one frame per minute. The recorded image of the flare shall be of sufficient size, contrast, and resolution to be readily apparent in the overall image or frame. The image shall include an embedded date and time stamp. The equipment shall archive the images for each 24-hour period. In lieu of video monitoring the operator may use an alternative monitoring method that provides data to verify date, time, vent gas flow, and duration of flaring events. [District Rule 4311, 6.10] Federally Enforceable Through Title V Permit

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