



May 4, 2021

Mr. Jason Goklaney
Sentinel Peak Resources CA LLC
1200 Discovery Drive, Suite 100
Bakersfield, CA 93309

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
Facility Number: S-1372
Project Number: S-1203797

Dear Mr. Goklaney:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The project modifies two steam generators.

The notice of preliminary decision for this project has been posted on the District's website (www.valleyair.org). After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authority to Construct with a Certificate of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

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

Thank you for your cooperation in this matter.

Sincerely,



Brian Clements
Director of Permit Services

Enclosures

cc: Courtney Graham, CARB (w/enclosure) via email
cc: Gerardo C. Rios, EPA (w/enclosure) via EPS

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San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Modify Existing Steam Generators

Facility Name: Sentinel Peak Resources Date: 05/04/21
Mailing Address: 1200 Discovery Drive, Suite 100 Engineer: Richard Edgehill
Bakersfield, CA 93309 Lead Engineer: Leonard Scandura
Contact Person: Jason Goklaney
Telephone: (661) 395-5285
Application #(s): S-1372-16-27, '-100-38, '-127-28, and '-317-18
Project #: 1203797
Deemed Complete: 09/14/20

I. Proposal

Sentinel Peak Resources (SPR) has requested Authority to Construct (ATCs) permits to allow simultaneous combustion of TEOR gas from S-1372-100 in steam generators S-1372-16, '-127, and '-317.

Note that units '-16, '-127, and '-317 are currently authorized to combust waste gas. However, the current permits for '-16, and '-317 include conditions which prohibit combustion of TEOR gas in one unit unless the other unit(s) are fired on natural gas. Applicant has requested removal of these restrictions.

Applicant has also requested changes to the daily emissions limits (DEL) for SO_x for units '-16 and '-317. The units are included in a SO_x SLC which will not be changed. The specific changes to DEL and SLC limits are provided in the following table:

Unit	Maximum Heat Input (MMBtu/hr)	SO _x lb/day	SO _x lb/MMBtu	SO _x Limit lb/day	SLC	Units in SLC
'-16	62.5	92.5 (PE1) 180.0 (PE2)	0.062 (PE1) 0.120 (PE2)	1193.5		S-1372-13, '-16, '-24, and '-76
'-317	67.5	524.8 (PE1) 180.0 (PE2)	0.324 (PE1) 0.111 (PE2)	1075.2		S-1372-1, '-2, '-4, '-127, '-317, and flare '100

To allow for combustion of TEOR gas in '-16, '-127, and '-317 at the same time, the following conditions will be deleted:

PTO S-1372-16-25 Condition # 6

Steam generator S-1372-317 shall be exclusively fired on PUC quality natural gas when this steam generator is incinerating TEOR vapors. [District Rule 2201] Y

All vapor recovery gas burned in this device shall first be treated by the sulfur removal system listed on S-1372-100 so that at least 95% by weight of the sulfur is removed. [District Rules 2201, 4301, 4320, 4406, and 4801] Y

PTO S-1372-317-16

~~*This steam generator shall be exclusively fired on PUC quality natural gas when steam generators S-1372-13, 16, and 24 are gas fired and incinerating TEOR waste gas. [District Rule 2201] Y*~~

This steam generator shall be exclusively fired on PUC quality natural gas when steam generators S-1372-13, ~~16~~, and 24 are gas fired and incinerating TEOR waste gas. [District Rule 2201] Y

The project will authorize the following two additional changes:

PTO S-1372-100 Condition #6 which follows will be revised to reference steam generators '-16, '-127, and '-317 (as underlined):

Flare S-1372-100 shall only be used to incinerate TEOR vapors when one or more of steam generators S-1372-1, -2, -4, -16, -127, and -317 are not in operation. [District Rule 2201] Y

The CO emissions factor of S-1372-16, '-127, and '-317 will be lowered to 25 ppmv @ 3% to reflect realistic (source test emissions).

The VOC emissions factor on the current S-1372-317 permit will be corrected from 0.039 to 0.0039 lb/MMBtu. This was a typographical error.

Annual pre-project NOx emissions for S-1372-317 are corrected to not include startup and shutdown emissions.

BACT and Public Notice are required. Offsets are not required.

Disposition of Outstanding ATCs

ATCs S-1327-16-26, '-127-27, and '-317-17 will be canceled and replaced by the proposed ATCs.

S-1372-100

ATCs S-1372-100-34, '-100-35, '-100-36, and '-100-37, to add receipt of vapors from tanks '-405, '-209, '-220, and '-323, respectively, have been implemented. ATC S-1372-100-39 to add 300 wells (project 1204419) is in preliminary decision. The authorized changes will be included in the equipment description and conditions on the proposed ATC as indicated below.

MODIFICATION OF TEOR OPERATION WITH WELL CASING COLLECTION SYSTEM WITH VAPOR PIPING TO UNIT S-1372-99 SERVING ~~633-933~~ STEAM ENHANCED WELLS WITH 3-PHASE SEPARATORS, STANDBY FLARE, SLUG CATCHER, SCRUBBERS, HEAT EXCHANGERS, COMPRESSORS, PUMPS, SULFA CHECK AND LIQUID SULFUR REMOVAL SYSTEMS (GAMBLE/MCKITTRICK FRONT): ADD REFERENCE TO '-16 , 127, AND '-317 FOR COMBUSTION OF TEOR VAPORS

ATC shall be implemented concurrently with or subsequent to ATCs S-1327-16-27, '-100-38, '-100-34, '-100-35, '-100-36, '-100-37, '-100-39, '-127-28, and '-317-18. [District Rule 2201] Y

Operation shall include the following equipment: 933 steam enhanced wells, well vent vapor collection system, standby flare, slug catchers, heat exchangers, compressors, pumps, vapor piping, dry fuel gas sulfur scrubbing system and liquid sulfur removal systems, tanks and 3-phase separators. [District Rule 2201] Y

Operation shall include vapor piping from tanks S-1372-128, -209, -220, -323, -405, -412, S-1641-34, -35, -36, and -37 to vapor control system. [District Rule 2201] Y

Vapors from this well vent vapor control system shall be incinerated in steam generators S-1372-1, -2, -4, -16, -30, -32, -33, -127, -317, -334 or standby flare and/or injected into DOGGR approved gas injection wells. [District Rule 2201] Y

Current ATCs and PTOs are included in **Attachment I**.

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

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (8/15/19)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (8/15/19)
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 Generator, and Process Heaters – Phase 2 (8/21/03)
Rule 4401	Steam Enhanced Crude Oil Production Wells (6/16/11)
Rule 4306	Boilers, Steam Generator, and Process Heaters – Phase 3 (10/16/08)
Rule 4320	Advanced Emission Reduction Options for Boilers, Steam Generator, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08)
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice
Public Resources Code 21000-21177:	California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387:	CEQA Guidelines

III. Project Location

The equipment is located at the McKittrick Front Lease within the NW/4 of Section 6, Township 30S, Range 22E in SPR's Heavy Oil Western stationary source. 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.

A location photo is included in **Attachment II**.

IV. Process Description

SPR operates permitted equipment utilized for the production of crude oil and natural gas. In thermally enhanced oil recovery (TEOR) operations, natural gas is combusted in steam generators to produce steam for injection into heavy crude oil bearing strata via injection wells to reduce the viscosity of the crude oil, thereby facilitating thermally enhanced oil production. Waste gas from TEOR operation PTO S-1372-100 is authorized to be combusted in steam generators PTOs S-1372-16, '-127, and '-317 which are equipped with a shared exhaust gas scrubber/ESP.

Applicant has requested that the permits for S-1372-16 and '-317 be revised to allow for combustion of TEOR gas in '-16, '-127, and '-317 simultaneously. Applicant has also requested revision in SOx limits as described in the Proposal Section.

Finally, the CO limit will be lowered from 138 ppmv @ 3% O₂ for S-1372-16 and 50 ppmv @ 3% O₂ for S-1372-127 and S-1372-317 to 25 ppmv CO @ 3% O₂. The source test information in **Attachment III** indicates that CO emissions from '-16 '-127, and '-317 are near 0 ppmv @ 3% O₂. SOx source test data are also listed. Both sets of data indicate that compliance with post-project CO and SOx emissions is expected.

A process flow diagram is included in **Attachment IV**.

V. Equipment Listing

Pre-Project Equipment Description:

ATC S-1372-16-26: 62.5 MMBTU/HR NATURAL GAS/TEOR GAS-FIRED STEAM GENERATOR (#12) (DIS# 44519-76) EQUIPPED WITH A NORTH AMERICAN GLE ULTRA LOW NOX BURNER, FGR AND O₂ CONTROLLER AND EXHAUST GAS CONNECTED TO SCRUBBER/ESP LISTED ON S-1372-127 (MCKITTRICK FRONT LEASE)

ATC S-1327-100-35: TEOR OPERATION WITH WELL CASING COLLECTION SYSTEM WITH VAPOR PIPING TO UNIT S-1372-99 SERVING 633 STEAM ENHANCED WELLS WITH 3-PHASE SEPARATORS, STANDBY FLARE, SLUG CATCHER, SCRUBBERS, HEAT EXCHANGERS, COMPRESSORS, PUMPS, SULFA CHECK AND LIQUID SULFUR REMOVAL SYSTEMS (GAMBLE/MCKITTRICK FRONT)

ATC S-1372-127-27: 62.5 MMBTU/HR NATURAL GAS/TEOR GAS-FIRED STEAM GENERATOR #43 EQUIPPED WITH A NORTH AMERICAN MODEL MAGNA-FLAME G-LE LOW NOX BURNER, FGR, O₂ CONTROLLER, AND EXHAUST GAS SOX SCRUBBER/ESP SHARED WITH S-1372-317 (MCKITTRICK FRONT LEASE)

ATC S-1372-317-17: 67.5 MMBTU/HR NATURAL GAS/TEOR GAS-FIRED STEAM GENERATOR EQUIPPED WITH A NORTH AMERICAN MODEL MAGNA-FLAME G-LE LOW NOX BURNER, FGR AND EXHAUST

GAS SOX SCRUBBER W/ESP SHARED WITH S-1372-127
(MCKITTRICK FRONT LEASE)

Proposed Modification:

ATC S-1372-16-27: MODIFICATION OF 62.5 MMBTU/HR NATURAL GAS/TEOR GAS-FIRED STEAM GENERATOR (#12) (DIS# 44519-76) EQUIPPED WITH A NORTH AMERICAN GLE ULTRA LOW NOX BURNER, FGR AND O2 CONTROLLER AND EXHAUST GAS SOX SCRUBBER W/ESP SHARED WITH S-1372-127 AND S1372-317 (MCKITTRICK FRONT LEASE): ALLOW SIMULTANEOUS COMBUSTION OF TEOR GAS IN '-16 AND '-317, REVISE SOX EMISSIONS LIMIT TO 180 LB/DAY, LOWER CO EMISSIONS FACTOR

ATC S-1372-100-38: MODIFICATION OF TEOR OPERATION WITH WELL CASING COLLECTION SYSTEM WITH VAPOR PIPING TO UNIT S-1372-99 SERVING 933 STEAM ENHANCED WELLS WITH 3-PHASE SEPARATORS, STANDBY FLARE, SLUG CATCHER, SCRUBBERS, HEAT EXCHANGERS, COMPRESSORS, PUMPS, SULFA CHECK AND LIQUID SULFUR REMOVAL SYSTEMS (GAMBLE/MCKITTRICK FRONT): ADD REFERENCE TO '-16 , 127, AND '-317 FOR COMBUSTION OF TEOR VAPORS

ATC S-1327-127-28: MODIFICATION OF 62.5 MMBTU/HR NATURAL GAS/TEOR GAS-FIRED STEAM GENERATOR #43 EQUIPPED WITH A NORTH AMERICAN MODEL MAGNA-FLAME G-LE LOW NOX BURNER, FGR, O2 CONTROLLER, AND EXHAUST GAS SOX SCRUBBER W/ESP SHARED WITH S-1372-16 AND '-317 (MCKITTRICK FRONT LEASE): LOWER CO LIMIT

ATC S-1372-317-18: MODIFICATION OF 67.5 MMBTU/HR NATURAL GAS/TEOR GAS-FIRED STEAM GENERATOR EQUIPPED WITH A NORTH AMERICAN MODEL MAGNA-FLAME G-LE LOW NOX BURNER, FGR AND EXHAUST GAS SOX SCRUBBER W/ESP SHARED WITH S-1372-16 AND -127 (MCKITTRICK FRONT LEASE): ALLOW SIMULTANEOUS COMBUSTION OF TEOR GAS IN '-16 AND '-317, REVISE SOx EMISSIONS LIMIT TO 180 LB/DAY, LOWER CO EMISSIONS FACTOR , CORRECT VOC EMISSION FACTOR

Post-Project Equipment Description:

S-1372-16-27: 62.5 MMBTU/HR NATURAL GAS/TEOR GAS-FIRED STEAM GENERATOR (#12) (DIS# 44519-76) EQUIPPED WITH A NORTH AMERICAN GLE ULTRA LOW NOX BURNER, FGR AND O2 CONTROLLER AND EXHAUST GAS SOX SCRUBBER WITH ESP SHARED WITH S-1327-127 AND '-317 (MCKITTRICK FRONT LEASE)

- S-1372-100-38: TEOR OPERATION WITH WELL CASING COLLECTION SYSTEM WITH VAPOR PIPING TO UNITS S-1372-87 AND S-1372-99, SERVING 633 STEAM ENHANCED WELLS WITH 3-PHASE SEPARATORS, STANDBY FLARE, SLUG CATCHER, SCRUBBERS, HEAT EXCHANGERS, COMPRESSORS, PUMPS, SULFA CHECK AND LIQUID SULFUR REMOVAL SYSTEMS (GAMBLE/MCKITTRICK FRONT)
- S-1372-127-38: 62.5 MMBTU/HR NATURAL GAS/TEOR GAS-FIRED STEAM GENERATOR #43 EQUIPPED WITH A NORTH AMERICAN MODEL MAGNA-FLAME G-LE LOW NOX BURNER, FGR, O2 CONTROLLER, AND EXHAUST GAS SOX SCRUBBER WITH ESP SHARED WITH S-1327-16 AND '-317 (MCKITTRICK FRONT LEASE)
- S-1372-317-18: 67.5 MMBTU/HR NATURAL GAS/TEOR GAS-FIRED STEAM GENERATOR EQUIPPED WITH A NORTH AMERICAN MODEL MAGNA-FLAME G-LE LOW NOX BURNER, FGR AND EXHAUST GAS SOX SCRUBBER WITH ESP SHARED WITH S-1327-16 AND '-127 (MCKITTRICK FRONT LEASE)

VI. Emission Control Technology Evaluation

No change to NO_x, PM₁₀, CO, and VOC control technology is proposed.

Steam generators S-1372-16, '-127, and '-317 are equipped with a spray tower scrubber for SO₂ removal and a wet electrostatic precipitator for particulate matter removal. The removal efficiency for SO_x is expected to be at least 95% by weight.

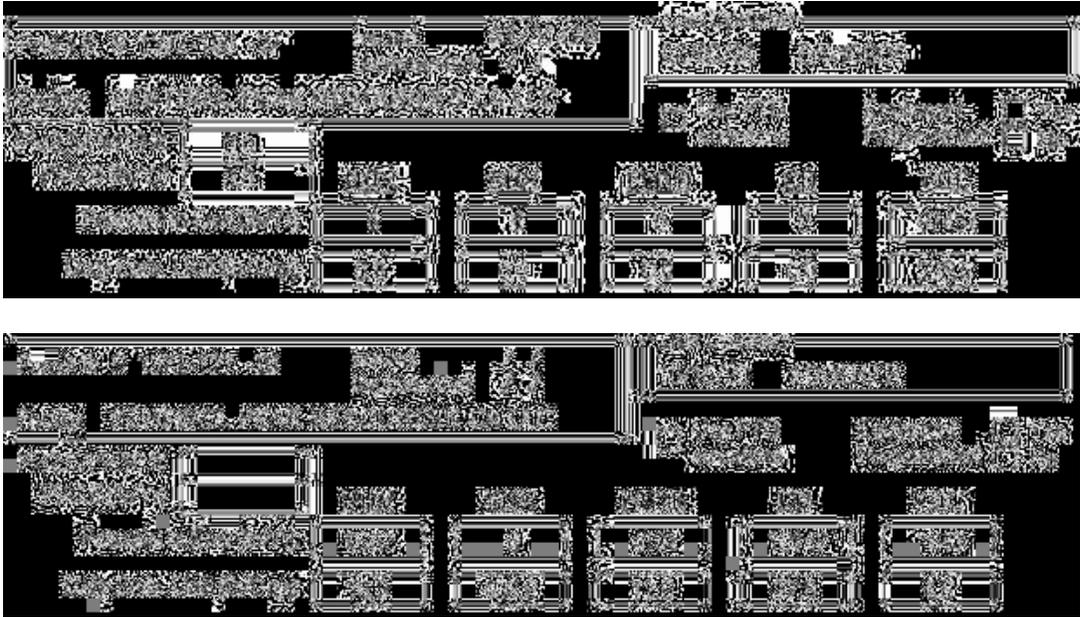
TEOR operation '-100 is equipped with a casing vent collection system required to have a vapor control efficiency for VOCs of 99% by weight by District Rule 4401.

VII. General Calculations

A. Assumptions

Startup and shutdown (SU/SD) emissions occur for 4 hr/day.

Lowering of the CO emissions limit for '-127 is not an NSR Modification as the unit currently meets the revised emissions limit. The change to '-100 to reference steam generators '-16, '-127, and '-317 is also not an NSR modification as there is no change in emissions or method of operation. Therefore, formal calculations for '-100 and '-127 are not required. The existing PE for S-1372-100 and 127 from PAS is shown below:



For SB 288 and Federal Major Modification (FMM) calculations Baseline Actual Emissions (BAE) data are included in **Attachment V**.

Please note that there was insufficient information to establish the Unused Baseline Capacity (UBC) and Projected Actual Emissions (PAE) for the Federal Major Modification (FMM) calculation. Therefore, PE2 (rather than PAE) was used to calculate the emissions increase for the FMM calculation.

'-16

Baseline actual emissions (BAE) were calculated using 64,997 MMBtu/yr natural/TEOR gas fuel consumption for the last 2 years (2019, 2020). Current permitted emissions factors were used in the calculations of BAE for SO_x, PM₁₀, and VOCs as there was no source test data available. Source test data were used for NO_x.

'-317

Baseline actual emissions (BAE) are calculated using 409,361 MMBtu/yr natural/TEOR gas fuel consumption for the last 2 years (2019, 2020). Current permitted emissions factors were used in the calculations of BAE for PM₁₀, and VOCs as there was no source test data available. Source test data were used for NO_x. For SO_x, the source test emissions factor for 2019 of 0.1185 lb/MMBtu (most recent) was used (**Attachment III**).

B. Emission Factors

Pollutant	Emission Factors
	S-1372-16
NO _x	7 ppmv @ 3% O ₂ (0.008 lb/MMBtu) ,
SO _x	92.5 lb/day, 0.062 lb/MMBtu (pre-project) 180.0 lb/day, 0.120 lb/MMBtu (post-project)
PM10	0.014 lb/MMBtu
CO	138 ppmv @ 3%O ₂ or 0.102 lb/MMBtu (pre-project) 25 ppmv @ 3% O ₂ or 0.0185 lb/MMBtu (post-project)
VOC	0.0012 lb-VOC/MMBtu

Pollutant	Emission Factors
	S-1372-317
NO _x	9 ppmv @ 3% O ₂ or 0.011 lb/MMBtu (normal) 15 ppmv @ 3% O ₂ (startup and Shutdown)
SO _x	0.324 lb/MMBtu (pre-project) 180 lb/day, 0.111 lb/MMBtu (post-project)
PM10	0.008 lb/MMBtu
CO	50 ppmv @ 3%O ₂ or 0.0364 lb/MMBtu (pre-project) 25 ppmv @ 3% O ₂ or 0.0185 lb/MMBtu (post-project)
VOC	0.0039 lb-VOC/MMBtu

C. Calculations

1. Pre-Project Potential to Emit (PE1)

S-1372-16 (NO_x daily emissions include startup and shutdown emissions and are listed below the following table)

Pollutant	Daily PE1			
	EF1 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE1 (lb/day)
NO _x		62.5	24	27.0*
SO _x		62.5	24	92.5
PM ₁₀	0.0140	62.5	24	21.0
CO	0.102	62.5	24	153.0
VOC	0.0012	62.5	24	1.8

Pollutant	Annual PE1			
	EF1 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE1 (lb/year)
NO _x	0.008	62.5	8,760	4,380
SO _x		62.5	8,760	33,763**
PM ₁₀	0.0140	62.5	8,760	7,665
CO	0.102	62.5	8,760	55,845
VOC	0.0012	62.5	8,760	657

*On days when a startup/shutdown occurs, NO_x = 27 lb/day, per PTO.

** 92.5 lb/day (DEL) x 365 days/yr = 33,763 lb SO_x/yr

S-1372-317

NO_x

$$67.5 \text{ MMBtu/hr} \times [4 \text{ hr/day} \times 0.018 \text{ lb NO}_x\text{/MMBtu} + 20 \text{ hr/day} \times 0.011 \text{ lb NO}_x\text{/MMBtu}] = 19.8 \text{ lb NO}_x\text{/day}$$

$$67.5 \text{ MMBtu/hr} \times 8760 \text{ hr/yr} \times 0.011 \text{ lb NO}_x\text{/MMBtu} = 6,403 \text{ lb NO}_x\text{/yr}$$

SO_x

$$0.324 \text{ lb M10/MMBtu} \times 67.5 \text{ MMBtu/hr} \times 24 \text{ hr/day} = 524.9 \text{ lb NO}_x\text{/day} \text{ (191,589 lb SO}_x\text{/yr)}$$

PM₁₀

$$0.008 \text{ lb M10/MMBtu} \times 67.5 \text{ MMBtu/hr} \times 24 \text{ hr/day} = 13.0 \text{ lb NO}_x\text{/day} \text{ (4,745 lb PM}_{10}\text{/yr)}$$

CO

0.0364 lb M10/MMBtu x 67.5 MMBtu/hr x 24 hr/day
= 59.0 lb CO/day (21,523 lb CO/yr)

VOC

0.0039 lb VOC/MMBtu x 67.5 MMBtu/hr x 24 hr/day
= 6.3 lb VOC/day (2,306 lb VOC/yr)

PE1		
Pollutant	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO _x	19.8	6,403
SO _x	524.9	191,589
PM ₁₀	13.0	4,745
CO	59.0	21,523
VOC	6.3	2,306

2. Post Project Potential to Emit (PE2)

S-1372-16

CO: 0.0185 lb/MMBtu x 62.5 MMBtu/hr x 24 hr/day = 27.8 lb CO/day (10,147 lb SO_x/yr)

PE2		
Pollutant	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO _x	27.0	4,380
SO _x	180.0	65,700
PM ₁₀	21.0	7,665
CO	27.8	10,147
VOC	1.8	657

S-1372-317

PE2		
Pollutant	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO _x	19.8	6,403
SO _x	180.0	65,700
PM ₁₀	13.0	4,745
CO	30.0	10,950
VOC	6.3	2,306

SSIPE Calculation

S-1362-16 (lb/yr)					
Pollutant	NO _x	SO _x	PM ₁₀	CO	VOC
PE2 (lb/yr)	4,380	65,700	7,665	10,147	657
PE1 (lb/yr)	4,380	33,763	7,665	55,845	657
Del PE	0	31,837	0	-45,698	0

S-1372-317 (lb/yr)					
Pollutant	NO _x	SO _x	PM ₁₀	CO	VOC
PE2 (lb/yr)	6,403	65,700	4,745	10,950	2,306
PE1 (lb/yr)	6,403	191,589	4,745	21,523	2,306
Del PE	0	-125,889	0	-10,573	0

SSIPE

NO _x	SO _x	PM ₁₀	CO	VOC
0	-94,052	0	-56,271	0

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

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

Facility emissions are already above the Offset and Major Source Thresholds for all pollutants; therefore, SSPE1 calculations are not necessary.

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

Facility emissions are already above the Offset and Major Source Thresholds for all pollutants; therefore, SSPE2 calculations are not necessary.

5. Major Source Determination

Rule 2201 Major Source Determination:

This source is an existing Major Source for all pollutants and will remain so. No change in other pollutants are proposed or expected as a result of this project.

Rule 2410 Major Source Determination:

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

PSD Major Source Determination (tons/year)						
	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀
Estimated Facility PE before Project Increase				>250*		
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source?				Y		

*District SSPE calculator

As shown above, the facility is an existing PSD major source for at least one pollutant.

6. Baseline Emissions (BE)

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

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise,

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

NO_x, PM₁₀, CO, VOCs

S-1372-16 and -317 are Clean Emissions Units for NO_x, PM₁₀, CO and VOCs as the units meet the Achieved-in-Practice BACT Guideline 1.2.1 requirements (**Attachment**

VII) for these air contaminants. Note for CO, the emissions factor has been lowered to 25 ppmv @ 3% O₂ for this project which is justified by the source test results in **Attachment III**.

SO_x

Units '-16 and '-317 are clean emissions units for SO_x as they are equipped with a common sulfur scrubber. However, Rule 2201 Section 3.8.1.4 states that, for units to be Clean Emissions Units for SO_x, all units in the SLC must be clean emissions units for SO_x. The SLC units are listed in permit conditions and in the following table:

Unit	PTO Condition	SLC Limit (lb SO _x /day)	Units in SO _x SLC
S-1372-16	#7	1193.5	S-1372-13, '-16, '-24, and '-76
S-1372-317	#12	1075.2	S-1372-1, '-2, '-4, '-127, '-317, and flare '100

Note that both TEOR operations '-76 and '-100 are required to have sulfur control systems (by permit condition) designed to meet downstream SO_x permit limits for steam generators '-1, '-2, '-4, '-13, and '-24. The sulfur control equipment is expected to provide at least 95% sulfur control upstream of steam generators '-1, '-2, '-4, '-13, and '-24. Therefore the '-1, '-2, '-4, '-13, '-24, and '-127 (SGs) and TEOR operations '-76 and '-100 i.e. all units in the above SLCs are Clean Emissions Units for SO_x.

7. SB 288 Major Modification

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

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

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO _x	4,380 + 6,403 = 10,863	50,000	No
SO _x	65,700 x 2 = 131,400	80,000	Yes
PM ₁₀	7,665 + 4,745 = 12,410	30,000	No
VOC	657 + 2,306 = 2,963	50,000	No

Since the project's PE2 surpasses the SB 288 Major Modification Thresholds for SO_x, the project Net Emissions Increase (NEI) will be compared to the SB 288 Major Modification thresholds in order to determine if this project constitutes an SB 288 Major Modification.

The project NEI is the total of emission increases for every permit unit addressed in this project and is calculated as follows:

$$NEI = \sum(PE2 - AE)$$

Where: PE2 = The sum of all the PE2s for each permit unit in this project
 AE = Actual emissions, as of a particular date, shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a consecutive 24-month period which precedes the particular date and which is representative of normal source operation. The reviewing authority shall allow the use of a different time period upon a determination that it is more representative of normal source operation

The AE is used to calculate the NEI and make the SB 288 Major Modification determination in the following table.

AE for SO_x is calculated as follows:

'-16

$$0.062 \text{ lb/MMBtu} \times 64,997 \text{ MMBtu/yr} = 4,030 \text{ lb SO}_x/\text{yr}$$

'-317

$$0.1185 \text{ lb/MMBtu} \times 409,361 \text{ MMBtu/yr} = 48,509 \text{ lb SO}_x/\text{yr}$$

SB 288 Major Modification Calculation and Determination					
Pollutant	PE2 (lb/year)	AE* (lb/yr)	NEI (lb/yr)	Thresholds (lb/yr)	SB 288 Major Modification?
SO _x	131,400	4,030 + 48,509 = 52,539	78,861	80,000	No

As demonstrated in the preceding table, this project does not constitute an SB 288 Major Modification for SO_x.

8. Federal Major Modification

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

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. Emission decreases may not cancel out the increases for this determination.

Step 1

Since the project proponent has not provided information required to calculate PAE, the District will use the PE2 to calculate the emissions increase:

$$\text{Project Emissions Increase (EI)} = \sum(\text{PE2} - \text{BAE})$$

For calculation of BAE, please refer to Assumption Section and **Attachment V**.

Project Emissions Increase

'-16

Pollutant	PE2 (lb/yr)	BAE*	EI
NO _x	4,380	411	3,969
SO _x	65,700	4,030	61,670
PM10	7,665	910	6,755
VOC	657	80	577

*BAE calculations

NO_x: 64,997 MMBtu/yr x 0.0063 lb NO_x/MMBtu (from source test) = 411 lb NO_x/yr

SO_x: 0.062 lb/MMBtu x 64,997 MMBtu/yr = 4,030 lb SO_x/yr

PM10: 0.014 lb/MMBtu x 64,997 MMBtu/yr = 910 lb PM10/yr

VOC: 0.0012 lb/MMBtu x 64,997 MMBtu/yr = 80 lb VOC/yr

'-317

Pollutant	PE2 (lb/yr)	BAE*	EI
NOx	7,194	4,368	2,826
SOx	65,700	48,509	17,191
PM10	4,745	3,275	1,470
VOC	2,306	1,597	709

*BAE calculations

NOx: 409,361 MMBtu/yr x 0.0107 lb NOx/MMBtu (source test) = 4,368 lb NOx/yr

SOx: 0.1185 lb/MMBtu (source test) x 409,361 MMBtu/yr = 48,509 lb SOx/yr

PM10: 0.008 lb/MMBtu x 409,361 MMBtu/yr = 3,275 lb PM10/yr

VOC: 0.0039 lb/MMBtu x 409,361 MMBtu/yr = 1,597 lb VOC/yr

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions Increases (lb/yr)	Thresholds (lb/yr)	Federal Major Modification?
NO _x *	3969 + 2826 = 6795	0	Yes
VOC*	577 + 709 = 1,286	0	Yes
PM ₁₀	6,755 + 1,470 = 8,225	30,000	No
PM _{2.5}	8,255	20,000	No
SO _x	61,670 + 17,191 = 78,861	80,000	No

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

Federal Offset Quantities:

The Federal offset quantity is only calculated only for the pollutants for which the project is a Federal Major Modification. The Federal offset quantity is the sum of the annual emission changes for all new and modified emission unit in a project calculated as the potential to emit after the modification (PE2) minus the actual emissions (AE) during the baseline period for each emission unit multiplied by the applicable federal offset ratio.

NOx		Federal Offset Ratio	1.5
Permit No.	Actual Emissions (lb/year) AE	Potential Emissions (lb/year) PE	Emissions Change (lb/yr)
S-1372-16	411	4,380	3,969
S-1372-317	4,368	7,194	2,826
	Net Emission Change (lb/year):		6,795
	Federal Offset Quantity: (NEC * 1.5)		10,193

VOC		Federal Offset Ratio	1.5
Permit No.	Actual Emissions (lb/year) AE	Potential Emissions (lb/year) PE	Emissions Change (lb/yr)
S-1372-16	80	657	577
S-1372-317	1,597	2,306	709
	Net Emission Change (lb/year):		1,286
	Federal Offset Quantity: (NEC * 1.5)		1,929

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

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

I. Project Location Relative to Class 1 Area

As demonstrated in the “PSD Major Source Determination” Section above, the facility was determined to be a existing PSD Major Source. Because the project is not located within 10 km (6.2 miles) of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

II. Project Emission Increase – Significance Determination

a. Evaluation of Calculated Post-project Potential to Emit for New or Modified Emissions Unit vs PSD Significant Emission Increase Thresholds

As a screening tool, the post-project potential to emit from all new and modified unit is compared to the PSD significant emission increase thresholds, and if the total potentials to emit from all new and modified unit are below the applicable thresholds, no futher PSD analysis is needed.

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)					
	NO ₂	SO ₂	CO	PM	PM ₁₀
Total PE from New and Modified Unit	5.8	100	10.5	6.2	6.2
PSD Significant Emission Increase Thresholds	40	40	100	25	15
PSD Significant Emission Increase?	N	Y	N	N	N

As demonstrated in the table above, because the post-project potential to emit from all new and modified emission units is greater than at least one PSD significant emission increase threshold, further analysis is required to determine if the project will result in an increase greater than the PSD significant emission increase thresholds, see step b. below for further analysis.

b. Evaluation of Calculated Emission Increases vs PSD Significant Emission Increase Thresholds

In this step, the emission increase for each subject pollutant is compared to the PSD significant emission increase threshold, and if the emission increase for each subject pollutant is below their threshold, no further analysis is required.

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

For existing emissions units, the increase in emissions is calculated as follows:

$$\text{Emission Increase} = \text{PAE} - \text{BAE} - \text{UBC}$$

Where: PAE = Projected Actual Emissions, and
BAE = Baseline Actual Emissions
UBC = Unused baseline capacity

The project's total emission increases, as calculated in the Federal Major Modification section above, are listed below and compared to the PSD significant emission increase thresholds in the following table.

PSD Significant Emission Increase Determination: Emission Increase (tons/year)					
	NO ₂	SO ₂	CO	PM	PM ₁₀
Emission Increases (only)	0	0	0	0	0
PSD Significant Emission Increase Thresholds	40	40	100	25	15
PSD Significant Emission Increase?	No	No	No	No	No

As demonstrated above, because the post-project total potentials to emit from all new and modified emission units are below the PSD significant emission increase thresholds, this project is not subject to the requirements of Rule 2410 and no further discussion is required.

10. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen.

The QNEC shall be calculated as follows:

QNEC = (PE2 – BE)/4, where:

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

PE2 = Post Project Potential to Emit for each emissions unit, lb/yr.

BE = Baseline Emissions (per Rule 2201) for each emissions unit, lb/yr.

S-1372-16

QNEC (lb/qtr)					
Pollutant	NO _x	SO _x	PM ₁₀	CO	VOC
PE2 (lb/yr)	4,380	65,700	7,665	10,147	657
PE1 (lb/yr)	4,380	33,763	7,665	55,845	657
QNEC	0	7984.25	0	-11,424.5	0

S-1372-317

QNEC (lb/qtr)					
Pollutant	NO _x	SO _x	PM ₁₀	CO	VOC
PE2 (lb/yr)	7,194	65,700	4,745	10,950	2306
PE1 (lb/yr)	7,194	191,589	4,745	21,523	2306
QNEC	0	-31,472.25	0	-2,643.25	0

VIII. Compliance Determination

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

Pursuant to District Rule 2201, Section 4.1, BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an Adjusted Increase in Permitted Emissions (AIPE) exceeding two pounds per day, and/or

- d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

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

a. New emissions unit – PE > 2 lb/day

As discussed in Section I above, there are no new emissions units associated with this project. Therefore, BACT for new units with PE > 2 lb/day purposes is not triggered.

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

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

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

$$\text{AIPE} = \text{PE}_2 - \text{HAPE}$$

Where,

- AIPE = Adjusted Increase in Permitted Emissions, (lb/day)
- PE₂ = Post-Project Potential to Emit, (lb/day)
- HAPE = Historically Adjusted Potential to Emit, (lb/day)

$$\text{HAPE} = \text{PE}_1 \times (\text{EF}_2/\text{EF}_1)$$

Where,

- PE₁ = The emissions unit's PE prior to modification or relocation, (lb/day)
- EF₂ = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF₂ is greater than EF₁ then EF₂/EF₁ shall be set to 1
- EF₁ = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

$$\text{AIPE} = \text{PE}_2 - (\text{PE}_1 * (\text{EF}_2 / \text{EF}_1))$$

S-1372-16:

	PE1	PE2	EF2/EF1	AIPE
NOx	27	27.0	1	0
SOx	92.5	180	0.12/0.061 = 1	87.5
PM10	21.0	21.0	1	0
CO	153.0	27.8	0.0185/0.102	0
VOC	1.8	1.8	1	0

S-1372-317:

	PE1	PE2	EF2/EF1	AIPE	
NOx	19.8	19.8	1	0	
SOx	524.9	180	0.111/0.324	0	
PM10	13.0	13.0	1	0	
CO	59.0	30.0	0.0185/0.0364	0	
VOC	6.3	6.3	1	0	

BACT is triggered for SOx for '16.

d. SB 288/Federal Major Modification

As discussed in Sections VII.C.8 above, this project constitutes a Federal Major Modification for NOx and VOC emissions. Therefore, BACT is triggered for NOx and VOC for all emissions units in the project for which there is an emission increase (as defined in 40 CFR 51.165). S-1372-16 and '317 have emissions increases for NOx and VOC.

2. BACT Guideline

BACT Guideline 1.2.1 Oilfield Steam Generator (≥ 20 MMBtu/hr) requirements are listed above in Section VII.

3. Top-Down BACT Analysis

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

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

S-1372-16

NOx: 7 ppmvd @ 3% O2
SOx: fuel treated to remove 95% by weight sulfur compounds
VOC: gaseous fuel

S-1372-317

NOx: 7 ppmvd @ 3% O2
VOC: gaseous fuel

B. Offsets

1. Offset Applicability

Pursuant to District Rule 2201, Section 4.5, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

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

Offset Determination (lb/year)					
	NO_x	SO_x	PM₁₀	CO	VOC
SSPE2	> 20,000	> 54,750	> 29,200	> 200,000	> 20,000
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	Yes	Yes	Yes	Yes	Yes

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for NO_x, SO_x, PM₁₀, CO, VOC. Therefore offset calculations will be required for this project.

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

Offsets Required (lb/year) = $(\Sigma[PE2 - BE] + ICCE) \times DOR$, for all new or modified emissions unit in the project,

Where,

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

BE = Baseline Emissions, (lb/year)

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

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

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

otherwise,

BE = HAE

Both '16 and '317 are clean emissions units for NO_x, SO_x, PM₁₀, CO, and VOCs. Therefore BE = PE1.

ICCE = 0.

$\Sigma(PE2 - PE1)$ which is the SSIPE < 0 for NO_x, SO_x, PM₁₀, CO, and VOCs.as shown in the calculation section above.

Offsets are triggered but not required under NSR.

As discussed above, District offsets are triggered but not required for VOC under NSR. However, as demonstrated above, this project does trigger Federal Major Modification requirements for VOC emissions and federal offset quantities are required for this project for VOC. Pursuant to Section 7.4.2.1 of District Rule 2201, emission reduction credits used to satisfy federal offset quantities for VOC must be creditable and surplus at the time of use (ATC issuance).

Surplus at the Time Of Use Emission Reduction Credits

The applicant has stated that the facility plans to use ERC certificate N-1553-1 to satisfy the federal offset quantities for VOC required for this project. Therefore, pursuant to the ERC surplus analysis in **Attachment VIII**, the ERC has 100% surplus value and as such the District has verified that the credits from the ERC certificate(s) provided by the applicant are sufficient to satisfy the federal offset quantities for VOC required for this project.

Required District and Federal Offset Quantities Summary

As discussed above the Federal Offset Quantities to be offset is 1,929 lb VOC/yr or 482 lb VOC/qtr.

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

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

Redistribution of Required Quarterly Offsets (where X is the annual amount of offsets, and $X \div 4 = Y.z$)				
Value of z	Quarter 1	Quarter 2	Quarter 3	Quarter 4
0.0	Y	Y	Y	Y
0.25	Y	Y	Y	Y+1
0.5	Y	Y	Y+1	Y+1
0.75	Y	Y+1	Y+1	Y+1

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

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>	<u>Total Annual</u>
482	482	482	483	1,929

For -16:

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>	<u>Total Annual</u>
241	241	241	241	964

For -317

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>	<u>Total Annual</u>
241	241	241	242	965

The applicant has proposed to use the following emission reduction certificates:

	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
ERC #N-1553-1	7,335	7,335	7,335	7,335

Previous Reservations

S-1372, 1204327, 3 x 85 MMBtu/hr SGs 3 x 1535; 4,608 lb VOC/qtr

S-1372, 1200729, 1 x 85 MMBtu/hr; 838/qtr

This project 482/qtr

Total = 5,928/qtr

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

Proposed Rule 2201 Offset Permit Conditions

The following permit conditions will be added to the Authority to Construct:

S-1372-16-27

- *{GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 241 lb, 2nd quarter – 241 lb, 3rd quarter - 241 lb, and fourth quarter - 243 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 8/15/19) for the ERC specified below. [District Rule 2201]*
- *{GC# 1983} ERC Certificate Number N-1553-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]*

3. ERC Withdrawal Calculations

The applicant must identify the ERC Certificate(s) to be used to offset the increase of VOC emissions for the project. As indicated in previous section, the applicant is proposing to use ERC certificate # N-1553-1 to mitigate the increases of VOC emissions associated with this project. See **Attachment IX** for detailed ERC Withdrawal Calculations.

C. Public Notification

1. Applicability

Pursuant to District Rule 2201, Section 5.4, public noticing is required for:

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

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

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

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

b. PE > 100 lb/day

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

c. Offset Threshold

Pursuant to District Rule 2201, Section 4.5.3, offset requirements shall be triggered on a pollutant-by-pollutant basis, unless exempted pursuant to Section 4.6, offsets shall be required if the post-project Stationary Source Potential to Emit (SSPE2) equals or exceeds specific threshold levels.

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

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	> 20,000	> 20,000	20,000 lb/year	No
SO _x	> 54,750	> 54,750	54,750 lb/year	No
PM ₁₀	> 29,200	> 29,200	29,200 lb/year	No
CO	> 200,000	> 200,000	200,000 lb/year	No
VOC	> 20,000	> 20,000	20,000 lb/year	No

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

d. SSIPE > 20,000 lb/year

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

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	> 20,000	> 20,000	0	20,000 lb/year	No
SO _x	> 54,750	> 54,750	-94,052	20,000 lb/year	No
PM ₁₀	> 29,200	> 29,200	0	20,000 lb/year	No
CO	> 200,000	> 200,000	-56,271	20,000 lb/year	No
VOC	> 20,000	> 20,000	0	20,000 lb/year	No

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

e. Title V Significant Permit Modification

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

2. Public Notice Action

As discussed above, public noticing is required for this project which is a Title V Significant Modification. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published at the District's website for public review prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

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

Proposed Rule 2201 (DEL) Conditions:

S-1372-16

SO_x (as SO₂) emissions shall not exceed from steam generator 180.0 lb/day. [District Rule 2201] Y

Total casing gas sulfur oxide (SO_x as SO₂) emissions shall not exceed 1193.5 lb/day for the following steam generators and standby flare: S-1372-13 (#16), S-1372-16 (#12), S-1372-24 (#20), and S-1372-76. SO_x as SO₂ emissions from '-16 shall be calculated as [(mscf combusted in '-16)/(combined mscf combusted in '-16, '-127, and '-317)] x total SO_x emissions from scrubber/ESP '-127. [District Rule 2201] Y

Emissions shall not exceed any of the following: 27 lb NOx/day, 4,380 lb NOx/year. [District Rule 2201] Y

Except during startup and shutdown emissions shall not exceed any of the following: PM10: 0.014 lb/MMBtu; NOx (as NO2): 0.008 lb/MMBtu or 7 ppmv @ 3% O2; VOC: 0.0012 lb/MMBtu; or CO: 25 ppmv @ 3% O2. [District Rules 2201, 4305, 4306, and 4320] Y

S-1372-317

SOx (as SO2) emissions from steam generator shall not exceed 180.0 lb/day. [District Rule 2201] Y

Except during start-up and shutdown, emissions from the steam generator shall not exceed any of the following limits: 9 ppmvd NOX @ 3% O2 or 0.011 lb-NOX/MMBtu, , 0.008 lb-PM10/MMBtu, 25 ppmvd CO @ 3% O2 or 0.0185 lb-CO/MMBtu, or 0.0039 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Y

During start-up and shutdown, emissions from the steam generator shall not exceed any of the following limits: 15 ppmvd NOX @ 3% O2 or 0.018 lb-NOX/MMBtu, 0.008 lb-PM10/MMBtu, 25 ppmvd CO @ 3% O2 or 0.0185 lb-CO/MMBtu, or 0.0039 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Y

New: NOx emissions shall not exceed either of the following: 19.8 lb/day and 6,403 lb/yr. [District Rule 2201]

Total sulfur oxide (SOx as SO2) emissions shall not exceed 1,075.2 lb/day from steam generators S-1372-1, '2, '4, '127, '317, and flare '100. [District Rule 2201] Y

E. Compliance Assurance

1. Source Testing

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

2. Monitoring

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

3. Recordkeeping

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

S-1372-16 and -317

New

Permittee shall maintain daily records of SOx (as SO2) emissions (lb/day) from steam generator. [District Rule 2201] Y

Existing

{519} 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 and record specific type of noncertified fuel used. [District Rule 2520, 9.4.2] Y

Permittee shall maintain records of volume of fuel gas burned and TEOR gas incinerated, fuel gas and TEOR gas sulfur content, and such records shall be retained on site for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 1070 and 2520, 9.4.2] Y

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

Section 4.14 of District Rule 2201 requires that an AAQA be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard.

There is no increase in emissions associated with the project and therefore AAQA modelling is not required.

G. Compliance Certification

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

H. Alternate Siting Analysis

The current project occurs at an existing facility and the proposed project it solely to modify an existing steam generators.

Since the project will provide steam to be used at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

Rule 2410 Prevention of Significant Deterioration

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

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. A significant permit modification is defined as a “permit amendment that does not qualify as a minor permit modification or administrative amendment.”

Minor permit modifications are not Title I modifications as defined in this rule. This project triggers a Federal Major Modification, as a result, the proposed project constitutes a Significant Modification to the Title V Permit. SPR’s Title V Compliance Certification form is included in **Attachment X**.

Rule 4001 New Source Performance Standards (NSPS)

40 CFR Part 60, Subpart Dc applies to Small Industrial-Commercial-Industrial Steam Generator between 10 MMBtu/hr and 100 MMBtu/hr (post-6/9/89 construction, modification or, reconstruction).

The subject steam generator has a rating of 85 MMBtu/hr and are fired on natural/TEOR gas. Subpart Dc has no standards for gas-fired steam generator. Therefore the subject steam generator is not affected facility(s) and subpart Dc does not apply.

Rule 4101 Visible Emissions

Per Section 5.0, no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). The units currently operate in compliance with the rule and continued compliance is expected.

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

Rule 4102 Nuisance

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

As demonstrated above, there are no increases in emissions associated with this project, therefore a health risk assessment is not necessary and no further risk analysis is required.

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. Units S-1372-16, 127, and '317 will be served by an electrostatic precipitator are expected to continue to operate in compliance with the rule.

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

District Rule 4305 Boilers, Steam Generator and Process Heaters – Phase 2

The units have a maximum heat input of 62.5 MMBtu/hr. Pursuant to Section 2.0 of District Rule 4305, the unit is subject to District Rule 4305, *Boilers, Steam Generator and Process Heaters – Phase 2*.

In addition, the unit is also subject to District Rule 4306, *Boilers, Steam Generator and Process Heaters – Phase 3*.

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

District Rule 4306 Boilers, Steam Generator and Process Heaters – Phase 3

Pursuant to Section 2.0 of District Rule 4306, the units are subject to District Rule 4306, *Boilers, Steam Generator and Process Heaters – Phase 3*.

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

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

This rule limits NO_x, CO, SO₂ and PM₁₀ emissions from boilers, steam generator and process heaters rated greater than 5 MMBtu/hr. This rule also provides a compliance option of payment of fees in proportion to the actual amount of NO_x emitted over the previous year.

The units in this project are all rated at greater than 5 MMBtu/hr heat input and are subject to this rule. They currently meet the emissions limits, compliance testing, and administrative requirements of the rule and the project is not expected to affect compliance status. Continued compliance is expected.

Rule 4401 Steam Enhanced Crude Oil Production Wells

The TEOR operation '100 is currently operating in compliance with the rule and the project is not expected to affect compliance status. Continued compliance 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.

SO_x EF for '16: 180 lb/day x day/24 hr x hr/62.5 MMBtu = 0.120 lb SO_x/MMBtu

SO_x EF for '319 180 lb/day x day/24 hr x hr/67.5 MMBtu = 0.111 lb SO_x/MMBtu

Compliance with the rule for unit '317 with pre-project emissions factor of 0.324 lb SO_x/MMBtu is demonstrated below. The above post-project emissions factors are less than 0.324 lb SO_x/MMBtu.

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

$$\text{Volume SO}_2 = \frac{n RT}{P}$$

With:

N = moles SO₂

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

P (Standard Pressure) = 14.7 psi

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

EPA F-Factor for Natural Gas: 8,710 dscf/MMBtu at 68 °F, equivalent to

$$\text{Corrected F - factor} = \left(\frac{8,710 \text{ dscf}}{\text{MMBtu}} \right) \times \left(\frac{60^\circ \text{F} + 459.6}{68^\circ \text{F} + 459.6} \right) = 8,578 \frac{\text{dscf}}{\text{MMBtu}} \text{ at } 60^\circ \text{F}$$

$$\frac{0.324 \text{ lb} - \text{SO}_x}{\text{MMBtu}} \times \frac{\text{MMBtu}}{8,578 \text{ dscf}} \times \frac{1 \text{ lb} \cdot \text{mol}}{64 \text{ lb}} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ\text{R}} \times \frac{520^\circ\text{R}}{14.7 \text{ psi}} \times \frac{1,000,000 \cdot \text{parts}}{\text{million}} = 224 \frac{\text{parts}}{\text{million}}$$

$\text{Sulfur Concentration} = 224 \frac{\text{parts}}{\text{million}} < 2,000 \text{ ppmv (or 0.2\%)}$

Therefore, compliance with District Rule 4801 requirements is expected.

California Health & Safety Code 42301.6 (School Notice)

The District has verified that this site is not located within 1,000 feet of a school. Therefore,

California Environmental Quality Act (CEQA)

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

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

Oil and gas operations in Kern County must comply with the Kern County Zoning Ordinance – 2015 (C) Focused on Oil and Gas Local Permitting. In 2015, Kern County revised the Kern County Zoning Ordinance Focused on Oil and Gas Activities (Kern Oil and Gas Zoning Ordinance) in regards to future oil and gas exploration, and drilling and production of hydrocarbon resource projects occurring within Kern County.

Kern County served as lead agency for the revision to their ordinance under the California Environmental Quality Act (CEQA), and prepared an Environmental Impact Report (EIR) that was certified on November 9, 2015. The EIR evaluated and disclosed to the public the environmental impacts associated with the growth of oil and gas exploration in Kern County, and determined that such growth will result in significant GHG impacts in the San Joaquin Valley. As such, the EIR included mitigation measures for GHG.

The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source

Review Rule (Rule 2201), (CEQA Guidelines §15381). As a Responsible Agency, the District is limited to mitigating or avoiding impacts for which it has statutory authority. The District does not have statutory authority for regulating GHGs. The District has determined that the applicant is responsible for implementing GHG mitigation measures imposed in the EIR by the Kern County for the Kern County Zoning Ordinance.

District CEQA Findings

The proposed project is located in Kern County. It was approved by Kern County under its permitting process prior to March 25, 2020 and is thus subject to the Kern County Zoning Ordinance – 2015 (C) Focused on Oil and Gas Local Permitting. The Kern County Zoning Ordinance was developed by the Kern County Planning Agency as a comprehensive set of goals, objectives, policies, and standards to guide development, expansion, and operation of oil and gas exploration within Kern County.

In 2015, Kern County revised their Kern County Zoning Ordinance in regards to exploration, drilling and production of hydrocarbon resources projects. Kern County, as the lead agency, is the agency that will enforce the mitigation measures identified in the EIR, including the mitigation requirements of the Oil and Gas ERA. As a responsible agency the District complies with CEQA by considering the EIR prepared by the Lead Agency, and by reaching its own conclusion on whether and how to approve the project involved (CCR §15096). The District has reviewed the EIR prepared by Kern County, the Lead Agency for the project, and finds it to be adequate. The District also prepared a full findings document. The full findings document, California Environmental Quality Act (CEQA) Statement of Findings for the Kern County Zoning Ordinance EIR contains the details of the District's findings regarding the Project. The District's implementation of the Kern Zoning Ordinance and its EIR applies to ATC applications received for any new/modified equipment used in oil/gas production in Kern County, including new wells, between November 5, 2015 and March 25, 2020. The full findings applies to the Project and the Project's related activity equipment(s) is covered under the Kern Zoning Ordinance. To reduce project related impacts on air quality, the District evaluates emission controls for the project such as Best Available Control Technology (BACT) under District Rule 2201 (New and Modified Stationary Source Review). In addition, the District is requiring the applicant to surrender emission reduction credits (ERC) for stationary source emissions above the offset threshold.

Thus, the District concludes that through a combination of project design elements, permit conditions, and the Oil and Gas ERA, the project will be fully mitigated to result in no net increase in emissions. Pursuant to CCR §15096, prior to project approval and issuance of ATCs the District prepared findings.

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit is based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate

public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

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

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue the ATCs subject to the permit conditions on the attached draft ATCs in **Attachment XI**.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-1372-16	3020-02 H	62.5 MMBtu/hr	\$1238.00
S-1372-127	3020-02 H	62.5 MMBtu/hr	\$1238.00
S-1372-317	3020-02 H	62.5 MMBtu/hr	\$1238.00

Attachments

- I: Current PTOs
- II: Location Photo
- III: Source Test Data
- IV: Process Diagram
- V: Projected and Baseline Actual Emission Data
- VI: Emissions Profiles
- VII: BACT Analysis
- VIII: ERC Surplus Analysis
- IX: ERC Withdrawal Calculations
- X: Title V and Statewide Compliance Documents
- XI: Draft ATCs

Attachment I
Current PTOs

San Joaquin Valley

Air Pollution Control District

PERMIT UNIT: S-1372-16-25

EXPIRATION DATE: 05/31/2021

SECTION: NW 6 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:

62.5 MMBTU/HR NATURAL GAS/TEOR GAS-FIRED STEAM GENERATOR (#12) (DIS# 44519-76) EQUIPPED WITH A NORTH AMERICAN GLE ULTRA LOW NOX BURNER, FGR AND O2 CONTROLLER (MCKITTRICK FRONT LEASE)

PERMIT UNIT REQUIREMENTS

1. This steam generator is approved to operate at the following locations: Sec. 23, T31S, R22E, NW 1/4 Sec. 6, T30S, R22E, and NW 1/4 Sec. 10, T29S, R21E [District Rule 2201] Federally Enforceable Through Title V Permit
2. The permittee shall notify the District Compliance Division of each location at which the operation is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 2201] Federally Enforceable Through Title V Permit
3. No less than 0.5 miles of roadway shall be paved and maintained in good repair. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The steam generator shall be equipped with piping from TEOR operation S-1372-100 to fuel gas inlet on burner when operating at Sec. 23, T31S, R22E. [District Rule 2201] Federally Enforceable Through Title V Permit
5. SOx (as SO2) emissions shall not exceed 92.5 lb/day except as provided below. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Steam generator S-1372-317 shall be exclusively fired on PUC quality natural gas when this steam generator is incinerating TEOR vapors. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Total casing gas sulfur oxide (SOx as SO2) emissions shall not exceed 1193.5 lb/day for the following steam generators and standby flare: S-1372-13 (#16), S-1372-16 (#12), S-1372-24 (#20), and S-1372-76. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Emissions shall not exceed any of the following: 27 lb NOx/day, 4,380 lb NOx/year. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Except during startup and shutdown emissions shall not exceed any of the following: PM10: 0.014 lb/MMBtu; NOx (as NO2): 0.008 lb/MMBtu or 7 ppmv @ 3% O2; VOC: 0.0012 lb/MMBtu; or CO: 138 ppmv @ 3% O2. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
11. All vapor recovery gas burned in this device shall first be treated by the sulfur removal system listed on S-1372-100 so that at least 95% by weight of the sulfur is removed. [District Rules 2201, 4301, 4320, 4406, and 4801] Federally Enforceable Through Title V Permit
12. Compliance with 95% by weight sulfur removal efficiency requirement shall be conducted annually. [District Rule 4320] Federally Enforceable Through Title V Permit
13. Exhaust stack shall be equipped with adequate provisions facilitating the collection of gas samples consistent with EPA Test Methods. [District Rule 1081] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

14. 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
15. 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
16. 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
17. 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
18. The portable analyzer shall be calibrated prior to each use with a two-point calibration method (zero and span). Calibration shall be performed with certified calibration gases. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
19. Source testing to measure NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320] 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 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
21. 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
22. 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
23. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the Permit to Operate, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306, and 4320] 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.

24. 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
25. 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] Federally Enforceable Through Title V Permit
26. 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
27. 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
28. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit
29. Stack gas velocities shall be determined using EPA Method 2. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
30. 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
31. In lieu of the annual source testing requirements of Rule 4320, compliance with the applicable emission limits may be demonstrated by submittal of annual emissions test results to the District from a unit or units that represents a group of units, provided that all of the conditions in Section 6.3.2 are met and documented. [District Rule 4320] Federally Enforceable Through Title V Permit
32. Annual test results submitted to the District from unit(s) representing a group of units may be used to demonstrate compliance with NOx and CO limits 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 NOx or CO emissions 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, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
33. The following conditions must be met for representative unit(s) to be used to demonstrate compliance for NOx and CO 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, 4306, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
34. All units in a group for which representative units are source tested to demonstrate compliance for NOx and CO limits of this permit 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 the each unit of the group including all preventative and corrective maintenance work done. [District Rules 4305, 6.3.2, 4306, 6.3.2, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
35. All units in a group for which representative units are source tested to demonstrate compliance for NOx and CO limits 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, 4306, 6.3.2, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
36. The number of representative units source tested to demonstrate compliance for NOx and CO limits 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, 4306, 6.3.2, 4320, and 4351, 6.3.2] 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.

37. 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 quarterly. If a quarterly fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
38. 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
39. 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 3246, D 4084, or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
40. 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 third party fuel supplier or determined by: ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.3.2; 4305, 6.2; 4306, 6.2; and 4320, 6.2] 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 and record specific type of noncertified fuel used. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
42. Permittee shall maintain records of volume of fuel gas burned and TEOR gas incinerated, fuel gas and TEOR gas sulfur content, and such records shall be retained on site for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 1070 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
43. Sulfur compound emissions shall not exceed 0.11 lb of sulfur per million BTU. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas; multiplying the reported sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by a combination of source testing for sulfur compounds and fuel analysis. [District Rule 4406]
44. 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. 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 4801 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
45. This unit commenced construction, modification, or reconstruction prior to June 19, 1984. This unit has not been used to produce electricity for sale in 1985 or on or after November 15, 1990. Therefore, the requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [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-1372-100-33

EXPIRATION DATE: 05/31/2021

SECTION: 06 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:

TEOR OPERATION WITH WELL CASING COLLECTION SYSTEM WITH VAPOR PIPING TO UNIT S-1372-99 SERVING 633 STEAM ENHANCED WELLS WITH 3-PHASE SEPARATORS, STANDBY FLARE, SLUG CATCHER, SCRUBBERS, HEAT EXCHANGERS, COMPRESSORS, PUMPS, SULFA CHECK AND LIQUID SULFUR REMOVAL SYSTEMS (GAMBLE/MCKITTRICK FRONT)

PERMIT UNIT REQUIREMENTS

1. Operation shall include the following equipment: 633 steam enhanced wells, well vent vapor collection system, standby flare, slug catchers, heat exchangers, compressors, pumps, vapor piping, dry fuel gas sulfur scrubbing system and liquid sulfur removal systems, tanks and 3-phase separators. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Operation shall include vapor piping from tanks S-1372-128, -412, S-1641-34, -35, -36, and -37 to vapor control system. [District Rule 2201] Federally Enforceable Through Title V Permit
3. At least one sulfur removal system shall be operated at all times. [District Rule 2201] Federally Enforceable Through Title V Permit
4. There shall be no leaks exceeding 10,000 ppmv from fugitive emissions components associated with liquid sulfur removal system. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Collected condensate shall be discharged into production pipeline. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Flare S-1372-100 shall only be used to incinerate TEOR vapors when one or more of steam generators S-1372-1, -2 or -4 are not in operation. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Flare shall only use PUC quality natural gas as auxiliary fuel. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Flare shall be designed for smokeless operation, with no visible emissions in excess of 5% opacity. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The flare shall be operated according to the manufacturer's specifications, a copy of which shall be maintained on site. [District Rule 2520] Federally Enforceable Through Title V Permit
10. The flare in this permit shall be inspected every two weeks while in operation for visible emissions. If visible emissions are observed, corrective action shall be taken. If visible emissions continue, an EPA method 9 test shall be conducted within 72 hours. [District Rule 2520] Federally Enforceable Through Title V Permit
11. Flare shall comply with all of the applicable requirements of Rule 4311. [District Rule 4311] Federally Enforceable Through Title V Permit
12. The flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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13. The flare 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] Federally Enforceable Through Title V Permit
14. 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 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] Federally Enforceable Through Title V Permit
15. Flares using flow-sensing automatic ignition systems and not using a continuous flame pilot shall use purge gas for purging. [District Rule 4311] Federally Enforceable Through Title V Permit
16. Open flares (air-assisted, steam-assisted, or non-assisted) in which the flare gas pressure is less than 5 psig shall be operated in such a manner that meets the provisions of 40 CFR 60.18. [District Rule 4311] Federally Enforceable Through Title V Permit
17. Flaring is prohibited unless it is consistent with an approved flare minimization plan (FMP), pursuant to Rule 4311, Section 6.5, 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 as defined by Section 3.7 and is necessary to prevent an accident, hazard or release of vent gas directly to the atmosphere [District Rule 4311] Federally Enforceable Through Title V Permit
18. The operator of a flare subject to flare minimization requirements pursuant to Section 5.8 shall monitor the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. The operator shall maintain records pursuant to Section 6.1.7. Flares that the operator can verify, based on permit conditions, are not capable of producing reportable flare events pursuant to Section 6.2.2 shall not be required to monitor vent gas flow to the flare. [District Rule 4311] Federally Enforceable Through Title V Permit
19. The following records shall be maintained, retained on-site for a minimum of five years, and made available to the APCO, ARB, and EPA upon request: 1) A copy of the compliance determination conducted pursuant to Section 6.4.1, 2) For flares used during an emergency, record of the duration of flare operation, amount of gas burned, and the nature of the emergency situation, 3) A copy of the approved flare minimization plan pursuant to Section 6.5, 4) On and after July 1, 2012, where applicable, a copy of annual reports submitted to the APCO pursuant to Section 6.2, and 5) Where applicable, monitoring data collected pursuant to Sections 5.10. [District Rule 4311] Federally Enforceable Through Title V Permit
20. The operator of a flare subject to flare minimization plans pursuant to Section 5.8 of Rule 4311 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] Federally Enforceable Through Title V Permit
21. Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare minimization plans pursuant to Section 5.8 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: 1) The results of an investigation to determine the primary cause and contributing factors of the flaring event; 2) Any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented; 3) 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 4) The date, time, and duration of the flaring event. [District Rule 4311] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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22. Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare monitoring requirements pursuant to Rule 4311, Sections 5.10, 6.6, 6.7, 6.8, 6.9, and 6.10, as appropriate, 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: 1) The total volumetric flow of vent gas in standard cubic feet for each day, 2) Hydrogen sulfide content, methane content, and hydrocarbon content of vent gas composition pursuant to Section 6.6, 3) If vent gas composition is monitored by a continuous analyzer or analyzers pursuant to Section 5.11, average total hydrocarbon content by volume, average methane content by volume, and depending upon the analytical method used pursuant to Section 6.3.4, total reduced sulfur content by volume or hydrogen sulfide content by volume of vent gas flared for each hour of the month, 4) If the flow monitor used pursuant to Section 5.10 measures molecular weight, the average molecular weight for each hour of each month, 5) 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, 6) Flare monitoring system downtime periods, including dates and times, 7) For each day and for each month provide calculated sulfur dioxide emissions, and 8) A flow verification report for each flare subject to this rule. The flow verification report shall include flow verification testing pursuant to Section 6.3.5. [District Rule 4311] Federally Enforceable Through Title V Permit
23. 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. Hydrogen sulfide content of vent gas shall be determined using ASTM Method D 1945-96, ASTM Method UOP 539-97, ASTM Method D 4084-94, or ASTM Method D 4810-88. [District Rule 4311] Federally Enforceable Through Title V Permit
24. Upon request, the operator of flares that are subject to Section 5.6 shall make available to the APCO the compliance determination records that demonstrate compliance with the provisions of 40 CFR 60.18, (c)(3) through (c)(5). [District Rule 4311] Federally Enforceable Through Title V Permit
25. Operator shall monitor vent gas composition using one of the five methods pursuant to Section 6.6.1 through Section 6.6.5, as appropriate. [District Rule 4311] Federally Enforceable Through Title V Permit
26. Operator shall monitor the volumetric flows of 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] Federally Enforceable Through Title V Permit
27. All of the general monitoring provisions of Section 6.9, as applicable, shall be met. [District Rule 4311] Federally Enforceable Through Title V Permit
28. 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] Federally Enforceable Through Title V Permit
29. Vapors from this well vent vapor control system shall be incinerated in steam generators S-1372-1, -2, -4, -30, -32, -33, -127, -317, -334 or standby flare and/or injected into DOGGR approved gas injection wells. [District Rule 2201] Federally Enforceable Through Title V Permit
30. Total sulfur oxide (SO_x as SO₂) emissions shall not exceed 1,075.2 lb/day for the following steam generators: S-1372-1, -2, -4, '127, '317, and standby flare. [District Rule 2201] Federally Enforceable Through Title V Permit
31. Fugitive emissions from vapor collection and control system shall not exceed 239.6 lb VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit
32. There shall be no more than 30 gas leaks. [District Rule 2201] Federally Enforceable Through Title V Permit
33. Permittee shall maintain accurate records of well casing vapor H₂S concentration (periodic sampling of no less than once per month), daily volume of casing vapor incinerated, and calculated daily SO₂ emissions from S-1372-1, '-2, and '-4. [District Rules 1070 and 2520] Federally Enforceable Through Title V Permit
34. Permittee shall maintain with the permit a current listing of all steam enhanced wells connected to the casing vent control system and shall make such listing readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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35. Permittee shall maintain accurate component count for TEOR operation according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c (Feb 1999), Screening Value Range emission factors. Permittee shall update such records when new components are installed. [District Rule 2201] Federally Enforceable Through Title V Permit
36. The following test method shall be used for fuel gas sulfur content - ASTM D3246 or double GC for H₂S and mercaptans. [District Rule 2520] Federally Enforceable Through Title V Permit
37. 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
38. During the time any steam-enhanced crude oil production well is undergoing service or repair while the well is not producing, it shall be exempt from the emission control requirements of District Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
39. The inspection requirements of Section 5.4.1 through Section 5.4.7 of Rule 4401 shall not apply to components exclusively handling gas/vapor or liquid with a VOC content of ten percent by weight (10%) or less, as determined by the test methods in Section 6.3.4 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
40. Gas and liquid leaks are as defined in Section 3.20 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
41. An operator shall not operate a steam-enhanced crude oil production well unless the operator complies with either of the following requirements: The steam-enhanced crude oil production well vent is closed and the front line production equipment downstream of the wells that carry produced fluids (crude oil or mixture of crude oil and water) is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401, the well vent may be temporarily opened during periods of attended service or repair of the well provided such activity is done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere, or the steam-enhanced crude oil production well vent is open and the well vent is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
42. An operator shall be in violation of this rule if any District inspection demonstrates or if any operator inspection conducted pursuant to Section 5.4 of Rule 4401 demonstrates the existence of an open-ended line or a valve located at the end of the line that is not sealed with a blind flange, plug, cap, or a second closed valve that is not closed at all times, except during attended operations as defined by Section 5.2.2.1 of Rule 4401 requiring process fluid flow through the open-ended lines, a component with a major liquid leak, or a component with a gas leak greater than 50,000 ppmv. [District Rule 4401] Federally Enforceable Through Title V Permit
43. An operator shall be in violation of this rule if any District inspection demonstrates or if any operator inspection conducted pursuant to Section 5.4 of Rule 4401 demonstrates the existence of any combination of components with minor liquid leaks, minor gas leaks, or a gas leaks greater than 10,000 ppmv up to 50,000 ppmv that totals more than number of leaks allowed by Table 2 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
44. An operator shall not use any component with a leak as defined in Section 3.0 of Rule 4401, or that is found to be in violation of the provisions of Section 5.2.2 of Rule 4401. However, components that were found leaking may be used provided such leaking components have been identified with a tag for repair, are repaired, or awaiting re-inspection after being repaired within the applicable time frame specified in Section 5.5 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
45. 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 with minimal spillage of material and VOC emissions to the atmosphere. [District Rule 4401] Federally Enforceable Through Title V Permit
46. An operator shall comply with the requirements of Section 6.7 of Rule 4401 if there is any change in the description of major components or critical components. [District Rule 4401] Federally Enforceable Through Title V Permit
47. Except for pipes and unsafe-to-monitor components, an operator shall inspect all other components pursuant to the requirements of Section 6.3.3 of Rule 4401 at least once every year. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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48. An operator shall visually inspect all pipes at least once every year. Any visual inspection of pipes that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected within 24 hours after detecting the leak. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
49. In addition to the inspections required by Section 5.4.1 of Rule 4401, an operator shall inspect for leaks all accessible operating pumps, compressors, and PRDs in service as follows: An operator shall audio-visually (by hearing and by sight) inspect for leaks all accessible operating pumps, compressors, and PRDs in service at least once each calendar week. Any audio-visual inspection of an accessible operating pump, compressor, and PRD performed by an operator that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected not later than 24 hours after conducting the audio-visual inspection. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
50. In addition to the inspections required by Sections 5.4.1, 5.4.2 and 5.4.3 of Rule 4401, operator shall perform the following: initially inspect a PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the discovery of the release, re-inspect the PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the initial inspection, inspect all new, replaced, or repaired fittings, flanges, and threaded connections within 72 hours of placing the component in service. Except for PRDs subject to the requirements of Section 5.4.4.1 of Rule 4401, an operator shall inspect a component that has been repaired or replaced not later than 15 calendar days after the component was repaired or replaced. [District Rule 4401] Federally Enforceable Through Title V Permit
51. An operator shall inspect all unsafe-to-monitor components during each turnaround. [District Rule 4401] Federally Enforceable Through Title V Permit
52. District inspection in no way fulfills any of the mandatory inspection requirements that are placed upon operators and cannot be used or counted as an inspection required of an operator. [District Rule 4401] Federally Enforceable Through Title V Permit
53. An operator shall affix a readily visible weatherproof tag to a leaking component upon detection of the leak and shall include the following information on the tag: date and time of leak detection, date and time of leak measurement, for a gaseous leak, the leak concentration in ppmv, for a liquid leak, whether it is a major liquid leak or a minor liquid leak, whether the component is an essential component, an unsafe-to monitor component, or a critical component. [District Rule 4401] Federally Enforceable Through Title V Permit
54. An operator shall keep the tag affixed to the component until an operator has met all of the following conditions: repaired or replaced the leaking component, re-inspected the component using the test method in Section 6.3.3, and the component is found to be in compliance with the requirements of this rule. [District Rule 4401] Federally Enforceable Through Title V Permit
55. An operator shall minimize a component leak in order to stop or reduce leakage to the atmosphere immediately to the extent possible, but not later than one (1) hour after detection of the leak. [District Rule 4401] Federally Enforceable Through Title V Permit
56. Except for leaking critical components or leaking essential components subject to the requirements of Section 5.5.7 of Rule 4401, if an operator has minimized a leak but the leak still exceeds the applicable leak limits as defined in Section 3.0 of Rule 4401, an operator shall comply with at least one of the following requirements as soon as practicable but not later than the time period specified in Table 3 of Rule 4401: Repair or replace the leaking component; or vent the leaking component to a VOC collection and control system as defined in Section 3.0 of Rule 4401, or remove the leaking component from operation. [District Rule 4401] Federally Enforceable Through Title V Permit
57. The repair period in calendar days shall not exceed 14 days for minor gas leaks, 5 days for major gas leaks less than or equal to 50,000 ppmv, 2 days for gas leak greater than 50,000 ppmv, 3 days for minor liquid leaks, 2 days for major liquid leaks. [District Rule 4401] Federally Enforceable Through Title V Permit
58. The leak rate measured after leak minimization has been performed shall be the leak rate used to determine the applicable repair period specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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59. The time of the initial leak detection shall be the start of the repair period specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
60. If the leaking component is an essential component or a critical component that cannot be immediately shut down for repairs, and if the leak has been minimized but the leak still exceeds the applicable leak standard of this rule, the operator shall repair or replace the essential component or critical component 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 4401] Federally Enforceable Through Title V Permit
61. The operator of any steam-enhanced crude oil production well shall maintain records of the date and well identification where steam injection or well stimulation occurs. [District Rule 4401] Federally Enforceable Through Title V Permit
62. An operator of any steam-enhanced crude oil production well shall keep source test records which demonstrate compliance with the control efficiency requirements of the VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
63. Operator of any steam-enhanced crude oil production well shall keep an inspection log maintained pursuant to Section 6.4 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
64. 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, instrument 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 shall be maintained. [District Rule 4401] Federally Enforceable Through Title V Permit
65. An operator shall maintain copies at the facility of the training records of the training program operated pursuant to Section 6.5 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
66. Operator shall keep a copy of the APCO-approved Operator Management Plan at the facility. [District Rule 4401] Federally Enforceable Through Title V Permit
67. Operator shall keep a list of all gauge tanks, as defined in Section 3.17 of Rule 4401. The list shall contain the size, identification number, the location of each gauge tank and specify whether the gauge tank is upstream of all front line production equipment. [District Rule 4401] Federally Enforceable Through Title V Permit
68. The results of gauge tank TVP testing conducted pursuant to Section 6.2.3 shall be submitted to the APCO within 60 days after the completion of the testing. [District Rule 4401] Federally Enforceable Through Title V Permit
69. An operator that discovers that a PRD has released shall record the date that the release was discovered, and the identity and location of the PRD that released. An operator shall submit such information recorded during the calendar year to the APCO no later than 60 days after the end of the calendar year. [District Rule 4401] Federally Enforceable Through Title V Permit
70. An operator shall source test annually all vapor collection and control systems used to control emissions from steam-enhanced crude oil production well vents to determine the control efficiency of the device(s) used for destruction or removal of VOC. Compliance testing shall be performed annually by source testers certified by ARB. Testing shall be performed during June, July, August, or September of each year if the system's control efficiency is dependent upon ambient air temperature. A process system as defined in Section 3.30 of Rule 4401 is not subject to compliance source testing requirements. [District Rule 4401] Federally Enforceable Through Title V Permit
71. If approved by EPA, ARB, and the APCO, an operator need not comply with the annual testing requirement of Section 6.2.1 if all uncondensed VOC emissions collected by a vapor collection are controlled by an internal combustion engine subject to Rule 4702, a combustion device subject to Rule 4320, 4307 or 4308, a flare subject to Rule 4311. [District Rule 4401] Federally Enforceable Through Title V Permit

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72. An operator shall comply with the following requirements for each gauge tank, as defined in Section 3.17 of Rule 4401: Conduct periodic TVP testing of each gauge tank at least once every 24 months during summer (July - September), and whenever there is a change in the source or type of produced fluid in the gauge tank. The TVP testing shall be conducted at the actual storage temperature of the produced fluid in the gauge tank using the applicable TVP test method specified in Section 6.4 of Rule 4623 (Storage of Organic Liquids). The operator shall submit the TVP testing results to the APCO as specified in Section 6.1.9 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
73. The control efficiency of any VOC control device, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case EPA Method 25a may be used. EPA Method 18 may be used in lieu of EPA Method 25 or EPA Method 25a provided the identity and approximate concentrations of the analytes/compounds in the sample gas stream are known before analysis with the gas chromatograph and the gas chromatograph is calibrated for each of those known analyte/compound to ensure that the VOC concentrations are neither under- or over-reported. [District Rule 4401] Federally Enforceable Through Title V Permit
74. VOC content shall be analyzed by using the latest revision of ASTM Method E168, E169, or E260 as applicable. Analysis of halogenated exempt compounds shall be performed by using ARB Method 432. [District Rule 4401] Federally Enforceable Through Title V Permit
75. Leak inspection, other than audio-visual, and measurements of gaseous leak concentrations shall be conducted according to 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 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. Where safety is a concern, such as measuring leaks from compressor seals or pump seals when the shaft is rotating, a person shall measure leaks by placing the instrument probe inlet at a distance of one (1) centimeter or less from the surface of the component interface. [District Rule 4401] Federally Enforceable Through Title V Permit
76. The VOC content by weight percent (wt.%) shall be determined using American Society of Testing and Materials (ASTM) D1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 or the latest revision of ASTM Method E168, E169 or E260 for liquids. [District Rule 4401] Federally Enforceable Through Title V Permit
77. Operator shall maintain an inspection log in which an operator records, at a minimum, all of the following information for each inspection performed: The total number of components inspected, total number and percentage of leaking components found by component type, location, type, and name or description of each leaking component and description of any unit where the leaking component is found, date of leak detection and the method of leak detection. For gaseous leaks, the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak. the date of repair, replacement, or removal from operation of leaking components, identify and location of essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier, methods used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier, the date of re-inspection and the leak concentration in ppmv after the component is repaired or is replaced, the inspector's name, business mailing address, and business telephone number, date and signature of the facility operator responsible for the inspection and repair program certifying the accuracy of the information recorded in the log. [District Rule 4401] Federally Enforceable Through Title V Permit
78. Permittee shall establish and implement an employee training program for inspecting and repairing components and recordkeeping procedures, as necessary. [District Rule 4401] Federally Enforceable Through Title V Permit
79. In accordance with the approved Operator Management Plan (OMP), permittee shall meet all applicable operating, leak standards, inspection and re-inspection, leak repair, record keeping, and notification requirements of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit

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80. By January 30 of each year, permittee shall submit to the APCO for approval, in writing, an annual report indicating any changes to the existing, approved OMP. [District Rule 4401] Federally Enforceable Through Title V Permit
81. The crude oil production from wells associated with this permit unit shall not lie within 1000 feet of an air injection well used for in-situ combustion. [District Rule 4407] Federally Enforceable Through Title V Permit
82. 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. 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 4801 and 2520] Federally Enforceable Through Title V Permit
83. The requirements of SJVUAPCD Rule 4407 (Adopted 5/19/94) and SJVUAPCD Rule 4801 (Adopted 12/17/92) do not apply to the well vents. For Rule 4801 applicability, well vent emissions are fugitive emissions not considered to come from a point source. 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*

PERMIT UNIT: S-1372-127-26

EXPIRATION DATE: 05/31/2021

SECTION: 06 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:

62.5 MMBTU/HR NATURAL GAS/TEOR GAS-FIRED STEAM GENERATOR #43 EQUIPPED WITH A NORTH AMERICAN MODEL MAGNA-FLAME G-LE LOW NOX BURNER, FGR, O2 CONTROLLER, AND EXHAUST GAS SOX SCRUBBER W/ESP SHARED WITH S-1372-317 (MCKITTRICK FRONT LEASE)

PERMIT UNIT REQUIREMENTS

1. If continuous operation oxygen analyzer/controller is utilized, excess O2 shall be maintained between 0.5 and 4.0%. If not utilized, excess air shall be maintained at no less than 15%. [District Rule 2201] Federally Enforceable Through Title V Permit
2. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of gas combusted in the unit shall be installed, utilized and maintained for each fuel line. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
3. Exhaust from unit shall be directed only to SO2 scrubber/wet ESP authorized herein except when burning PUC quality natural gas exclusively. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Scrubber/wet ESP shall be in operation when combusting TEOR gas. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Vapors from TEOR operation, permit # S-1372-100 may be incinerated in this steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Except during start-up and shutdown, emissions from the steam generator shall not exceed any of the following limits: 9 ppmvd NOx @ 3% O2 or 0.011 lb-NOx/MMBtu, 0.324 lb-SOx/MMBtu, 0.008 lb-PM10/MMBtu, 50 ppmvd CO @ 3% O2 or 0.0364 lb-CO/MMBtu, or 0.003 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
7. During start-up and shutdown, emissions from the steam generator shall not exceed any of the following limits: 15 ppmvd NOx @ 3% O2 or 0.018 lb-NOx/MMBtu, 0.324 lb-SOx/MMBtu, 0.008 lb-PM10/MMBtu, 50 ppmvd CO @ 3% O2 or 0.0364 lb-CO/MMBtu, or 0.003 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
8. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rule 4306 and 4320] Federally Enforceable Through Title V Permit
9. Duration of startup and shutdown shall not exceed 2 hours each per occurrence and, combined, shall not exceed 4 hours per day. During startup or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of startup and shutdown periods [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
10. Daily records of start-up and shutdown durations and number of occurrences of each shall be maintained. [District Rules 2201, 4305, 4306, and 4320] 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. Total sulfur oxide (SOx as SO2) emissions shall not exceed 1,075.2 lb/day from steam generators S-1372-1, '2, '4, '127, '317, and flare '100. [District Rule 2201] Federally Enforceable Through Title V Permit
12. All vapor recovery gas burned in this device shall first be treated by the scrubber/wet ESP so at least 95% by weight of the sulfur is removed. [District Rules 2201, 4301, 4320, 4406, and 4801] Federally Enforceable Through Title V Permit
13. Compliance with the 95% by weight sulfur removal efficiency shall be conducted at least once every twelve months. [District Rule 4320] Federally Enforceable Through Title V Permit
14. The SOx emission control system efficiency shall be determined using the following equation: Percent Control Efficiency = $[(\text{CSO}_2, \text{inlet} - \text{CSO}_2, \text{outlet}) / \text{CSO}_2, \text{inlet}] \times 100$, where "CSO₂, inlet" is equal to the concentration of SOx (expressed as SO₂) at the inlet side of the SOx emission control system (in lb/dscf) and "CSO₂, outlet" is equal to the concentration of SOx (expressed as SO₂) at the outlet side of the SOx emission control system (in lb/dscf). [District Rule 4320] Federally Enforceable Through Title V Permit
15. The total gas fired in this unit, on a monthly average, shall be less than 50% PUC quality natural gas, by volume. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet and no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet. PUC quality natural gas also means high methane gas of at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
16. The permittee shall maintain monthly records of the volume of PUC quality natural gas and the total gas fired in this unit. Permittee shall keep monthly records of the percentage by volume of PUC quality gas fired and indicate if the volume of PUC quality gas fired is less than 50%. [District Rule 4320] Federally Enforceable Through Title V Permit
17. Scrubber/wet ESP control efficiency shall not be less than 95% by weight sulfur compounds. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Scrubber liquor pH shall be maintained within the range demonstrated to achieve compliance with SO₂ emissions limit and control efficiency performance, and shall be continuously monitored. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Scrubber mist eliminator shall be properly cleaned and maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
20. The wet ESP's secondary DC voltage shall be monitored weekly to ensure it is operating between 35 to 50KV [District Rule 2201] Federally Enforceable Through Title V Permit
21. Scrubber recirculation liquor liquid to gas ratio shall be maintained at no less than that demonstrated to achieve compliance during source testing. [District Rule 2201] Federally Enforceable Through Title V Permit
22. When any unit connected to scrubber/wet ESP is burning TEOR gas, scrubber/wet ESP shall be operating and permittee shall demonstrate compliance with sulfur oxide emissions limit by stack source testing within 60 days of initial scrubbing date and annually thereafter unless no TEOR gas has been burned since the last scrubber performance source test. Sulfur removal efficiency of scrubber/wet ESP shall be demonstrated during initial stack source test and calculated with subsequent tests. Ongoing compliance with sulfur oxide emissions limit shall be by calculation using the scrubber liquid pH, the demonstrated sulfur removal efficiency, and the fuel gas sulfur content. Fuel gas sulfur content shall be obtained by sample analysis at least quarterly. [District Rule 2201] Federally Enforceable Through Title V Permit
23. When unit is operated without scrubber/wet ESP, permittee shall demonstrate compliance with the sulfur oxide emissions limit by analysis of the fuel gas sulfur content within 60 days of initiating operation without scrubber. Analyses, as approved by the APCO, provided by the gas supplier may be used to satisfy this requirement. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

24. 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 Methods 6, 6B, 8, or ARB 100. When operating unscrubbed, a grab sample analysis by double GC performed in the laboratory and EPA Method 19 may be used to calculate SO_x emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every 36 months unless testing is required by scrubber operational mode change as noted above. Annual source testing shall resume if any test fails to show compliance. [District Rule 2201] Federally Enforceable Through Title V Permit
25. Exhaust stack shall be equipped with adequate provisions facilitating the collection of gas samples consistent with EPA Test Methods. [District Rule 1081] Federally Enforceable Through Title V Permit
26. 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
27. 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
28. 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
29. 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
30. The portable analyzer shall be calibrated prior to each use with a two-point calibration method (zero and span). Calibration shall be performed with certified calibration gases. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
31. Source testing to measure NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
32. 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
33. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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34. 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
35. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the Permit to Operate, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
36. 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
37. 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
38. 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
39. 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
40. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit
41. Stack gas velocities shall be determined using EPA Method 2. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
42. 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
43. In lieu of the annual source testing requirements of Rule 4320, compliance with the applicable emission limits may be demonstrated by submittal of annual emissions test results to the District from a unit or units that represents a group of units, provided that all of the conditions in Section 6.3.2 are met and documented. [District Rule 4320] Federally Enforceable Through Title V Permit
44. Annual test results submitted to the District from unit(s) representing a group of units may be used to demonstrate compliance with NO_x and CO limits 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 or CO emissions 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, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
45. The following conditions must be met for representative unit(s) to be used to demonstrate compliance for NO_x and CO 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, 4306, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
46. All units in a group for which representative units are source tested to demonstrate compliance for NO_x and CO limits of this permit 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 the each unit of the group including all preventative and corrective maintenance work done. [District Rules 4305, 6.3.2, 4306, 6.3.2, 4320, and 4351, 6.3.2] 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.

47. All units in a group for which representative units are source tested to demonstrate compliance for NO_x and CO limits 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, 4306, 6.3.2, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
48. The number of representative units source tested to demonstrate compliance for NO_x and CO limits 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, 4306, 6.3.2, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
49. 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 quarterly. If a quarterly fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
50. 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
51. 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 3246, D 4084, or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
52. 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 third party fuel supplier or determined by: ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.3.2; 4305, 6.2; 4306, 6.2; and 4320, 6.2] Federally Enforceable Through Title V Permit
53. 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 and record specific type of noncertified fuel used. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
54. Permittee shall maintain records of the wet ESP's secondary DC voltage and shall be made readily available for District inspection upon request [District Rule 2201] Federally Enforceable Through Title V Permit
55. Permittee shall maintain records of volume of fuel gas burned and TEOR gas incinerated, fuel gas and TEOR gas sulfur content, and such records shall be retained on site for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 1070 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
56. Sulfur compound emissions shall not exceed 0.11 lb of sulfur per million BTU. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas; multiplying the reported sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by a combination of source testing for sulfur compounds and fuel analysis. [District Rule 4406]
57. 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. 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 4801 and 2520, 9.4.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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58. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of 40 CFR 60, Subpart Dc (except 60.44c(g) and (h) and 60.48c). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
59. This unit has not been used to produce electricity for sale in 1985 or on or after November 15, 1990. Therefore, the requirements of 40 CFR 72.6(b) do not apply to this source. A permit shield is granted from this requirement. [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-1372-317-16

EXPIRATION DATE: 05/31/2021

SECTION: 06 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:

67.5 MMBTU/HR NATURAL GAS/TEOR GAS-FIRED STEAM GENERATOR EQUIPPED WITH A NORTH AMERICAN MODEL MAGNA-FLAME G-LE LOW NOX BURNER, FGR AND EXHAUST GAS SOX SCRUBBER W/ESP SHARED WITH S-1372-127 (MCKITTRICK FRONT LEASE)

PERMIT UNIT REQUIREMENTS

1. Unit shall be fired only on PUC quality natural gas or TEOR waste gas. [District Rule 2201] Federally Enforceable Through Title V Permit
2. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of gas combusted in the unit shall be installed, utilized and maintained for each fuel line. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
3. Vapors from TEOR operation, permit # S-1372-100 may be incinerated in this steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Exhaust from unit shall be directed only to SO2 scrubber/wet ESP listed on S-1372-127 except when burning PUC quality natural gas exclusively. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Scrubber/wet ESP listed on S-1372-127 shall be in operation when combusting TEOR gas. [District Rule 2201] Federally Enforceable Through Title V Permit
6. All wells producing from strata steamed by this unit shall be connected to a District-approved emissions control system, have District-approved closed casing vents or be District-approved uncontrolled cyclic wells. [District Rule 4401] Federally Enforceable Through Title V Permit
7. This steam generator shall be exclusively fired on PUC quality natural gas when steam generators S-1372-13, 16, and 24 are gas fired and incinerating TEOR waste gas. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rule 4306 and 4320] Federally Enforceable Through Title V Permit
9. Duration of startup and shutdown shall not exceed 2 hours each per occurrence and, combined, shall not exceed 4 hours per day. During startup or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of startup and shutdown periods. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
10. Except during start-up and shutdown, emissions from the steam generator shall not exceed any of the following limits: 9 ppmvd NOX @ 3% O2 or 0.011 lb-NOX/MMBtu, 0.324 lb-SOX/MMBtu, 0.008 lb-PM10/MMBtu, 50 ppmvd CO @ 3% O2 or 0.0364 lb-CO/MMBtu, or 0.039 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] 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. During start-up and shutdown, emissions from the steam generator shall not exceed any of the following limits: 15 ppmvd NOX @ 3% O2 or 0.018 lb-NOX/MMBtu, 0.324 lb-SOX/MMBtu, 0.008 lb-PM10/MMBtu, 50 ppmvd CO @ 3% O2 or 0.0364 lb-CO/MMBtu, or 0.039 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
12. Total sulfur oxide (SOx as SO2) emissions shall not exceed 1,075.2 lb/day from steam generators S-1372-1, '2, '4, '127, '317, and flare '100. [District Rule 2201] Federally Enforceable Through Title V Permit
13. All vapor recovery gas burned in this device shall first be treated by the scrubber/wet ESP so at least 95% by weight of the sulfur is removed. [District Rules 2201, 4301, 4320, 4406, and 4801] Federally Enforceable Through Title V Permit
14. Compliance with the 95% by weight sulfur removal efficiency shall be conducted at least once every twelve months. [District Rule 4320] Federally Enforceable Through Title V Permit
15. The SOx emission control system efficiency shall be determined using the following equation: Percent Control Efficiency = $[(\text{CSO}_2, \text{inlet} - \text{CSO}_2, \text{outlet}) / \text{CSO}_2, \text{inlet}] \times 100$, where "CSO2, inlet" is equal to the concentration of SOx (expressed as SO2) at the inlet side of the SOx emission control system (in lb/dscf) and "CSO2, outlet" is equal to the concentration of SOx (expressed as SO2) at the outlet side of the SOx emission control system (in lb/dscf). [District Rule 4320] Federally Enforceable Through Title V Permit
16. The total gas fired in this unit, on a monthly average, shall be less than 50% PUC quality natural gas, by volume. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet and no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet. PUC quality natural gas also means high methane gas of at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
17. The permittee shall maintain monthly records of the volume of PUC quality natural gas and the total gas fired in this unit. Permittee shall keep monthly records of the percentage by volume of PUC quality gas fired and indicate if the volume of PUC quality gas fired is less than 50%. [District Rule 4320] Federally Enforceable Through Title V Permit
18. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Methods 6, 6B, 8, or ARB 100. When operating unscrubbed, a grab sample analysis by double GC performed in the laboratory and EPA Method 19 may be used to calculate SOx emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every 36 months unless testing is required by scrubber operational mode change as noted above. Annual source testing shall resume if any test fails to show compliance. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Sulfur compound (SO2) emission limit compliance shall be demonstrated by fuel gas sulfur analysis performed 60 days prior to permit anniversary date. [District Rule 1081] Federally Enforceable Through Title V Permit
20. Compliance with casing gas sulfur compound emission limits shall be demonstrated by record keeping of TEOR gas flowrate and H2S concentration. [District Rule 1070] Federally Enforceable Through Title V Permit
21. The wet ESP's secondary DC voltage shall be monitored weekly to ensure it is operating between 35 to 50KV [District Rule 2201] Federally Enforceable Through Title V Permit
22. Permittee shall maintain daily records of volume of natural gas burned and TEOR waste gas incinerated. [District Rule 2201] Federally Enforceable Through Title V Permit
23. Permittee shall measure and record, at least monthly, the sulfur content and BTU content of the TEOR waste gas incinerated in this unit. [District Rule 4406, 4.0] Federally Enforceable Through Title V Permit
24. Permittee shall measure and record the natural gas sulfur content and BTU content at the time of NOx testing, except for natural gas purchased from a PUC regulated utility. [District Rule 4406, 4.0] Federally Enforceable Through Title V Permit
25. Exhaust stack shall be equipped with adequate provisions facilitating the collection of gas samples consistent with EPA Test Methods. [District Rule 1081] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

26. 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
27. 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
28. 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
29. 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
30. The portable analyzer shall be calibrated prior to each use with a two-point calibration method (zero and span). Calibration shall be performed with certified calibration gases. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
31. Source testing to measure NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
32. 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
33. 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
34. 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
35. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the Permit to Operate, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306, and 4320] 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.

36. 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
37. 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] Federally Enforceable Through Title V Permit
38. 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
39. 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
40. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit
41. Stack gas velocities shall be determined using EPA Method 2. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
42. 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
43. In lieu of the annual source testing requirements of Rule 4320, compliance with the applicable emission limits may be demonstrated by submittal of annual emissions test results to the District from a unit or units that represents a group of units, provided that all of the conditions in Section 6.3.2 are met and documented. [District Rule 4320] Federally Enforceable Through Title V Permit
44. Annual test results submitted to the District from unit(s) representing a group of units may be used to demonstrate compliance with NOx and CO limits 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 NOx or CO emissions 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, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
45. The following conditions must be met for representative unit(s) to be used to demonstrate compliance for NOx and CO 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, 4306, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
46. All units in a group for which representative units are source tested to demonstrate compliance for NOx and CO limits of this permit 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 the each unit of the group including all preventative and corrective maintenance work done. [District Rules 4305, 6.3.2, 4306, 6.3.2, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
47. All units in a group for which representative units are source tested to demonstrate compliance for NOx and CO limits 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, 4306, 6.3.2, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
48. The number of representative units source tested to demonstrate compliance for NOx and CO limits 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, 4306, 6.3.2, 4320, and 4351, 6.3.2] 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.

49. 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 quarterly. If a quarterly fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
50. 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
51. 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 3246, D 4084, or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
52. 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 third party fuel supplier or determined by: ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.3.2; 4305, 6.2; 4306, 6.2; and 4320, 6.2] Federally Enforceable Through Title V Permit
53. 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 and record specific type of noncertified fuel used. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
54. Permittee shall maintain records of the wet ESP's secondary DC voltage and shall be made readily available for District inspection upon request [District Rule 2201] Federally Enforceable Through Title V Permit
55. Permittee shall maintain records of volume of fuel gas burned and TEOR gas incinerated, fuel gas and TEOR gas sulfur content, and such records shall be retained on site for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 1070 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
56. Sulfur compound emissions shall not exceed 0.11 lb of sulfur per million BTU. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas; multiplying the reported sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by a combination of source testing for sulfur compounds and fuel analysis. [District Rule 4406]
57. 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. 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 4801 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
58. This unit commenced construction, modification, or reconstruction prior to June 19, 1984. This unit has not been used to produce electricity for sale in 1985 or on or after November 15, 1990. Therefore, the requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

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

Attachment II
Location Map



Distance to lease boundaries: North: 3074', South: 6118' East: 1214', West: 2141'
No known business or residence within 2000'.

Attachment III Source Test Data

'-16

Date	CO ppmv @ 3% O2
5/10/06	1.7
5/10/09	3.9
12/29/10	0
12/29/13	0
12/29/16	0

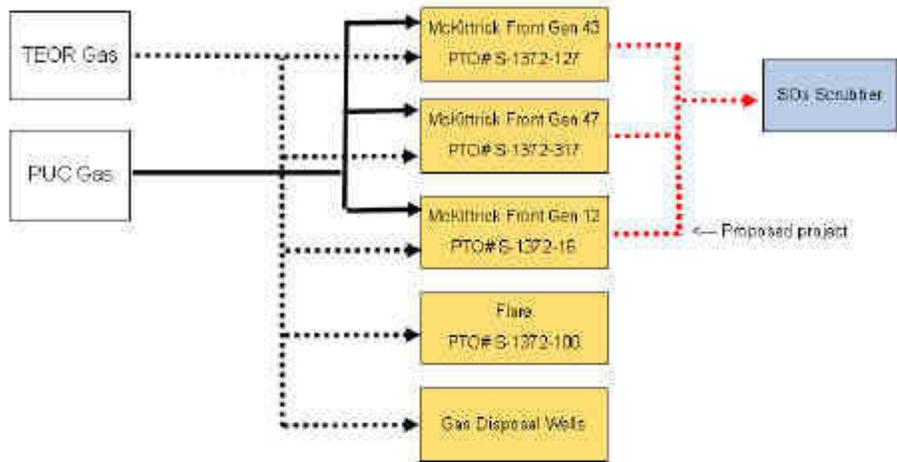
'-127

Date	CO ppmv @ 3% O2
6/25/13	0
7/26/10	0
7/12/11	0
12/18/09	0
3/29/06	0

'-317

Date	CO ppmv @ 3% O2	SOx (lb/MMBtu)
6/30/09	0	0.0024
6/30/11	0.05	0.007
6/30/13	0	0.002
6/30/15	0	0.05
6/30/16		0.001
6/30/17		0.1729
6/30/18		0.0345
11/20/18	0	
6/30/19		0.1185

Attachment IV Process Diagram



Attachment V
Projected and Baseline Actual Emission Data

Federal Major Modification Assessment

S-1372-16

Pollutant	PE1 (lb/year)	Baseline Actual Emissions (lb/year)	Baseline Potential Emissions (lb/year)	Unused Baseline Capacity (lb/year)	Projected Actual Emissions (lb/year)	Emissions Increase (lb/year)
NOx	4,380	735	3,473	2,737	3,942	469
SOx	33,763	-	-	-	30,386	30,386
PM10	7,665	1,623	7,665	6,042	6,899	(767)
VOC	657	139	657	518	591	(66)

S-1372-127

Pollutant	PE1 (lb/year)	Baseline Actual Emissions (lb/year)	Baseline Potential Emissions (lb/year)	Unused Baseline Capacity (lb/year)	Projected Actual Emissions (lb/year)	Emissions Increase (lb/year)
NOx	6,023	4,206	5,460	1,255	5,420	(40)
SOx	51,319	9,488	12,319	2,830	46,187	33,868
PM10	4,380	3,374	4,380	1,006	3,942	(438)
VOC	1,643	1,265	1,643	377	1,478	(164)

S-1372-317

Pollutant	PE1 (lb/year)	Baseline Actual Emissions (lb/year)	Baseline Potential Emissions (lb/year)	Unused Baseline Capacity (lb/year)	Projected Actual Emissions (lb/year)	Emissions Increase (lb/year)
NOx	6,504	4,495	6,280	1,785	5,854	(426)
SOx	51,319	9,523	13,304	3,781	46,187	32,883
PM10	4,730	3,386	4,730	1,344	4,257	(473)
VOC	1,774	1,270	1,774	504	1,597	(177)

S-1372-16 Assumptions:

62.5 MMBtu/hr
 8760 hours
 547,500 Potential MMBtu/yr
 0.79 Actual source test/PE
 115,945 Actual MMBtu/yr

S-1372-127 Assumptions:

62.5 MMBtu/hr
 8760 hours
 547,500 Potential MMBtu/yr
 0.91 Actual source test/PE
 421,706 Actual MMBtu/yr

S-1372-317 Assumptions:

67.5 MMBtu/hr
 8760 hours
 591,300 Potential MMBtu/yr
 0.97 Actual source test/PE
 423,241 Actual MMBtu/yr

Fuel Use Data:

Unit	PUC MCF/Day	PUC BTU Factor	TEOR MCF/Day	TEOR BTU Factor	Total MMBtu/Day
-16	308	1.030	-	-	318
-127	589	1.030	998	0.550	1,155
-317	540	1.030	1,096	0.550	1,160

*Fuel Use Data is last twenty four months averaged daily: August 13, 2018 to August 13, 2020

Sentinel Peak Resources: Project S-1203797

Equipment Utilization

Equipment	Gen 3	Gen 4	Gen 5	Gen 12	Gen 16	Gen 20	MWSS TEOR	Cymric Flare	Units
APCD PTO	S-1372-1	S-1372-4	S-1372-2	S-1372-16	S-1372-13	S-1372-24	S-1372-76	S-1372-100	
Jan-19	-	-	-	18,056	2,980	1,459	-	1,435	MCF
Feb-19	-	-	-	11,532	4,488	20,607	-	617	MCF
Mar-19	-	-	-	10,447	6,707	368	-	4,881	MCF
Apr-19	-	-	-	15,668	3	756	-	1,562	MCF
May-19	-	-	-	5,498	574	253	-	6,406	MCF
Jun-19	-	-	-	11,030	-	2,230	-	1,536	MCF
Jul-19	-	-	-	2,797	-	-	-	5,827	MCF
Aug-19	-	-	-	4,162	-	3	-	3,032	MCF
Sep-19	-	-	-	5,611	14,438	15,850	-	777	MCF
Oct-19	-	-	-	12,913	36,587	14,467	-	980	MCF
Nov-19	-	-	-	10,756	35,513	10,503	-	3,836	MCF
Dec-19	-	-	-	7,701	29,091	11,812	-	1,436	MCF
Jan-20	-	-	-	1,260	9,422	29,912	-	3,391	MCF
Feb-20	-	-	-	1,652	7,139	35,012	-	3,911	MCF
Mar-20	-	-	-	306	12,103	29,368	-	1,138	MCF
Apr-20	-	-	-	-	9,903	388	-	2,968	MCF
May-20	-	-	-	-	-	-	-	5,133	MCF
Jun-20	-	-	-	8	-	-	-	635	MCF
Jul-20	-	-	-	-	8,238	-	-	313	MCF
Aug-20	-	-	-	-	2,035	-	-	954	MCF
Sep-20	-	-	-	-	8,213	-	-	1,730	MCF
Oct-20	-	-	-	-	6,741	-	-	1,045	MCF
Nov-20	-	-	-	3,830	4,796	-	-	6,301	MCF
Dec-20	-	-	-	2,980	3,682	-	-	4,821	MCF
Annual Average MCF	-	-	-	63,104	101,327	86,494	-	32,332	MCF
Annual Average MMBTU	-	-	-	64,997	104,366	89,089	-	33,302	MMBTU

Sentinel Peak Resources: Project S-1203797

Equipment Utilization

Equipment	Gen 3	Gen 4	Gen 5	Gen 12	Gen 16	Gen 20	Gen 43 PUC	Gen 43 TEOR	Gen 43 Total	Gen 47 PUC	Gen 47 TEOR	Gen 47 Total	MWSS TEOR	Cymric Flare	Units
APCD PTO	S-1372-1	S-1372-4	S-1372-2	S-1372-16	S-1372-13	S-1372-24	S-1372-127	S-1372-127	S-1372-127	S-1372-317	S-1372-317	S-1372-317	S-1372-76	S-1372-100	
Jan-19	-	-	-	18,056	2,900	1,459	23,472	14,674			18,325	24,092	-	-	1,435
Feb-19	-	-	-	11,532	4,488	20,607	6,985	8,536			15,268	20,563	-	-	617
Mar-19	-	-	-	10,447	6,707	368	15,591	27,742			422	-	-	-	4,881
Apr-19	-	-	-	15,668	3	756	18,313	22,174			14,742	23,657	-	-	1,562
May-19	-	-	-	5,498	574	253	23,453	32,770			13,999	28,017	-	-	6,406
Jun-19	-	-	-	11,030	-	2,230	19,675	28,658			19,477	36,760	-	-	1,536
Jul-19	-	-	-	2,797	-	-	19,212	17,607			20,246	22,554	-	-	5,827
Aug-19	-	-	-	4,162	-	3	12,469	27,163			10,492	26,108	-	-	3,032
Sep-19	-	-	-	5,611	14,438	15,850	18,060	32,518			16,936	38,739	-	-	777
Oct-19	-	-	-	12,913	36,587	14,467	19,235	35,238			17,611	39,868	-	-	980
Nov-19	-	-	-	10,756	35,513	10,503	20,199	32,983			20,082	39,312	-	-	3,836
Dec-19	-	-	-	7,701	29,091	11,812	21,758	37,250			21,355	42,461	-	-	1,436
Jan-20	-	-	-	1,260	9,422	29,912	18,949	31,840			19,578	39,522	-	-	3,391
Feb-20	-	-	-	1,652	7,139	35,012	17,972	39,254			13,892	33,195	-	-	3,911
Mar-20	-	-	-	306	12,103	29,368	16,927	44,337			16,932	45,839	-	-	1,138
Apr-20	-	-	-	-	9,903	388	13,641	35,576			12,847	37,834	-	-	2,968
May-20	-	-	-	-	-	-	15,294	43,369			15,543	43,864	-	-	5,133
Jun-20	-	-	-	8	-	-	16,721	43,020			15,790	56,913	-	-	635
Jul-20	-	-	-	-	8,238	-	17,684	41,302			16,693	44,936	-	-	313
Aug-20	-	-	-	-	2,035	-	17,085	47,518			16,968	46,805	-	-	954
Sep-20	-	-	-	-	8,213	-	16,213	46,936			16,201	35,822	-	-	1,730
Oct-20	-	-	-	-	6,741	-	20,289	41,339			18,672	38,539	-	-	1,045
Nov-20	-	-	-	3,830	4,796	-	12,424	25,057			11,900	17,375	-	-	6,301
Dec-20	-	-	-	2,980	3,682	-	9,604	16,307			7,042	10,203	-	-	4,821
Annual Average MCF	-	-	-	63,104	101,327	86,494	205,613	386,584			185,507	396,889	-	-	32,332
Annual Average MMBtu	-	-	-	64,997	104,366	89,089	211,781	212,621	424,402		191,072	218,289	409,361	-	33,302

Attachment VI
Emissions Profiles

Permit #: S 1372-16 -27 Issued: / /
 Implemented: / /
 Facility: SENTINEL PEAK RESOURCES CA LLC

Last Updated
 04/16/21 EDGEHILR

Use PTO emissions Equipment Prebaselined: Yes No

PM2.5/PM10 %		NOX	SOX	PM10	CO	VOC
PM2.5 (lb/Yr)						
Potential to Emit (lb/Yr):		4380	65700	7665	101477	657
Daily Emis. Limit (lb/Day):		27.0	180.0	21.0	27.8	1.8
Quarterly Net Emissions Change (lb/Qtr)	1:	0	7984	0	(11424)	0
	2:	0	7984	0	(11424)	0
	3:	0	7984	0	(11425)	0
	4:	0	7985	0	(11425)	0
Check if offsets are triggered but exemption applies		<input type="checkbox"/>				
Offset Ratio:						
Quarterly Offset Amounts (lb/Qtr)	1:					
	2:					
	3:					
	4:					
SLC ID (PTE):						
SLC ID (DEL):						

Facility SLC

Exit

File Actions Window

Permit #: S 1372-100 -38	Issued: //	Last Updated: 10/15/20	
	Implemented: //	EDGEHILR	
Facility: SENTINEL PEAK RESOURCES CA LLC		<input type="checkbox"/> Use PTO emissions	Equipment Prebaselined: <input type="checkbox"/> Yes <input type="checkbox"/> No

PM2.5/PM10 %		NOX	SOX	PM10	CO	VOC
PM2.5 (lb/Yr)						
Potential to Emit (lb/Yr):		0	0	0	0	87454
Daily Emis. Limit (lb/Day):		0.0	0.0	0.0	0.0	239.6
Quarterly Net Emissions Change (lb/Qtr)						
1:		0	0	0	0	0
2:		0	0	0	0	0
3:		0	0	0	0	0
4:		0	0	0	0	0
Check if offsets are triggered but exemption applies:		<input type="checkbox"/>				
Offset Ratio:						
Quarterly Offset Amounts (lb/Qtr)						
1:						
2:						
3:						
4:						
SLC ID (PTE):						
SLC ID (DEL):						

Facility SLC

Exit

Permit #: S 1372-127 -28 Issued: / /
 Implemented: / /
 Facility: **SENTINEL PEAK RESOURCES CA LLC**

Last Updated
 10/15/20 EDGEHILR

Use PTO emissions Equipment Prebaselined: Yes No

PM2.5/PM10 %					
PM2.5 (lb/Yr)					
	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	6662	0	4161	10147	1643
Daily Emis. Limit (lb/Day):	18.3	486.0	12.0	27.8	4.6
Quarterly Net Emissions Change (lb/Qtr)					
1:	0	0	0	(2445)	0
2:	0	0	0	(2446)	0
3:	0	0	0	(2446)	0
4:	0	0	0	(2446)	0

Check if offsets are triggered but exemption applies

Offset Ratio:					
Quarterly Offset Amounts (lb/Qtr)					
1:					
2:					
3:					
4:					
SLC ID (PTE):					
SLC ID (DEL):					

Facility SLC

Exit

File Actions Window

Permit #: S 1372-317 -18 Issued: //
 Implemented: //
 Facility: SENTINEL PEAK RESOURCES CA LLC

Last Updated
 05/04/21 EDGEHILR

Use PTO emissions Equipment Prebaselined: Yes No

PM2.5/PM10 %		NOX	SOX	PM10	CO	VOC
PM2.5 (lb/Yr)						
Potential to Emit (lb/Yr):		6403	65700	4745	10950	2306
Daily Emis. Limit (lb/Day):		19.8	180.0	13.0	30.0	6.3
Quarterly Net Emissions Change (lb/Qtr)	1:	0	(31472)	0	(2643)	0
	2:	0	(31472)	0	(2643)	0
	3:	0	(31472)	0	(2643)	0
	4:	0	(31473)	0	(2644)	0
Check if offsets are triggered but exemption applies		<input type="checkbox"/>				
Offset Ratio:						
Quarterly Offset Amounts (lb/Qtr)	1:					
	2:					
	3:					
	4:					
SLC ID (PTE):						
SLC ID (DEL):						

Facility SLC

Exit

Attachment VII
BACT Analysis

Best Available Control Technology (BACT) Guideline 1.2.1*

Last Update: 3/24/2014

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

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Gaseous fuel		
SO _x	Fired on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dscf; or use of a continuously operating SO ₂ scrubber and either achieve 95% by weight control of sulfur compounds or achieve an emission rate of 9 ppmvd SO ₂ @ 3% O ₂		
PM ₁₀	Fired on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dscf; or use of a continuously operating SO ₂ scrubber and either achieve 95% by weight control of sulfur compounds or achieve an emission rate of 9 ppmvd SO ₂ @ 3% O ₂		
NO _x	<ul style="list-style-type: none"> •Units rated 85 MMBtu/hr and fired solely on PUC quality natural gas: 6 ppmvd @ 3% O₂; or •Units firing on > or = 50% PUC quality natural gas; commercial propane; and/or LPG: 7 ppmvd @ 3% O₂; except units rated 85 MMBtu/hr and fired solely on PUC quality natural gas; or •Units firing on <50% PUC quality natural gas; commercial propane; and/or LPG: 9 ppmvd @ 3% O₂ 	5 ppmvd @ 3% O ₂	
CO	25 ppmvd @ 3% O ₂		

Top Down BACT Analysis for Steam Generator (S-1372-16, '-317)

For steam generator S-1372-16 BACT is required for NO_x and VOC.

Top-Down BACT Analysis for NO_x Emissions

a. Step 1 - Identify All Possible Control Technologies

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

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
NO _x	<ul style="list-style-type: none"> Units rated 85 MMBtu/hr and fired solely on PUC quality natural gas: 6 ppmvd @ 3% O₂; or Units firing on > 50% PUC quality natural gas, commercial propane, and/or LPG: 7 ppmvd @ 3% O₂, except units rated 85 MMBtu/hr and fired solely on PUC quality natural gas; or Units firing on < 50% PUC quality natural gas, commercial propane, and/or LPG: 9 ppmvd @ 3% O₂ 	5 ppmvd @ 3% O ₂	

Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

- 5 ppmvd @ 3% O₂ (Technologically Feasible)
- Units rated 85 MMBtu/hr and fired solely on PUC quality natural gas: 6 ppmvd @ 3% O₂ (Achieved in Practice) – not applicable to the subject steam generator as it is not 85 MMBtu/hr and not fired solely on PUC quality natural gas.
- Units firing on > 50% PUC quality natural gas, commercial propane, and/or LPG: 7 ppmvd @ 3% O₂, except units rated 85 MMBtu/hr and fired solely on PUC quality natural gas (Achieved in Practice) - not applicable to the subject steam generator as it not fired on > 50% PUC quality gas.

4. Units firing on < 50% PUC quality natural gas, commercial propane, and/or LPG: 9 ppmvd @ 3% O₂ (Achieved in Practice)

Step 4 - Cost Effectiveness Analysis

The applicant has proposed to meet the existing permit limit of 7 ppmv @ 3% O₂ which does not satisfy the Technologically feasible requirement of 5 ppmv @ 3%O₂; therefore a cost effective analysis is required.

Per an estimate provided by the applicant, the cost to install an ultra low NO_x burner capable of meeting 5 ppmv @ 3% O₂ is \$395,000. Please note that actual costs may be higher.

Equivalent Annual Control Equipment Cost calculation per APCD Policy APR 1305-9 Section X(A)(1). Assume $i = 10\%$ and $n = 10$ years.

$$A = P * ((i*(1 + i)^n) / ((1 + i)^n - 1))$$

$$A = \$395,000 * 0.1627$$

$$A = \$ 64,267/\text{yr}$$

The reduction in NO_x is from the Industrial Standard 7 ppmv NO_x @ 3% O₂, 0.008 lb NO_x/MMBtu) to 5 ppmv NO_x @ 3% O₂, 0.0062 lb NO_x/MMBtu.

$$(0.008 \text{ lb/MMBtu} - 0.0061 \text{ lb/MMBtu}) (62.5 \text{ MMBtu/hr})(8760 \text{ hr/yr})$$

$$= 1,040 \text{ lb NO}_x/\text{yr} (0.52 \text{ ton/yr})$$

$$\begin{aligned} \text{Cost effectiveness} &= (\$ 64,267/\text{yr})/(0.52 \text{ ton VOC/yr}) \\ &= \$ 123,590/\text{ton NO}_x \end{aligned}$$

This exceeds the cost effectiveness threshold for NO_x of \$ 24,500/ton. Therefore, an ultra-Low NO_x burner is not cost effective.

Step 5 - Select BACT

As demonstrated below, the NO_x emissions limit of 5 ppmvd @ 3% O₂ (Technologically Feasible) is not cost effective. The applicant has proposed to install a steam generator with a NO_x limit of 7 ppmvd @ 3% O₂; therefore, BACT for NO_x emissions is satisfied.

Top Down BACT Analysis for SOx Emissions (S-1372-16)

Step 1 - Identify all control technologies

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

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

Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

The achieved in practice requirement in the above table is the only alternative.

Step 4 - Cost Effectiveness Analysis

The applicant has proposed to the only alternative listed above; therefore a cost effective analysis is not required.

Step 5 - Select BACT

Use of a continuously operating SO₂ scrubber and either achieve 95% by weight control of sulfur compounds

Top Down BACT Analysis for VOC Emissions (S-1372-16 and '-317)

Step 1 - Identify all control technologies

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

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

Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Gaseous fuel

Step 4 - Cost Effectiveness Analysis

The applicant has proposed to the only alternative listed above; therefore a cost effective analysis is not required.

Step 5 - Select BACT

Gaseous fuel.

Attachment VIII
ERC Surplus Analysis

ERC Surplus Analysis

Facility Name: Sentinel Peak Resources California, LLC **Date:** April 26, 2021
Mailing Address: 1200 Discovery Drive, Ste 100 **Engineer:** Richard Edgehill
Bakersfield, CA 93309 **Lead Engineer:** Leonard Scandura
Contact Person: Jason Goklaney
Telephone: (661) 395-5574
ERC Certificate #: N-1553-1
ERC Surplus proj #: N-1211613

Proposal

Sentinel Peak Resources California, LLC is proposing the use of the following Emission Reduction Credit (ERC) certificate to meet the federal offset requirements of District project S-1203797.

Proposed ERC Certificates	
Certificate #	Criteria Pollutant
N-1553-1	VOC

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

Criteria Pollutant Summary: VOC

Certificate N-1553-1				
ERC	1 st Qtr. (lb/qtr)	2 nd Qtr. (lb/qtr)	3 rd Qtr. (lb/qtr)	4 th Qtr. (lb/qtr)
Original Value	7,335	7,335	7,335	7,335
Surplus Value	7,335	7,335	7,335	7,335

ERC Certificate N-1553-1

A. ERC Background

Criteria Pollutant: VOC

ERC Certificate N-1553-1 is a certificate that was split out from parent ERC Certificate N-950-1. Original ERC Certificate N-950-1 was issued to Andersen Rack Systems (N-2368) on 5/26/11 under project N-1062909. The ERCs were generated from the shutdown of a metal parts and products coating operation. The following table summarizes the values of the original parent certificate and the current value of the subject certificate proposed to be utilized as a part of the current District analysis:

Certificate N-950-1				
ERC	1st Qtr. (lb/qtr)	2nd Qtr. (lb/qtr)	3rd Qtr. (lb/qtr)	4th Qtr. (lb/qtr)
Original Value of Parent Certificate N-950-1	7,335	7,335	7,335	7,335
Current Value of ERC Certificate N-1553-1	7,335	7,335	7,335	7,335

B. Applicable District Rules at Time of Original Banking Project

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

1. District Rules

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

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

Rule 4603 Surface Coating of Metal Parts and Products (9/17/09)

The application review for the original ERC banking project demonstrated that the coating operation had VOC limits that were below the limits in Rule 4603. Therefore, the emission reductions were surplus of the requirements of Rule 4603 at the time the ERC was originally banked.

2. Federal Rules and Regulations

40 CFR Part 63 Subpart M National Emission Standards for Hazardous Air Pollutants for Major Sources: Surface Coating of Miscellaneous Metal Parts and Products

This subpart requires that all major sources (PE of any single HAP \geq 10 tons/yr or PE of combination of HAPs \geq 25 tons/yr) for existing general use coating affected sources to limit the VOC content coatings used to no more than 2.6 lb/gal coating solids used. In the original ERC banking project, the VOCs were limited to 2.3 lb/gal.

Therefore, the emission reductions were surplus of the requirements of the federal applicable limits at the time the ERC was originally banked.

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

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

1. District Rules:

No new or modified District rules have been adopted since the original banking action that would apply to the metal parts and products coating operation associated with the original ERC banking project. Therefore, the original VOC emission reductions continue to be surplus of District Rule requirements.

2. Federal Rules and Regulations:

No new or modified Federal rules or regulations have been adopted since the original banking action that would apply to the metal parts and products coating operation associated with the original ERC banking project. Therefore, the original VOC emission reductions continue to be surplus of Federal requirements.

VI. Surplus at Time of Use Adjustments to ERC Quantities for Certificate N-1553-1

The emissions continue to be surplus of all District and Federal Rules and Regulations.

Therefore, no adjustments to the ERC values are necessary for surplus at time of use considerations.

VII. Surplus Value of ERC Certificate N-1553-1

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

Certificate N-950-1 - Criteria Pollutant: VOC
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Surplus Value Adjustment	1 st Qtr. (lb/qtr)	2 nd Qtr. (lb/qtr)	3 rd Qtr. (lb/qtr)	4 th Qtr. (lb/qtr)
Original ERC Quantity (1)	7,335	7,335	7,335	7,335
Adjustments (2)	0	0	0	0
Percent Surplus (3) = $[(1) - (2)] \div (1) \times 100$	100%	100%	100%	100%
Current ERC Quantity (4)	7,335	7,335	7,335	7,335

Attachment IX ERC Withdrawal Calculations

VOC	1 st Quarter (lb)	2 nd Quarter (lb)	3 rd Quarter (lb)	4 th Quarter (lb)
ERC N-1553-1	7335	7335	7335	7335
Offsets Required (Includes distance offset ratio)	482	482	482	483
Amount Remaining	6853	6853	6853	6852
Credits reissued under ERC N-YYYY-1	6853	6853	6853	6852

Attachment X
Title V and Statewide Compliance Documents



San Joaquin Valley Air Pollution Control District



TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

ADMINISTRATIVE AMENDMENT MINOR MODIFICATION SIGNIFICANT MODIFICATION

COMPANY NAME: Sentinel Peak Resources California, LLC	FACILITY ID: S-1372
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: Sentinel Peak Resources California, LLC	
3. Agent to the Owner: Daniel Taimuty	

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

- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).
- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.
- Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true, accurate, and complete.
- For minor modifications, this application meets the criteria for use of minor permit modification procedures pursuant to District Rule 2520.

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

Daniel Taimuty
Signature of Responsible Official

4/15/2020
Date

Daniel Taimuty
Name of Responsible Official (please print)

EH&S Compliance Manager
Title of Responsible Official (please print)



1200 Discovery Drive, Ste 100
Bakersfield, CA 93309

May 4, 2020

Mr. Leonard Scandura
Manager of Permit Services
San Joaquin Valley Unified APCD
34946 Flyover Court
Bakersfield, CA 93308

Subject: Steam Generator - Compliance Certification

Dear Mr. Scandura:

I hereby certify that all major Stationary Sources owned or operated by such person (or by any entity controlling, controlled by, or under common control with such person) in California, which are subject to emission limitations, are in compliance or on a schedule for compliance with all applicable emission limitations and standards.

Alternative siting analysis is required for any project, which constitutes a New Major Source or a Federal Major Modification.

The current project occurs at existing facilities. The applicant proposes to operate a steam generator to thermally enhance existing wells at the site.

Since the project will provide thermal enhancement to be used at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

Daniel Fairmerty

Signature

EHS Compliance Manager

Title

Attachment XI
Draft ATCs

*San Joaquin Valley
Air Pollution Control District*

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-1372-16-27

LEGAL OWNER OR OPERATOR: SENTINEL PEAK RESOURCES CA LLC
MAILING ADDRESS: 1200 DISCOVERY DR, STE 500
BAKERSFIELD, CA 93309

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
CA

SECTION: NW 6 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 62.5 MMBTU/HR NATURAL GAS/TEOR GAS-FIRED STEAM GENERATOR (#12) (DIS# 44519-76) EQUIPPED WITH A NORTH AMERICAN GLE ULTRA LOW NOX BURNER, FGR AND O2 CONTROLLER AND EXHAUST GAS SOX SCRUBBER W/ESP SHARED WITH S-1372-127 AND S1372-317 (MCKITTRICK FRONT LEASE): ALLOW SIMULTANEOUS COMBUSTION OF TEOR GAS IN '-16 AND '-317, REVISE SOX EMISSIONS LIMIT TO 180 LB/DAY, LOWER CO EMISSIONS FACTOR

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. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 241 lb, 2nd quarter - 241 lb, 3rd quarter - 241 lb, and fourth quarter - 241 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 8/15/19) for the ERC specified below. [District Rule 2201] 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.

Samir Sheikh, Executive Director / APCO

Brian Clements, Director of Permit Services

S-1372-16-27 : May 4 2021 1:11PM -- EDGEHILR : Joint Inspection NOT Required

4. ERC Certificate Number N-1553-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. ATC shall be implemented concurrently with or subsequent to ATC S-1372-127-27. [District Rule 2201] Federally Enforceable Through Title V Permit
6. This steam generator is approved to operate at the following locations: Sec. 23, T31S, R22E, NW 1/4 Sec. 6, T30S, R22E, and NW 1/4 Sec. 10, T29S, R21E [District Rule 2201] Federally Enforceable Through Title V Permit
7. The permittee shall notify the District Compliance Division of each location at which the operation is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 2201] Federally Enforceable Through Title V Permit
8. No less than 0.5 miles of roadway shall be paved and maintained in good repair. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The steam generator shall be equipped with piping from TEOR operation S-1372-100 to fuel gas inlet on burner when operating at Sec. 23, T31S, R22E. [District Rule 2201] Federally Enforceable Through Title V Permit
10. SO_x (as SO₂) emissions from steam generator shall not exceed 180.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total casing gas sulfur oxide (SO_x as SO₂) emissions shall not exceed 1193.5 lb/day for the following steam generators and standby flare: S-1372-13 (#16), S-1372-16 (#12), S-1372-24 (#20), and S-1372-76. SO_x as SO₂ emissions from '-16 shall be calculated as $[(\text{mscf combusted in '-16})/(\text{combined mscf combusted in '-16, '-127, and '-317})] \times \text{total SO}_x \text{ emissions from scrubber/ESP '-127}$. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Emissions shall not exceed any of the following: 27 lb NO_x/day, 4,380 lb NO_x/year. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
14. Except during startup and shutdown emissions shall not exceed any of the following: PM₁₀: 0.014 lb/MMBtu; NO_x (as NO₂): 0.008 lb/MMBtu or 7 ppmv @ 3% O₂; VOC: 0.0012 lb/MMBtu; or CO: 25 ppmv @ 3% O₂. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
15. Compliance with 95% by weight sulfur removal efficiency requirement shall be conducted annually. [District Rule 4320] Federally Enforceable Through Title V Permit
16. Exhaust stack shall be equipped with adequate provisions facilitating the collection of gas samples consistent with EPA Test Methods. [District Rule 1081] Federally Enforceable Through Title V Permit
17. 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

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE

18. 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
19. 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
20. 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
21. The portable analyzer shall be calibrated prior to each use with a two-point calibration method (zero and span). Calibration shall be performed with certified calibration gases. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
22. Source testing to measure NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 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. 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
26. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the Permit to Operate, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
27. 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
28. 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
29. 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

CONDITIONS CONTINUE ON NEXT PAGE

30. 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
31. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit
32. Stack gas velocities shall be determined using EPA Method 2. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
33. 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
34. In lieu of the annual source testing requirements of Rule 4320, compliance with the applicable emission limits may be demonstrated by submittal of annual emissions test results to the District from a unit or units that represents a group of units, provided that all of the conditions in Section 6.3.2 are met and documented. [District Rule 4320] Federally Enforceable Through Title V Permit
35. Annual test results submitted to the District from unit(s) representing a group of units may be used to demonstrate compliance with NO_x and CO limits 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 or CO emissions 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, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
36. The following conditions must be met for representative unit(s) to be used to demonstrate compliance for NO_x and CO 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, 4306, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
37. All units in a group for which representative units are source tested to demonstrate compliance for NO_x and CO limits of this permit 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 the each unit of the group including all preventative and corrective maintenance work done. [District Rules 4305, 6.3.2, 4306, 6.3.2, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
38. All units in a group for which representative units are source tested to demonstrate compliance for NO_x and CO limits 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, 4306, 6.3.2, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
39. The number of representative units source tested to demonstrate compliance for NO_x and CO limits 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, 4306, 6.3.2, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
40. 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 quarterly. If a quarterly fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
41. 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

CONDITIONS CONTINUE ON NEXT PAGE

42. 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 3246, D 4084, or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
43. 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 third party fuel supplier or determined by: ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.3.2; 4305, 6.2; 4306, 6.2; and 4320, 6.2] Federally Enforceable Through Title V Permit
44. {519} 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 and record specific type of noncertified fuel used. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
45. Permittee shall maintain daily records of SO_x (as SO₂) emissions (lb/day) from steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit
46. Permittee shall maintain records of volume of fuel gas burned and TEOR gas incinerated, fuel gas and TEOR gas sulfur content, and such records shall be retained on site for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 1070 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
47. Sulfur compound emissions shall not exceed 0.11 lb of sulfur per million BTU. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas; multiplying the reported sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by a combination of source testing for sulfur compounds and fuel analysis. [District Rule 4406]
48. 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. 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 4801 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
49. {1677} This unit commenced construction, modification, or reconstruction prior to June 19, 1984. This unit has not been used to produce electricity for sale in 1985 or on or after November 15, 1990. Therefore, the requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [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
DRAFT

PERMIT NO: S-1372-100-38

LEGAL OWNER OR OPERATOR: SENTINEL PEAK RESOURCES CA LLC

MAILING ADDRESS: 1200 DISCOVERY DR, STE 500
BAKERSFIELD, CA 93309

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
CA

SECTION: 06 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:

MODIFICATION OF TEOR OPERATION WITH WELL CASING COLLECTION SYSTEM WITH VAPOR PIPING TO UNIT S-1372-99 SERVING 933 STEAM ENHANCED WELLS WITH 3-PHASE SEPARATORS, STANDBY FLARE, SLUG CATCHER, SCRUBBERS, HEAT EXCHANGERS, COMPRESSORS, PUMPS, SULFA CHECK AND LIQUID SULFUR REMOVAL SYSTEMS (GAMBLE/MCKITTRICK FRONT): ADD REFERENCE TO '-16 , 127, AND '-317 FOR COMBUSTION OF TEOR VAPORS

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. ATC shall be implemented concurrently with or subsequent to ATCs S-1327-16-27, '-100-34, '-100-35, '-100-36, '-100-37, '-100-39, '-127-28, and '-317-18 . [District Rule 2201] Federally Enforceable Through Title V Permit
4. Operation shall include the following equipment: 933 steam enhanced wells, well vent vapor collection system, standby flare, slug catchers, heat exchangers, compressors, pumps, vapor piping, dry fuel gas sulfur scrubbing system and liquid sulfur removal systems, tanks and 3-phase separators. [District Rule 2201] 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.

Samir Sheikh, Executive Director / APCO

Brian Clements, Director of Permit Services

S-1372-100-38 : May 4 2021 1:11PM -- EDGEHLR : Joint Inspection NOT Required

5. Operation shall include vapor piping from tanks S-1372-128, -209, -220, -323, -405, -412, S-1641-34, -35, -36, and -37 to vapor control system. [District Rule 2201] Federally Enforceable Through Title V Permit
6. At least one sulfur removal system shall be operated at all times. [District Rule 2201] Federally Enforceable Through Title V Permit
7. There shall be no leaks exceeding 10,000 ppmv from fugitive emissions components associated with liquid sulfur removal system. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Collected condensate shall be discharged into production pipeline. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Flare S-1372-100 shall only be used to incinerate TEOR vapors when one or more of steam generators S-1372-1, -2, -4, -16, -127, and -317 are not in operation. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Flare shall only use PUC quality natural gas as auxiliary fuel. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Flare shall be designed for smokeless operation, with no visible emissions in excess of 5% opacity. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The flare shall be operated according to the manufacturer's specifications, a copy of which shall be maintained on site. [District Rule 2520] Federally Enforceable Through Title V Permit
13. The flare in this permit shall be inspected every two weeks while in operation for visible emissions. If visible emissions are observed, corrective action shall be taken. If visible emissions continue, an EPA method 9 test shall be conducted within 72 hours. [District Rule 2520] Federally Enforceable Through Title V Permit
14. Flare shall comply with all of the applicable requirements of Rule 4311. [District Rule 4311] Federally Enforceable Through Title V Permit
15. The flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311] Federally Enforceable Through Title V Permit
16. The flare 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] Federally Enforceable Through Title V Permit
17. 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 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] Federally Enforceable Through Title V Permit
18. Flares using flow-sensing automatic ignition systems and not using a continuous flame pilot shall use purge gas for purging. [District Rule 4311] Federally Enforceable Through Title V Permit
19. Open flares (air-assisted, steam-assisted, or non-assisted) in which the flare gas pressure is less than 5 psig shall be operated in such a manner that meets the provisions of 40 CFR 60.18. [District Rule 4311] Federally Enforceable Through Title V Permit
20. Flaring is prohibited unless it is consistent with an approved flare minimization plan (FMP), pursuant to Rule 4311, Section 6.5, 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 as defined by Section 3.7 and is necessary to prevent an accident, hazard or release of vent gas directly to the atmosphere [District Rule 4311] Federally Enforceable Through Title V Permit
21. The operator of a flare subject to flare minimization requirements pursuant to Section 5.8 shall monitor the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. The operator shall maintain records pursuant to Section 6.1.7. Flares that the operator can verify, based on permit conditions, are not capable of producing reportable flare events pursuant to Section 6.2.2 shall not be required to monitor vent gas flow to the flare. [District Rule 4311] Federally Enforceable Through Title V Permit

22. The following records shall be maintained, retained on-site for a minimum of five years, and made available to the APCO, ARB, and EPA upon request: 1) A copy of the compliance determination conducted pursuant to Section 6.4.1, 2) For flares used during an emergency, record of the duration of flare operation, amount of gas burned, and the nature of the emergency situation, 3) A copy of the approved flare minimization plan pursuant to Section 6.5, 4) On and after July 1, 2012, where applicable, a copy of annual reports submitted to the APCO pursuant to Section 6.2, and 5) Where applicable, monitoring data collected pursuant to Sections 5.10. [District Rule 4311] Federally Enforceable Through Title V Permit
23. The operator of a flare subject to flare minimization plans pursuant to Section 5.8 of Rule 4311 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] Federally Enforceable Through Title V Permit
24. Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare minimization plans pursuant to Section 5.8 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: 1) The results of an investigation to determine the primary cause and contributing factors of the flaring event; 2) Any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented; 3) 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 4) The date, time, and duration of the flaring event. [District Rule 4311] Federally Enforceable Through Title V Permit
25. Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare monitoring requirements pursuant to Rule 4311, Sections 5.10, 6.6, 6.7, 6.8, 6.9, and 6.10, as appropriate, 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: 1) The total volumetric flow of vent gas in standard cubic feet for each day, 2) Hydrogen sulfide content, methane content, and hydrocarbon content of vent gas composition pursuant to Section 6.6, 3) If vent gas composition is monitored by a continuous analyzer or analyzers pursuant to Section 5.11, average total hydrocarbon content by volume, average methane content by volume, and depending upon the analytical method used pursuant to Section 6.3.4, total reduced sulfur content by volume or hydrogen sulfide content by volume of vent gas flared for each hour of the month, 4) If the flow monitor used pursuant to Section 5.10 measures molecular weight, the average molecular weight for each hour of each month, 5) 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, 6) Flare monitoring system downtime periods, including dates and times, 7) For each day and for each month provide calculated sulfur dioxide emissions, and 8) A flow verification report for each flare subject to this rule. The flow verification report shall include flow verification testing pursuant to Section 6.3.5. [District Rule 4311] Federally Enforceable Through Title V Permit
26. 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. Hydrogen sulfide content of vent gas shall be determined using ASTM Method D 1945-96, ASTM Method UOP 539-97, ASTM Method D 4084-94, or ASTM Method D 4810-88. [District Rule 4311] Federally Enforceable Through Title V Permit
27. Upon request, the operator of flares that are subject to Section 5.6 shall make available to the APCO the compliance determination records that demonstrate compliance with the provisions of 40 CFR 60.18, (c)(3) through (c)(5). [District Rule 4311] Federally Enforceable Through Title V Permit
28. Operator shall monitor vent gas composition using one of the five methods pursuant to Section 6.6.1 through Section 6.6.5, as appropriate. [District Rule 4311] Federally Enforceable Through Title V Permit
29. Operator shall monitor the volumetric flows of 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] Federally Enforceable Through Title V Permit
30. All of the general monitoring provisions of Section 6.9, as applicable, shall be met. [District Rule 4311] Federally Enforceable Through Title V Permit

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31. 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] Federally Enforceable Through Title V Permit
32. Vapors from this well vent vapor control system shall be incinerated in steam generators S-1372-1, -2, -4, -16, -30, -32, -33, -127, -317, -334 or standby flare and/or injected into DOGGR approved gas injection wells. [District Rule 2201] Federally Enforceable Through Title V Permit
33. Total sulfur oxide (SOx as SO2) emissions shall not exceed 1,075.2 lb/day for the following steam generators: S-1372-1, -2, -4, -127, -317, and standby flare. [District Rule 2201] Federally Enforceable Through Title V Permit
34. Fugitive emissions from vapor collection and control system shall not exceed 239.6 lb VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit
35. There shall be no more than 30 gas leaks. [District Rule 2201] Federally Enforceable Through Title V Permit
36. Permittee shall maintain accurate records of well casing vapor H2S concentration (periodic sampling of no less than once per month), daily volume of casing vapor incinerated, and calculated daily SO2 emissions from S-1372-1, -2, and -4. [District Rules 1070 and 2520] Federally Enforceable Through Title V Permit
37. Permittee shall maintain with the permit a current listing of all steam enhanced wells connected to the casing vent control system and shall make such listing readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
38. Permittee shall maintain accurate component count for TEOR operation according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c (Feb 1999), Screening Value Range emission factors. Permittee shall update such records when new components are installed. [District Rule 2201] Federally Enforceable Through Title V Permit
39. The following test method shall be used for fuel gas sulfur content - ASTM D3246 or double GC for H2S and mercaptans. [District Rule 2520] Federally Enforceable Through Title V Permit
40. 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
41. During the time any steam-enhanced crude oil production well is undergoing service or repair while the well is not producing, it shall be exempt from the emission control requirements of District Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
42. The inspection requirements of Section 5.4.1 through Section 5.4.7 of Rule 4401 shall not apply to components exclusively handling gas/vapor or liquid with a VOC content of ten percent by weight (10%) or less, as determined by the test methods in Section 6.3.4 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
43. Gas and liquid leaks are as defined in Section 3.20 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
44. An operator shall not operate a steam-enhanced crude oil production well unless the operator complies with either of the following requirements: The steam-enhanced crude oil production well vent is closed and the front line production equipment downstream of the wells that carry produced fluids (crude oil or mixture of crude oil and water) is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401, the well vent may be temporarily opened during periods of attended service or repair of the well provided such activity is done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere, or the steam-enhanced crude oil production well vent is open and the well vent is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit

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45. An operator shall be in violation of this rule if any District inspection demonstrates or if any operator inspection conducted pursuant to Section 5.4 of Rule 4401 demonstrates the existence of an open-ended line or a valve located at the end of the line that is not sealed with a blind flange, plug, cap, or a second closed valve that is not closed at all times, except during attended operations as defined by Section 5.2.2.1 of Rule 4401 requiring process fluid flow through the open-ended lines, a component with a major liquid leak, or a component with a gas leak greater than 50,000 ppmv. [District Rule 4401] Federally Enforceable Through Title V Permit
46. An operator shall be in violation of this rule if any District inspection demonstrates or if any operator inspection conducted pursuant to Section 5.4 of Rule 4401 demonstrates the existence of any combination of components with minor liquid leaks, minor gas leaks, or a gas leaks greater than 10,000 ppmv up to 50,000 ppmv that totals more than number of leaks allowed by Table 2 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
47. An operator shall not use any component with a leak as defined in Section 3.0 of Rule 4401, or that is found to be in violation of the provisions of Section 5.2.2 of Rule 4401. However, components that were found leaking may be used provided such leaking components have been identified with a tag for repair, are repaired, or awaiting re-inspection after being repaired within the applicable time frame specified in Section 5.5 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
48. 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 with minimal spillage of material and VOC emissions to the atmosphere. [District Rule 4401] Federally Enforceable Through Title V Permit
49. An operator shall comply with the requirements of Section 6.7 of Rule 4401 if there is any change in the description of major components or critical components. [District Rule 4401] Federally Enforceable Through Title V Permit
50. Except for pipes and unsafe-to-monitor components, an operator shall inspect all other components pursuant to the requirements of Section 6.3.3 of Rule 4401 at least once every year. [District Rule 4401] Federally Enforceable Through Title V Permit
51. An operator shall visually inspect all pipes at least once every year. Any visual inspection of pipes that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected within 24 hours after detecting the leak. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
52. In addition to the inspections required by Section 5.4.1 of Rule 4401, an operator shall inspect for leaks all accessible operating pumps, compressors, and PRDs in service as follows: An operator shall audio-visually (by hearing and by sight) inspect for leaks all accessible operating pumps, compressors, and PRDs in service at least once each calendar week. Any audio-visual inspection of an accessible operating pump, compressor, and PRD performed by an operator that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected not later than 24 hours after conducting the audio-visual inspection. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
53. In addition to the inspections required by Sections 5.4.1, 5.4.2 and 5.4.3 of Rule 4401, operator shall perform the following: initially inspect a PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the discovery of the release, re-inspect the PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the initial inspection, inspect all new, replaced, or repaired fittings, flanges, and threaded connections within 72 hours of placing the component in service. Except for PRDs subject to the requirements of Section 5.4.4.1 of Rule 4401, an operator shall inspect a component that has been repaired or replaced not later than 15 calendar days after the component was repaired or replaced. [District Rule 4401] Federally Enforceable Through Title V Permit
54. An operator shall inspect all unsafe-to-monitor components during each turnaround. [District Rule 4401] Federally Enforceable Through Title V Permit
55. District inspection in no way fulfills any of the mandatory inspection requirements that are placed upon operators and cannot be used or counted as an inspection required of an operator. [District Rule 4401] Federally Enforceable Through Title V Permit

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56. An operator shall affix a readily visible weatherproof tag to a leaking component upon detection of the leak and shall include the following information on the tag: date and time of leak detection, date and time of leak measurement, for a gaseous leak, the leak concentration in ppmv, for a liquid leak, whether it is a major liquid leak or a minor liquid leak, whether the component is an essential component, an unsafe-to monitor component, or a critical component. [District Rule 4401] Federally Enforceable Through Title V Permit
57. An operator shall keep the tag affixed to the component until an operator has met all of the following conditions: repaired or replaced the leaking component, re-inspected the component using the test method in Section 6.3.3, and the component is found to be in compliance with the requirements of this rule. [District Rule 4401] Federally Enforceable Through Title V Permit
58. An operator shall minimize a component leak in order to stop or reduce leakage to the atmosphere immediately to the extent possible, but not later than one (1) hour after detection of the leak. [District Rule 4401] Federally Enforceable Through Title V Permit
59. Except for leaking critical components or leaking essential components subject to the requirements of Section 5.5.7 of Rule 4401, if an operator has minimized a leak but the leak still exceeds the applicable leak limits as defined in Section 3.0 of Rule 4401, an operator shall comply with at least one of the following requirements as soon as practicable but not later than the time period specified in Table 3 of Rule 4401: Repair or replace the leaking component; or vent the leaking component to a VOC collection and control system as defined in Section 3.0 of Rule 4401, or remove the leaking component from operation. [District Rule 4401] Federally Enforceable Through Title V Permit
60. The repair period in calendar days shall not exceed 14 days for minor gas leaks, 5 days for major gas leaks less than or equal to 50,000 ppmv, 2 days for gas leak greater than 50,000 ppmv, 3 days for minor liquid leaks, 2 days for major liquid leaks. [District Rule 4401] Federally Enforceable Through Title V Permit
61. The leak rate measured after leak minimization has been performed shall be the leak rate used to determine the applicable repair period specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
62. The time of the initial leak detection shall be the start of the repair period specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
63. If the leaking component is an essential component or a critical component that cannot be immediately shut down for repairs, and if the leak has been minimized but the leak still exceeds the applicable leak standard of this rule, the operator shall repair or replace the essential component or critical component 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 4401] Federally Enforceable Through Title V Permit
64. The operator of any steam-enhanced crude oil production well shall maintain records of the date and well identification where steam injection or well stimulation occurs. [District Rule 4401] Federally Enforceable Through Title V Permit
65. An operator of any steam-enhanced crude oil production well shall keep source test records which demonstrate compliance with the control efficiency requirements of the VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
66. Operator of any steam-enhanced crude oil production well shall keep an inspection log maintained pursuant to Section 6.4 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
67. 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, instrument 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 shall be maintained. [District Rule 4401] Federally Enforceable Through Title V Permit
68. An operator shall maintain copies at the facility of the training records of the training program operated pursuant to Section 6.5 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
69. Operator shall keep a copy of the APCO-approved Operator Management Plan at the facility. [District Rule 4401] Federally Enforceable Through Title V Permit

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70. Operator shall keep a list of all gauge tanks, as defined in Section 3.17 of Rule 4401. The list shall contain the size, identification number, the location of each gauge tank and specify whether the gauge tank is upstream of all front line production equipment. [District Rule 4401] Federally Enforceable Through Title V Permit
71. The results of gauge tank TVP testing conducted pursuant to Section 6.2.3 shall be submitted to the APCO within 60 days after the completion of the testing. [District Rule 4401] Federally Enforceable Through Title V Permit
72. An operator that discovers that a PRD has released shall record the date that the release was discovered, and the identity and location of the PRD that released. An operator shall submit such information recorded during the calendar year to the APCO no later than 60 days after the end of the calendar year. [District Rule 4401] Federally Enforceable Through Title V Permit
73. An operator shall source test annually all vapor collection and control systems used to control emissions from steam-enhanced crude oil production well vents to determine the control efficiency of the device(s) used for destruction or removal of VOC. Compliance testing shall be performed annually by source testers certified by ARB. Testing shall be performed during June, July, August, or September of each year if the system's control efficiency is dependent upon ambient air temperature. A process system as defined in Section 3.30 of Rule 4401 is not subject to compliance source testing requirements. [District Rule 4401] Federally Enforceable Through Title V Permit
74. If approved by EPA, ARB, and the APCO, an operator need not comply with the annual testing requirement of Section 6.2.1 if all uncondensed VOC emissions collected by a vapor collection are controlled by an internal combustion engine subject to Rule 4702, a combustion device subject to Rule 4320, 4307 or 4308, a flare subject to Rule 4311. [District Rule 4401] Federally Enforceable Through Title V Permit
75. An operator shall comply with the following requirements for each gauge tank, as defined in Section 3.17 of Rule 4401: Conduct periodic TVP testing of each gauge tank at least once every 24 months during summer (July - September), and whenever there is a change in the source or type of produced fluid in the gauge tank. The TVP testing shall be conducted at the actual storage temperature of the produced fluid in the gauge tank using the applicable TVP test method specified in Section 6.4 of Rule 4623 (Storage of Organic Liquids). The operator shall submit the TVP testing results to the APCO as specified in Section 6.1.9 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
76. The control efficiency of any VOC control device, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case EPA Method 25a may be used. EPA Method 18 may be used in lieu of EPA Method 25 or EPA Method 25a provided the identity and approximate concentrations of the analytes/compounds in the sample gas stream are known before analysis with the gas chromatograph and the gas chromatograph is calibrated for each of those known analyte/compound to ensure that the VOC concentrations are neither under- or over-reported. [District Rule 4401] Federally Enforceable Through Title V Permit
77. VOC content shall be analyzed by using the latest revision of ASTM Method E168, E169, or E260 as applicable. Analysis of halogenated exempt compounds shall be performed by using ARB Method 432. [District Rule 4401] Federally Enforceable Through Title V Permit
78. Leak inspection, other than audio-visual, and measurements of gaseous leak concentrations shall be conducted according to 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 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. Where safety is a concern, such as measuring leaks from compressor seals or pump seals when the shaft is rotating, a person shall measure leaks by placing the instrument probe inlet at a distance of one (1) centimeter or less from the surface of the component interface. [District Rule 4401] Federally Enforceable Through Title V Permit
79. The VOC content by weight percent (wt.%) shall be determined using American Society of Testing and Materials (ASTM) D1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 or the latest revision of ASTM Method E168, E169 or E260 for liquids. [District Rule 4401] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

80. Operator shall maintain an inspection log in which an operator records, at a minimum, all of the following information for each inspection performed: The total number of components inspected, total number and percentage of leaking components found by component type, location, type, and name or description of each leaking component and description of any unit where the leaking component is found, date of leak detection and the method of leak detection. For gaseous leaks, the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak. the date of repair, replacement, or removal from operation of leaking components, identify and location of essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier, methods used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier, the date of re-inspection and the leak concentration in ppmv after the component is repaired or is replaced, the inspector's name, business mailing address, and business telephone number, date and signature of the facility operator responsible for the inspection and repair program certifying the accuracy of the information recorded in the log. [District Rule 4401] Federally Enforceable Through Title V Permit
81. Permittee shall establish and implement an employee training program for inspecting and repairing components and recordkeeping procedures, as necessary. [District Rule 4401] Federally Enforceable Through Title V Permit
82. In accordance with the approved Operator Management Plan (OMP), permittee shall meet all applicable operating, leak standards, inspection and re-inspection, leak repair, record keeping, and notification requirements of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
83. By January 30 of each year, permittee shall submit to the APCO for approval, in writing, an annual report indicating any changes to the existing, approved OMP. [District Rule 4401] Federally Enforceable Through Title V Permit
84. The crude oil production from wells associated with this permit unit shall not lie within 1000 feet of an air injection well used for in-situ combustion. [District Rule 4407] Federally Enforceable Through Title V Permit
85. 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. 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 4801 and 2520] Federally Enforceable Through Title V Permit
86. The requirements of SJVUAPCD Rule 4407 (Adopted 5/19/94) and SJVUAPCD Rule 4801 (Adopted 12/17/92) do not apply to the well vents. For Rule 4801 applicability, well vent emissions are fugitive emissions not considered to come from a point source. 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
DRAFT

PERMIT NO: S-1372-127-28

LEGAL OWNER OR OPERATOR: SENTINEL PEAK RESOURCES CA LLC
MAILING ADDRESS: 1200 DISCOVERY DR, STE 500
BAKERSFIELD, CA 93309

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
CA

SECTION: 06 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 62.5 MMBTU/HR NATURAL GAS/TEOR GAS-FIRED STEAM GENERATOR #43 EQUIPPED WITH A NORTH AMERICAN MODEL MAGNA-FLAME G-LE LOW NOX BURNER, FGR, O2 CONTROLLER, AND EXHAUST GAS SOX SCRUBBER W/ESP SHARED WITH S-1372-16 AND '-317 (MCKITTRICK FRONT LEASE): LOWER CO LIMIT

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. If continuous operation oxygen analyzer/controller is utilized, excess O2 shall be maintained between 0.5 and 4.0%. If not utilized, excess air shall be maintained at no less than 15%. [District Rule 2201] Federally Enforceable Through Title V Permit
4. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of gas combusted in the unit shall be installed, utilized and maintained for each fuel line. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
5. Exhaust from unit shall be directed only to SO2 scrubber/wet ESP authorized herein except when burning PUC quality natural gas exclusively. [District Rule 2201] 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.

Samir Sheikh, Executive Director / APCO

Brian Clements, Director of Permit Services

S-1372-127-28 : May 4 2021 1:11PM -- EDGEHLR : Joint Inspection NOT Required

6. Scrubber/wet ESP shall be in operation when combusting TEOR gas. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Vapors from TEOR operation, permit # S-1372-100 may be incinerated in this steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Except during start-up and shutdown, emissions from the steam generator shall not exceed any of the following limits: 9 ppmvd NO_x @ 3% O₂ or 0.011 lb-NO_x/MMBtu, 0.324 lb-SO_x/MMBtu, 0.008 lb-PM10/MMBtu, 25 ppmvd CO @ 3% O₂ or 0.0185 lb-CO/MMBtu, or 0.003 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
9. During start-up and shutdown, emissions from the steam generator shall not exceed any of the following limits: 15 ppmvd NO_x @ 3% O₂ or 0.018 lb-NO_x/MMBtu, 0.324 lb-SO_x/MMBtu, 0.008 lb-PM10/MMBtu, 25 ppmvd CO @ 3% O₂ or 0.0185 lb-CO/MMBtu, or 0.003 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
10. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rule 4306 and 4320] Federally Enforceable Through Title V Permit
11. Duration of startup and shutdown shall not exceed 2 hours each per occurrence and, combined, shall not exceed 4 hours per day. During startup or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of startup and shutdown periods [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
12. Daily records of start-up and shutdown durations and number of occurrences of each shall be maintained. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
13. Total sulfur oxide (SO_x as SO₂) emissions shall not exceed 1,075.2 lb/day from steam generators S-1372-1, '2, '4, '127, '317, and flare '100. [District Rule 2201] Federally Enforceable Through Title V Permit
14. All vapor recovery gas burned in this device shall first be treated by the scrubber/wet ESP so at least 95% by weight of the sulfur is removed. [District Rules 2201, 4301, 4320, 4406, and 4801] Federally Enforceable Through Title V Permit
15. Compliance with the 95% by weight sulfur removal efficiency shall be conducted at least once every twelve months. [District Rule 4320] Federally Enforceable Through Title V Permit
16. The SO_x emission control system efficiency shall be determined using the following equation: Percent Control Efficiency = [(CSO₂, inlet - CSO₂, outlet) / CSO₂, inlet] x 100, where "CSO₂, inlet" is equal to the concentration of SO_x (expressed as SO₂) at the inlet side of the SO_x emission control system (in lb/dscf) and "CSO₂, outlet" is equal to the concentration of SO_x (expressed as SO₂) at the outlet side of the SO_x emission control system (in lb/dscf). [District Rule 4320] Federally Enforceable Through Title V Permit
17. The total gas fired in this unit, on a monthly average, shall be less than 50% PUC quality natural gas, by volume. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet and no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet. PUC quality natural gas also means high methane gas of at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
18. The permittee shall maintain monthly records of the volume of PUC quality natural gas and the total gas fired in this unit. Permittee shall keep monthly records of the percentage by volume of PUC quality gas fired and indicate if the volume of PUC quality gas fired is less than 50%. [District Rule 4320] Federally Enforceable Through Title V Permit
19. Scrubber/wet ESP control efficiency shall not be less than 95% by weight sulfur compounds. [District Rule 2201] Federally Enforceable Through Title V Permit
20. Scrubber liquor pH shall be maintained within the range demonstrated to achieve compliance with SO₂ emissions limit and control efficiency performance, and shall be continuously monitored. [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

21. Scrubber mist eliminator shall be properly cleaned and maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
22. The wet ESP's secondary DC voltage shall be monitored weekly to ensure it is operating between 35 to 50KV [District Rule 2201] Federally Enforceable Through Title V Permit
23. Scrubber recirculation liquor liquid to gas ratio shall be maintained at no less than that demonstrated to achieve compliance during source testing. [District Rule 2201] Federally Enforceable Through Title V Permit
24. When any unit connected to scrubber/wet ESP is burning TEOR gas, scrubber/wet ESP shall be operating and permittee shall demonstrate compliance with sulfur oxide emissions limit by stack source testing within 60 days of initial scrubbing date and annually thereafter unless no TEOR gas has been burned since the last scrubber performance source test. Sulfur removal efficiency of scrubber/wet ESP shall be demonstrated during initial stack source test and calculated with subsequent tests. Ongoing compliance with sulfur oxide emissions limit shall be by calculation using the scrubber liquid pH, the demonstrated sulfur removal efficiency, and the fuel gas sulfur content. Fuel gas sulfur content shall be obtained by sample analysis at least quarterly. [District Rule 2201] Federally Enforceable Through Title V Permit
25. When unit is operated without scrubber/wet ESP, permittee shall demonstrate compliance with the sulfur oxide emissions limit by analysis of the fuel gas sulfur content within 60 days of initiating operation without scrubber. Analyses, as approved by the APCO, provided by the gas supplier may be used to satisfy this requirement. [District Rule 2201] Federally Enforceable Through Title V Permit
26. 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 Methods 6, 6B, 8, or ARB 100. When operating unscrubbed, a grab sample analysis by double GC performed in the laboratory and EPA Method 19 may be used to calculate SO_x emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every 36 months unless testing is required by scrubber operational mode change as noted above. Annual source testing shall resume if any test fails to show compliance. [District Rule 2201] Federally Enforceable Through Title V Permit
27. Exhaust stack shall be equipped with adequate provisions facilitating the collection of gas samples consistent with EPA Test Methods. [District Rule 1081] Federally Enforceable Through Title V Permit
28. 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
29. 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
30. 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

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CONDITIONS CONTINUE ON NEXT PAGE

31. 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
32. The portable analyzer shall be calibrated prior to each use with a two-point calibration method (zero and span). Calibration shall be performed with certified calibration gases. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
33. Source testing to measure NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
34. 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
35. 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
36. 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
37. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the Permit to Operate, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
38. 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
39. 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
40. 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
41. 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
42. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit
43. Stack gas velocities shall be determined using EPA Method 2. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
44. 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
45. In lieu of the annual source testing requirements of Rule 4320, compliance with the applicable emission limits may be demonstrated by submittal of annual emissions test results to the District from a unit or units that represents a group of units, provided that all of the conditions in Section 6.3.2 are met and documented. [District Rule 4320] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

46. Annual test results submitted to the District from unit(s) representing a group of units may be used to demonstrate compliance with NO_x and CO limits 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 or CO emissions 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, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
47. The following conditions must be met for representative unit(s) to be used to demonstrate compliance for NO_x and CO 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, 4306, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
48. All units in a group for which representative units are source tested to demonstrate compliance for NO_x and CO limits of this permit 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 the each unit of the group including all preventative and corrective maintenance work done. [District Rules 4305, 6.3.2, 4306, 6.3.2, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
49. All units in a group for which representative units are source tested to demonstrate compliance for NO_x and CO limits 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, 4306, 6.3.2, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
50. The number of representative units source tested to demonstrate compliance for NO_x and CO limits 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, 4306, 6.3.2, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
51. 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 quarterly. If a quarterly fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
52. 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
53. 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 3246, D 4084, or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
54. 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 third party fuel supplier or determined by: ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.3.2; 4305, 6.2; 4306, 6.2; and 4320, 6.2] Federally Enforceable Through Title V Permit
55. {519} 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 and record specific type of noncertified fuel used. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

56. Permittee shall maintain records of the wet ESP's secondary DC voltage and shall be made readily available for District inspection upon request [District Rule 2201] Federally Enforceable Through Title V Permit
57. Permittee shall maintain records of volume of fuel gas burned and TEOR gas incinerated, fuel gas and TEOR gas sulfur content, and such records shall be retained on site for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 1070 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
58. Sulfur compound emissions shall not exceed 0.11 lb of sulfur per million BTU. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas; multiplying the reported sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by a combination of source testing for sulfur compounds and fuel analysis. [District Rule 4406]
59. 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. 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 4801 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
60. {565} Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of 40 CFR 60, Subpart Dc (except 60.44c(g) and (h) and 60.48c). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
61. {1670} This unit has not been used to produce electricity for sale in 1985 or on or after November 15, 1990. Therefore, the requirements of 40 CFR 72.6(b) do not apply to this source. A permit shield is granted from this requirement. [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
DRAFT

PERMIT NO: S-1372-317-18

LEGAL OWNER OR OPERATOR: SENTINEL PEAK RESOURCES CA LLC
MAILING ADDRESS: 1200 DISCOVERY DR, STE 500
BAKERSFIELD, CA 93309

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
CA

SECTION: 06 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 67.5 MMBTU/HR NATURAL GAS/TEOR GAS-FIRED STEAM GENERATOR EQUIPPED WITH A NORTH AMERICAN MODEL MAGNA-FLAME G-LE LOW NOX BURNER, FGR AND EXHAUST GAS SOX SCRUBBER W/ESP SHARED WITH S-1372-16 AND '-127 (MCKITTRICK FRONT LEASE): ALLOW SIMULTANEOUS COMBUSTION OF TEOR GAS IN '-16 AND '-317, REVISE SOX EMISSIONS LIMIT TO 180 LB/DAY, LOWER CO EMISSIONS FACTOR, CORRECT VOC EMISSION FACTOR

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. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 241 lb, 2nd quarter - 241 lb, 3rd quarter - 241 lb, and fourth quarter - 242 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 8/15/19) for the ERC specified below. [District Rule 2201] 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.

Samir Sheikh, Executive Director / APCO

Brian Clements, Director of Permit Services

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4. ERC Certificate Number N-1553-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Unit shall be fired only on PUC quality natural gas or TEOR waste gas. [District Rule 2201] Federally Enforceable Through Title V Permit
6. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of gas combusted in the unit shall be installed, utilized and maintained for each fuel line. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
7. Vapors from TEOR operation, permit # S-1372-100 may be incinerated in this steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Exhaust from unit shall be directed only to SO₂ scrubber/wet ESP listed on S-1372-127 except when burning PUC quality natural gas exclusively. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Scrubber/wet ESP listed on S-1372-127 shall be in operation when combusting TEOR gas. [District Rule 2201] Federally Enforceable Through Title V Permit
10. All wells producing from strata steamed by this unit shall be connected to a District-approved emissions control system, have District-approved closed casing vents or be District-approved uncontrolled cyclic wells. [District Rule 4401] Federally Enforceable Through Title V Permit
11. This steam generator shall be exclusively fired on PUC quality natural gas when steam generators S-1372-13 and 24 are gas fired and incinerating TEOR waste gas. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rule 4306 and 4320] Federally Enforceable Through Title V Permit
13. Duration of startup and shutdown shall not exceed 2 hours each per occurrence and, combined, shall not exceed 4 hours per day. During startup or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of startup and shutdown periods. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
14. SO_x (as SO₂) emissions from steam generator shall not exceed 180.0 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Except during start-up and shutdown, emissions from the steam generator shall not exceed any of the following limits: 9 ppmvd NO_x @ 3% O₂ or 0.011 lb-NO_x/MMBtu, , 0.008 lb-PM₁₀/MMBtu, 25 ppmvd CO @ 3% O₂ or 0.0185 lb-CO/MMBtu, or 0.0039 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
16. During start-up and shutdown, emissions from the steam generator shall not exceed any of the following limits: 15 ppmvd NO_x @ 3% O₂ or 0.018 lb-NO_x/MMBtu, 0.008 lb-PM₁₀/MMBtu, 25 ppmvd CO @ 3% O₂ or 0.0185 lb-CO/MMBtu, or 0.0039 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
17. NO_x emissions shall not exceed either of the following: 19.8 lb/day and 6,403 lb/y. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Total sulfur oxide (SO_x as SO₂) emissions shall not exceed 1,075.2 lb/day from steam generators S-1372-1, '2, '4, '127, '317, and flare '100. [District Rule 2201] Federally Enforceable Through Title V Permit
19. All vapor recovery gas burned in this device shall first be treated by the scrubber/wet ESP so at least 95% by weight of the sulfur is removed. [District Rules 2201, 4301, 4320, 4406, and 4801] Federally Enforceable Through Title V Permit

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20. Compliance with the 95% by weight sulfur removal efficiency shall be conducted at least once every twelve months. [District Rule 4320] Federally Enforceable Through Title V Permit
21. The SO_x emission control system efficiency shall be determined using the following equation: Percent Control Efficiency = [(CSO₂, inlet - CSO₂, outlet) / CSO₂, inlet] x 100, where "CSO₂, inlet" is equal to the concentration of SO_x (expressed as SO₂) at the inlet side of the SO_x emission control system (in lb/dscf) and "CSO₂, outlet" is equal to the concentration of SO_x (expressed as SO₂) at the outlet side of the SO_x emission control system (in lb/dscf). [District Rule 4320] Federally Enforceable Through Title V Permit
22. The total gas fired in this unit, on a monthly average, shall be less than 50% PUC quality natural gas, by volume. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet and no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet. PUC quality natural gas also means high methane gas of at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
23. The permittee shall maintain monthly records of the volume of PUC quality natural gas and the total gas fired in this unit. Permittee shall keep monthly records of the percentage by volume of PUC quality gas fired and indicate if the volume of PUC quality gas fired is less than 50%. [District Rule 4320] Federally Enforceable Through Title V Permit
24. 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 Methods 6, 6B, 8, or ARB 100. When operating unscrubbed, a grab sample analysis by double GC performed in the laboratory and EPA Method 19 may be used to calculate SO_x emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every 36 months unless testing is required by scrubber operational mode change as noted above. Annual source testing shall resume if any test fails to show compliance. [District Rule 2201] Federally Enforceable Through Title V Permit
25. Sulfur compound (SO₂) emission limit compliance shall be demonstrated by fuel gas sulfur analysis performed 60 days prior to permit anniversary date. [District Rule 1081] Federally Enforceable Through Title V Permit
26. Compliance with casing gas sulfur compound emission limits shall be demonstrated by record keeping of TEOR gas flowrate and H₂S concentration. [District Rule 1070] Federally Enforceable Through Title V Permit
27. The wet ESP's secondary DC voltage shall be monitored weekly to ensure it is operating between 35 to 50KV [District Rule 2201] Federally Enforceable Through Title V Permit
28. Permittee shall maintain daily records of volume of natural gas burned and TEOR waste gas incinerated. [District Rule 2201] Federally Enforceable Through Title V Permit
29. Permittee shall measure and record, at least monthly, the sulfur content and BTU content of the TEOR waste gas incinerated in this unit. [District Rule 4406, 4.0] Federally Enforceable Through Title V Permit
30. Permittee shall measure and record the natural gas sulfur content and BTU content at the time of NO_x testing, except for natural gas purchased from a PUC regulated utility. [District Rule 4406, 4.0] Federally Enforceable Through Title V Permit
31. Exhaust stack shall be equipped with adequate provisions facilitating the collection of gas samples consistent with EPA Test Methods. [District Rule 1081] Federally Enforceable Through Title V Permit
32. 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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33. 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
34. 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
35. 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
36. The portable analyzer shall be calibrated prior to each use with a two-point calibration method (zero and span). Calibration shall be performed with certified calibration gases. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
37. Source testing to measure NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
38. 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
39. 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
40. 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
41. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the Permit to Operate, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
42. 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
43. 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
44. 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

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45. 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
46. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit
47. Stack gas velocities shall be determined using EPA Method 2. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
48. 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
49. In lieu of the annual source testing requirements of Rule 4320, compliance with the applicable emission limits may be demonstrated by submittal of annual emissions test results to the District from a unit or units that represents a group of units, provided that all of the conditions in Section 6.3.2 are met and documented. [District Rule 4320] Federally Enforceable Through Title V Permit
50. Annual test results submitted to the District from unit(s) representing a group of units may be used to demonstrate compliance with NO_x and CO limits 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 or CO emissions 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, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
51. The following conditions must be met for representative unit(s) to be used to demonstrate compliance for NO_x and CO 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, 4306, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
52. All units in a group for which representative units are source tested to demonstrate compliance for NO_x and CO limits of this permit 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 the each unit of the group including all preventative and corrective maintenance work done. [District Rules 4305, 6.3.2, 4306, 6.3.2, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
53. All units in a group for which representative units are source tested to demonstrate compliance for NO_x and CO limits 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, 4306, 6.3.2, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
54. The number of representative units source tested to demonstrate compliance for NO_x and CO limits 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, 4306, 6.3.2, 4320, and 4351, 6.3.2] Federally Enforceable Through Title V Permit
55. 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 quarterly. If a quarterly fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
56. 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

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57. 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 3246, D 4084, or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
58. 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 third party fuel supplier or determined by: ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.3.2; 4305, 6.2; 4306, 6.2; and 4320, 6.2] Federally Enforceable Through Title V Permit
59. {519} 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 and record specific type of noncertified fuel used. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
60. Permittee shall maintain daily records of SO_x (as SO₂) emissions (lb/day) from steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit
61. Permittee shall maintain records of the wet ESP's secondary DC voltage and shall be made readily available for District inspection upon request [District Rule 2201] Federally Enforceable Through Title V Permit
62. Permittee shall maintain records of volume of fuel gas burned and TEOR gas incinerated, fuel gas and TEOR gas sulfur content, and such records shall be retained on site for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 1070 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
63. Sulfur compound emissions shall not exceed 0.11 lb of sulfur per million BTU. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas; multiplying the reported sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by a combination of source testing for sulfur compounds and fuel analysis. [District Rule 4406]
64. 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. 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 4801 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
65. This unit commenced construction, modification, or reconstruction prior to June 19, 1984. This unit has not been used to produce electricity for sale in 1985 or on or after November 15, 1990. Therefore, the requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

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