



NOV 26 2014

Martha Brock BreitBurn Operating LP 515 S Flower Street Los Angeles, CA 90071-2241

Re: Notice of Preliminary Decision - Authority to Construct

Facility Number: S-510 Project Number: S-1143169

Dear Ms. Brock:

Enclosed for your review and comment is the District's analysis of BreitBurn Operating LP's application for an Authority to Construct for replacement of 90 MMBtu/hr flare S-510-21 with a 140 MMBtu/hr flare, at Dow Chancelor Lease in the Belridge Oil Field.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. David Torii of Permit Services at (661) 392-5620.

Sincerely.

Amaud Marjollet

Director of Permit Services

huavel Must

AM:DBT/st

Enclosures

cc: Mike Tollstrup, CARB (w/ enclosure) via email

Seyed Sadredin

Executive Director/Air Pollution Control Officer

San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

New Flare

Facility Name: BreitBurn Operating LP

Mailing Address: 515 S Flower Street Engineer: David Torii

Los Angeles, CA 90071-2241 Lead Engineer: Allan Phillips Asur Apr

NOV 2 6 2014

Contact Person: Martha Brock

Telephone: 213-225-5900 x223

Application #(s): S-510-27-2 and '33-0

Project #: 1143169

Deemed Complete: 8/20/14

I. Proposal

BreitBurn Operating LP (BO) has requested an Authority to Construct (ATC) permit for the replacement of the 90 MMBtu/hr flare from permit unit S-510-21 with a 140 MMBtu/hr flare (ATC S-510-33-0).

Also, Permit to Operate (PTO) S-510-27 lists the vapor control system (VCS) that flare S-510-21 serves and that the proposed replacement flare will serve. Therefore, PTO S-510-27 will be revised to indicate that its VCS can route its vapors to the proposed flare.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)					
Rule 2410	Prevention of Significant Deterioration (6/16/11)					
Rule 2520	Federally Mandated Operating Permits (6/21/01)					
Rule 4001	New Source Performance Standards (4/14/99)					
Rule 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 4311	Flares (6/18/09)					
Rule 4801	Sulfur Compounds (12/17/92)					
CH&SC 41700	Health Risk Assessment					
CH&SC 42301.6	School Notice					
D 1 11 D	1 04000 04477 0 III ' F ' 1 10 III A 1/0F0A)					

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 will be located at the Dow Chancelor Lease in the Belridge Oil Field, within the NE/4 of Section 12, Township 28S, Range 20E. The equipment is not located within 1,000

feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

The existing flare serves the facility's fixed roof storage tanks and the vapor recovery system. When produced gas from the storage tanks' headspace does not meet the specifications for sale within the sales gas system, or when the sales gas pipelines is otherwise inaccessible, the flare accepts the produced gas for combustion to control venting of the produced gas. The proposed flare is needed for an anticipated increase in produced gas throughput and will serve the same purpose as the existing flare.

V. Equipment Listing

Pre-Project Equipment Description (see PTOs in Appendix A):

S-510-21-2: 90 MMBTU/HR STANDBY FLARE WITH WASTE GAS VOLUMETRIC FLOW

INDICATOR

S-510-27-1: 1,500 BBL FIXED ROOF WASH TANK WITH VAPOR CONTROL SYSTEM

CONSISTING OF GAS/LIQUID SEPARATOR, GAS BOOT, HEAT

EXCHANGER, COMPRESSOR, SUCTION & DISCHARGE SCRUBBERS SHARED WITH PERMITS S-510-2, '-3, '-7, '-23, '-24, '-25, '-26, '-28, '-29, '-30,

'-31 AND '-32

Proposed ATC:

S-510-27-2: MODIFICATION OF 1,500 BBL FIXED ROOF WASH TANK WITH VAPOR

CONTROL SYSTEM CONSISTING OF GAS/LIQUID SEPARATOR, GAS BOOT, HEAT EXCHANGER, COMPRESSOR, SUCTION & DISCHARGE SCRUBBERS SHARED WITH PERMITS S-510-2, '-3, '-7, '-23, '-24, '-25, '-26,

'-28, '-29, '-30, '-31 AND '-32: ADD FLARE S-510-33 AS A VAPOR

CONTROL DEVICE

S-510-33-0: 140 MMBTU/HR AIR-ASSISTED PRODUCED GAS FLARE SERVING

VAPOR CONTROL SYSTEM LISTED ON S-510-27

Post Project Equipment Description:

Note: PTO S-510-21 will be canceled as a result of this project.

S-510-27-2: 1,500 BBL FIXED ROOF WASH TANK WITH VAPOR CONTROL SYSTEM

CONSISTING OF GAS/LIQUID SEPARATOR, GAS BOOT, HEAT

EXCHANGER, COMPRESSOR, SUCTION & DISCHARGE SCRUBBERS, FLARE S-510-33, SHARED WITH PERMITS S-510-2, '-3, '-7, '-23, '-24, '-25,

'-26, '-28, '-29, '-30, '-31 AND '-32.

S-510-33-0: 140 MMBTU/HR AIR-ASSISTED PRODUCED GAS FLARE SERVING

VAPOR CONTROL SYSTEM LISTED ON S-510-27

VI. Emission Control Technology Evaluation

The flare tip uses multi-jet technology to break up the exiting gas to allow for more fuel/air interaction and increase smokeless flaring. An air plenum directs the air flow provided by the blower into the combustion zone to increase this interaction. The manufacturer guarantees that the tip will provide smokeless performance not to exceed 5% opacity for a total of 5 minutes during 2 consecutive hours.

The manufacturer claims the pilot will stay lit in hurricane force weather conditions with wind speeds greater than 150 mph. The natural gas pilot will be equipped with a Type K thermocouple for continuous monitoring of the pilot status. The automatic pilot ignition and monitoring panel will continuously monitor the pilot and attempt to relight if a pilot failure signal is received.

The VOC combustion efficiency for flares is typically greater than 99%. The gas combusted in the flare is expected to have a very low sulfur content (1.0 gr S/100 scf maximum) as proposed by the applicant.

VII. General Calculations

For Permit S-510-27 (tank and vapor control system)

Pursuant to determination #20 of District FYI 111, allowing permit unit S-510-27's vapor control system to vent to a different permitted disposal device is not an NSR modification to permit unit S-510-27 provided the vapor control system can continue to meet its control efficiency requirement. Replacing flare S-510-21 with flare '33 is not expected to affect the vapor control system's control efficiency. Therefore, replacing the vapor control system's flare is not an NSR modification to permit unit S-510-27 and calculations are not required for S-510-27.

For ATC S-510-33-0 (new flare)

Flare S-510-33 is new a new unit and serves the vapor control system listed on S-510-27. The flare is subject to NSR.

A. Assumptions

- S-510-21's heat input limits are 90 MMBtu/hr and 45,360 MMBtu/year (PTO)
- S-510-33-0's produced gas flow rate is 3,181,818 acf/day and 66,287,787 acf/yr (per applicant)
- Gross heating value of produced gas is 1,056 Btu/scf (per applicant)
- 1 acf produced gas equals 1 scf produced gas
- Sulfur content of produced gas is less than 6.2 gr-S/100 scf (applicant)
- Pilot fuel emissions are negligible (FYI 310, at 65 scf/hr of pilot fuel usage stated by applicant, emission are not expected to exceed 2 lbs/day for any criteria pollutant)
- Molar specific volume of air is 379.5 scf/lb-mole

B. Emission Factors

Pursuant to District FYI 83 the following emission factors from EPA AP-42 section 13.5 <u>Industrial Flares</u> (9/91) represent best data for flares located at oil exploration and production operations, refineries, chemical plants, gas plants, and other petroleum related industries. The subject flare is operated in an oil production operation; therefore, the emission factors from FYI 83 will be used:

	S-510-21 Emission Factors						
	lb/MMBtu	Source					
NO _X	0.068	PTO					
SO _X	0.057	PTO					
PM ₁₀	0.043	PTO					
CO	0.370	PTO					
VOC	0.140	PTO					

	S-510-33-0 Emission Factors							
	lb/MMBtu	Source						
NO _X	0.068	AP-42/FYI-83						
SO _X	0.057	Applicant and PTO S-510-21						
PM ₁₀	0.008*	AP-42/FYI-83-BACT						
CO	0.37	AP-42/FYI-83						
VOC	0.063	AP-42/FYI-83						

^{*}Flare triggers and complies with BACT for PM₁₀; therefore, in accordance with FYI 83, the PM₁₀ emissions factor is equal to 0.008 lb/MMBtu.

C. Calculations

1. Pre-Project Potential to Emit (PE1)

The potential to emit for flare S-510-21 is calculated as follows, and summarized in the table below:

 $PE2_{NOx}$ = (0.068 lb/MMBtu)(90 MMBtu/hr)(24 hr/day) =

= $146.9 \text{ lb NO}_X/\text{day}$

= (0.068 lb/MMBtu)(45,360 MMBtu/year) =

= 3084 lb NO_x/year

PE1 S-510-21					
	Daily Emissions (lb/day)	Annual Emissions (lb/year)			
NO _X	146.9	3,084			
SO _X	123.1	2,586			
PM ₁₀	92.9	1,950			
CO	799.2	16,783			
VOC	302.0	6,350			

2. Post Project Potential to Emit (PE2)

The potential to emit for flare S-510-33-0 is calculated as follows, and summarized in the table below:

PE2_{NOx}

- $= (0.068 \text{ lb/MMBtu})(3,181,818 \text{ scf/day})(1056 \text{ Btu/scf})(MM/10^6)$
- = $228.5 \text{ lb NO}_X/\text{day}$
- $= (0.068 \text{ lb/MMBtu})(66,287,787 \text{ scf/yr})(1056 \text{ Btu/scf})(MM/10^6)$
- = $4,760 \text{ lb NO}_X/\text{year}$

S-510-33-0 PE2						
	Daily Emissions (lb/day)	Annual Emissions (lb/year)				
NO _X	228.5	4,760				
SO _X	191.5	3,990				
PM ₁₀	26.9	560				
CO	1,243.2	25,900				
VOC	211.7	4,410				

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

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

Pre Project	Pre Project Stationary Source Potential to Emit [SSPE1]							
Permit Unit	NO _X	SO _X	PM ₁₀	CO	VOC			
Pelmit Onit	(lb/year)	(lb/year)	(lb/year)	(lb/year)	(lb/year)			
S-510-2								
S-510-3	0	0	0	0	2,628			
S-510-7								
S-510-21	3,084	2,586	1,950	16,783	6,350			
S-510-23	0	0	0	0	256			
S-510-24	0	0	0	0	256			
S-510-25	0	0	0	0	621			
S-510-26	0	0	0	0	256			
S-510-27	0	0	0	0	256			
S-510-28	0	0	0	0	694			
S-510-29	0	0	0	0	621			
S-510-30	0	0	0	0	292			
S-510-31	0	0	0	0	292			
S-510-32	0	0	0	0	730			
SSPE2 _{Permit Unit}	3,084	2,586	1,950	16,783	13,252			
ERC Certificate S-4059-1	0	0	0	0	63			
ERC Certificate S-4057-2	29	0	0	0	0			
ERC Certificate S-4058-3	0	0	0	100	0			
ERC Certificate S-4056-5	0	65	0	0	0			
Pre Project SSPE (SSPE1)	3,113	2,651	1,950	16,883	13,315			

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

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

Post Project Stationary Source Potential to Emit [SSPE2]						
Permit Unit	NO _X	SO _X	PM ₁₀	СО	VOC	
Pennik Onik	(lb/year)	(lb/year)	(lb/year)	(lb/year)	(lb/year)	
S-510-2						
S-510-3	0	0	0	0	2,628	
S-510-7					·	
S-510-21 *	3,084	2,586	1,950	16,783	6,350	
S-510-23	0	0	0	0	256	
S-510-24	0	0	0	0	256	
S-510-25	0	0	0	0	621	
S-510-26	0	0	0	0	256	
S-510-27	0	0	0	0	256	
S-510-28	0	0	0	0	694	
S-510-29	0	0	0	0	621	
S-510-30	0	0	0	0	292	
S-510-31	0	0	0	0	292	
S-510-32	0	0	0	0	730	
ATC S-510-33-0	4,760	3,990	560	25,900	4,410	
SSPE2 _{Permit Unit}	4,760	3,990	560	25,900	11,312	
ERC Certificate S-4059-1	0	0	0	0	63	
ERC Certificate S-4057-2	29	0	0	0	0	
ERC Certificate S-4058-3	0	0	0	100	0	
ERC Certificate S-4056-5	0	65	0	0	0	
Post Project SSPE (SSPE2)	4,789	4,055	560	26,000	11,375	

^{*}canceled as a result of this project

5. Major Source Determination

Rule 2201 Major Source Determination:

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

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

Rule 2201 Major Source Determination (lb/year)							
Cardol Deed Le	NO _X	SO _X	PM ₁₀	PM _{2.5}	со	voc	
SSPE1	3,084	16,783	6,350	6,350	1,950	2,586	
SSPE2	4,760	4,055	560	560	26,000	11,375	
Major Source Threshold	20,000	140,000	140,000	200,000	200,000	20,000	
Major Source?	No	No	No	No	No	No	

Note: PM2.5 assumed to be equal to PM10

As seen in the table above, the facility is not an existing Major Source and is not becoming a Major Source 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)							
NO2 VOC SO2 CO PM PM1						PM10	
Estimated Facility PE before Project Increase	1.5	6.6	1.3	8.4	1.0	1.0	
PSD Major Source Thresholds	250	250	250	250	250	250	
PSD Major Source ? (Y/N)	n	n	n	n	n	n	

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

6. Baseline Emissions (BE)

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

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise.

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

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

7. SB 288 Major Modification

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

Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.

8. Federal Major Modification

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

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Additionally, since the facility is not a major source for PM₁₀ (140,000 lb/year), it is not a major source for PM2.5 (200,000 lb/year).

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

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

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

I. Project Emissions Increase - New Major Source Determination

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

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

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO2	voc	SO2	co	PM	PM10
Total PE from New and Modified Units	2.4	2.2	2.0	13.0	0.3	0.3
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	n	n	n	n	n	n

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

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

Pursuant to determination #20 of District FYI 111, allowing permit unit S-510-27's vapor control system to vent to a different permitted disposal device is not an NSR modification to permit unit S-510-27 provided the vapor control system can continue to meet its control efficiency requirement. Replacing flare S-510-21 with flare '33 is not expected to affect the vapor control system's control efficiency. Therefore, replacing the vapor control system's flare is not an NSR modification to permit unit S-510-27 and a Rule 2201 discussion is not required for S-510-27.

Flare S-510-33-0 is a new unit and is subject to NSR.

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

- 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 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.

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

^{*}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.

As seen in Section VII.C.2 above, the applicant is proposing to install a new flare with a PE greater than 2 lb/day for NO_X , SO_X , PM_{10} , CO, and VOC. BACT is triggered for NO_X , SO_X , PM_{10} , and VOC only since the PEs are greater than 2 lb/day. However BACT is not triggered for CO since the SSPE2 for CO is not greater than 200,000 lb/year, as demonstrated in Section VII.C.5 above.

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

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

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

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

d. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project does not constitute an SB 288 and/or Federal Major Modification for NO_X emissions. Therefore BACT is not triggered for any pollutant.

2. BACT Guideline

BACT Guideline 1.4.2, applies to Waste Gas Flare – Incinerating Produced Gas

3. Top-Down BACT Analysis

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

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

NO_x: air-assisted burner

SO_X: air-assisted burner and pilot light is fired on natural gas PM₁₀: air-assisted burner and pilot light is fired on natural gas

VOC: air-assisted burner

B. Offsets

1. Offset Applicability

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

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

Offset Determination (lb/year)							
NO _X SO _X PM ₁₀ CO V							
SSPE2	4,789	4,055	560	26,000	11,375		
Offset Thresholds	20,000	54,750	29,200	200,000	20,000		
Offsets triggered?	No	No	No	No	No		

2. Quantity of Offsets Required

As seen above, the SSPE2 is not greater than the offset thresholds for all the pollutants; therefore offset calculations are not necessary and offsets will not be required for this project.

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications.
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed, and/or
- d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.
- 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 does not constitute an SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not required.

b. PE > 100 lb/day

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

PE > 100 lb/day Public Notice Thresholds								
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?					
NO _X	228.5	100 lb/day	Yes					
SO _X	191.5	100 lb/day	Yes					
PM ₁₀	26.9	100 lb/day	No					
CO	1,243.2	100 lb/day	Yes					
VOC	211.7	100 lb/day	Yes					

Therefore, public noticing for PE > 100 lb/day purposes is required.

c. Offset Threshold

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

Offset Thresholds					
Pollutant	SSPE1	SSPE2	Offset	Public Notice	
Tollutarit	(lb/year)	(lb/year)	Threshold	Required?	
NO _X	3,113	4,789	20,000 lb/year	No	
SO _X	2,651	3,990	54,750 lb/year	No	
PM ₁₀	1,950	560	29,200 lb/year	No	
CO	16,883	26,000	200,000 lb/year	No	
VOC	13,315	11,375	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	SSPE1	SSPE2	SSIPE	SSIPE Public	Public Notice	
	(lb/year)	(lb/year)	(lb/year)	Notice Threshold	Required?	
NO _x	3,113	4,789	1,676	20,000 lb/year	No	
SO _x	2,651	4,055	1,824	20,000 lb/year	No	
PM ₁₀	1,950	560	-1,390	20,000 lb/year	No	
CO	16,883	26,000	9,117	20,000 lb/year	No	
VOC	13,315	11,375	-1,940	20,000 lb/year	No	

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

e. Title V Significant Permit Modification

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

2. Public Notice Action

As discussed above, public noticing is required for this project for NO_{X_i} CO and VOC emissions in excess of 100 lb/day. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be

published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

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

Proposed Rule 2201 (DEL) Conditions:

- No more than 3,181,818 scf/day nor 66,287,787 scf/yr of gas shall be combusted in flare. [District Rule 2201] N
- Emission rates from the flare shall not exceed any of the following limits: 0.068 lb-NOx/MMBtu (NOx as NO2); 0.057 lb-SOx/MMBtu; 0.008 lb-PM10/MMBtu; 0.37 lb-CO/MMBtu; and 0.063 lb-VOC/MMBtu (VOC as methane). [District Rule 2201]

E. Compliance Assurance

1. Source Testing

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

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

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

- The permittee shall maintain records of the total quantity of produced gas (in scf) combusted in the flare each day. [District Rule 2201] N
- All records shall be maintained and retained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4311] N

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

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

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

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

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

Since this facility's potential emissions do not exceed any major source thresholds of Rule 2201, this facility is not a major source, and Rule 2520 does not apply.

Rule 4001 New Source Performance Standards (NSPS)

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60. However, no subparts of 40 CFR Part 60 apply to flares.

Rule 4101 Visible Emissions

Rule 4101 states that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). The flare is equipped with air assist and is expected to operate without visible emissions dark as, or darker than, Ringelmann 1 or 20% opacity.

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.

An HRA is not required for a project with a total facility prioritization score of less than or equal to one. According to the Technical Services Memo for this project (Appendix C), the total facility prioritization score including this project was less than or equal to one. Therefore, no future analysis is required to determine the impact from this project and compliance with the District's Risk Management Policy is expected.

Discussion of T-BACT

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

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. For natural gas the EPA F-factor (adjusted to 60°F) is 8710 dscf/MMBtu (40 CFR 60 Appendix B).

PM₁₀ Emission Factor: 0.008 lb-PM₁₀/MMBtu Percentage of PM as PM₁₀ in Exhaust: 100%

Exhaust Oxygen (O₂) Concentration:

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

$$GL = \left(\frac{0.008 \ lb - PM}{MMBtu} \times \frac{7,000 \ grain}{lb - PM}\right) / \left(\frac{8,710 \ ft^3}{MMBtu} \times 1.17\right)$$

 $GL = 0.0055 \ grain/dscf < 0.1 \ grain/dscf$

Rule 4301 Fuel Burning Equipment

The purpose of this rule is to limit the emission of air contaminants from fuel burning equipment. Fuel burning equipment is defined in the rule as "any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer."

The purpose of the flare is not to produce heat or power by indirect heat transfer; therefore, Rule 4301 does not apply to this equipment

Rule 4311 Flares

This rule limits VOC and NOx emissions from flares. The facility has a potential to emit less than 10 tons/yr NOx and 10 tons/yr VOCs; therefore, pursuant to section 4.3, is exempt from all requirements of the rule except the record-keeping requirements of Section 6.1.4.

Section 6.1.4 states that facilities claiming an exemption pursuant to Section 4.3 shall record annual throughput, material usage, or other information necessary to demonstrate an exemption under that section. The facility will keep records of annual volumes of gas combusted in the flare to ensure that the facility's NOx and VOC emissions remain below 10 tons/yr. Therefore compliance is expected.

Rule 4801 Sulfur Compounds

The rule limits sulfur compound emission (as SOx) concentrations to no more than 2000 ppmv, measured at the point of discharge. The flare is permitted below this emissions limit. Compliance is expected.

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality Act (CEQA)

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

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

Greenhouse Gas (GHG) Significance Determination

Project specific impacts on global climate change were evaluated consistent with the adopted District policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency.

BreitBurn is not covered by Cap-and-Trade and the flare does not use fuel from a supplier covered by Cap-and-Trade,

The District's engineering evaluation (this document – Appendix E) demonstrates that the project includes Best Performance Standards (BPS) for each class and category of greenhouse gas emissions unit. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15301 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATC S-510-27-2 and '33-0 subject to the permit conditions on the attached draft ATC in **Appendix D**.

X. Billing Information

Annual Permit Fees					
Permit Number	Fee Schedule	Fee Description	Annual Fee		
S-510-27-2	3020-05S-D	63,000 gallon tank	\$75		
S-510-33-0	3020-02-H	140 MMBtu/hr	\$1030		

Appendixes

A: Current PTO(s)

B: BACT Guideline and Top-Down BACT Analysis

C: HRA/AAQA D: Draft ATCs

APPENDIX A Current PTOs

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-510-21-2 EXPIRATION DATE: 11/30/2017

SECTION: NE12 TOWNSHIP: 28S RANGE: 20E

EQUIPMENT DESCRIPTION:

90 MMBTU/HR STANDBY FLARE WITH WASTE GAS VOLUMETRIC FLOW INDICATOR

PERMIT UNIT REQUIREMENTS

- 1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
- 2. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
- Flare may only be used when sales gas system or compressor(s) are inoperable. [District Rule 2201] 3.
- No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
- Emission limits shall not exceed the following: PM10: 0.043 lb/MMBtu, SOx (as SO2): 0.057 lb/MMBtu, NOx (as NO2): 0.068 lb/MMBtu, VOC: 0.140 lb/MMBtu and CO: 0.370 lb/MMBtu. [District Rule 2201]
- Gas consumption in the flare shall not exceed 45,360 MMBtu/year. [District Rule 2201] 6.
- The permittee shall keep accurate records of the annual volumetric flow rate and heating value of gas combusted in the flare for a period of five years, and shall make such records available for District inspection upon request. [District Rule 22011

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

Facility Name: BREITBURN OPERATING LP

Location: LIGHT OIL WESTERN STATIONARY SOURCE, DOW CHANCELOR LEASES-BELRIDGE OIL FIELD, KERN COUNTY, CA 8-510-21-21 Cod 2 2014 12-35PM - TORIO

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-510-27-1

EXPIRATION DATE: 11/30/2017

EQUIPMENT DESCRIPTION:

1,500 BBL FIXED ROOF WASH TANK WITH VAPOR CONTROL SYSTEM CONSISTING OF GAS/LIQUID SEPARATOR. GAS BOOT, HEAT EXCHANGER, COMPRESSOR, SUCTION & DISCHARGE SCRUBBERS SHARED WITH PERMITS S-510-2, '-3, '-7, '-23, '-24, '-25, '-26, '-28, '-29, '-30, '-31 AND '-32

PERMIT UNIT REQUIREMENTS

- No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] 1.
- No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
- Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
- Fugitive VOC emissions from the component leaks associated with this tank and vapor control system shall not exceed 0.7 lb/day. [District Rule 2201]
- Fugitive VOC emissions shall be calculated using the EPA "1995 Protocol for Equipment Leak Emissions Estimates". (Document EPA-453/R-95-017), Table 2-4, Oil and Gas Production Operations Average Emission Factors. [District Rule 22011
- The tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank, and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in leak free condition. The VOC control device shall be either of the following: a vapor return or condensation system that connects to a gas pipeline distribution system, or an approved VOC destruction device the reduces the inlet VOC emissions by at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623]
- Except as otherwise provided on this permit, this tank shall be maintained in a leak-free condition. [District Rule 4623]
- A leak-free condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 parts per million by volume (ppmv), as methane, above background on a portable hydrocarbon detection instrument that is calibrated with methane in accordance with EPA Method 21. [District Rule 4623]
- Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623]
- 10. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 4623, Table 3]
- 11. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 4623, Table 3]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE These terms and conditions are part of the Facility-wide Permit to Operate.

- 12. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take on of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rule 4623, Table 3]
- 13. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 4623, Table 3]
- 14. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rule 4623, Table 3]
- 15. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 4623, Table 3]
- 16. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rule 4623]
- 17. Any component found to be leaking on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rule 4623, Table 3]
- 18. Permittee shall maintain accurate records of the component count for this tank. Permittee shall update such records when new components are approved and installed. [District Rule 2201]
- 19. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date and time of leak detection, and method of detection; 3) Date and time of leak repair, and emission level of recheck after leak is repaired; 4) Method used to minimize the leak to lowest possible level within 8 hours after detection. [District Rules 2201 and 4623]
- 20. Operator shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rules 2201 and 4623]

APPENDIX C BACT Guideline and Top-Down BACT Analysis

Best Available Control Technology (BACT) Guideline 1.4.2 Last Update: 12/31/1998

Waste Gas Flare - Incinerating Produced Gas

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
СО	Steam assisted or Airassisted or Coanda effect burner, when steam unavailable		
NOx	Steam assisted or Airassisted or Coanda effect burner, when steam unavailable		
PM10	Steam assisted or Airassisted or Coanda effect burner, when steam unavailable Pilot Light fired solely on LPG or natural gas.	,	
SOx	Steam assisted or Airassisted or Coanda effect burner, when steam unavailable Pilot Light fired solely on LPG or natural gas.	Precombustion SOx scrubbing system (non-emergency flares only.)	
VOC	Steam assisted or Airassisted or Coanda effect burner, when steam unavailable		

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in s a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

This is a Summary Page for this Class of Source. For background information, see Permit Specific BACT Determinations on <u>Details Page</u>.

Top Down BACT Analysis for NOx and VOC emissions:

Step 1 - Identify All Control Technologies

Steam-assisted, Air-assisted or Coanda effect burner, when steam unavailable (Achieved in Practice)

Step 2 - Eliminate Technologically Infeasible Options

Steam-assisted flare. Steam is not available at the site, i.e. the existing well is not steamed.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Air-assisted or Coanda effect burner, when steam unavailable (Achieved in Practice)

Step 4 - Cost Effectiveness Analysis

Applicant has proposed the one remaining option from Step 1 Air-assisted burner. Therefore, a cost analysis is not required.

Step 5 - Select BACT

The flare has an air-assisted burner. Therefore BACT is satisfied.

Top Down BACT Analysis for PM10 emissions:

Step 1 - Identify All Control Technologies

Steam- or air-assisted with smokeless combustion. Pilot light fired on LPG or natural gas. (Achieved in Practice)

Step 2 - Eliminate Technologically Infeasible Options

None eliminated.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Steam- or air-assisted with smokeless combustion. Pilot light fired on LPG or natural gas. (Achieved in Practice)

Step 4 - Cost Effectiveness Analysis

Applicant has proposed the only option from Step 1 Air-assisted burner. Therefore, a cost analysis is not required.

Step 5 - Select BACT

The flare has an air-assisted burner. Therefore BACT is satisfied.

Top Down BACT Analysis for SOx emissions:

Step 1 - Identify All Control Technologies

Steam- or air-assisted with smokeless combustion. Pilot light fired on LPG or natural gas. (Achieved in Practice)

Pre-combustion SOx scrubbing system (nonemergency flares only)

Step 2 - Eliminate Technologically Infeasible Options

None eliminated.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Pre-combustion SOx scrubbing system (nonemergency flares only)
Steam assisted or air-assisted with smokeless combustion. Pilot light fired on LPG or natural gas. (Achieved in Practice)

Step 4 - Cost Effectiveness Analysis

The District has established a sulfur standard of 1 gr-S/100 dscf (0.00285 lb-SOx/MMBtu) for natural gas (see Rule 2020, Section 6.1.1.1). Therefore, the source is not required to reduce fuel sulfur beyond 1 gr/100 dscf.

Emissions Controlled:

Emissions Controlled = $(0.057 \text{ lb-SOx/MMBtu} - 0.00285 \text{ lb-SOx/MMBtu})(MM/10^6)(66,287,787 acf/yr)*(1056 Btu/ft3) = 3,790 lbs-SOx/yr = 1.9 ton-SOx/yr$

Cost Estimates:

In project S1134653 the following cost information for pre-combustion sulfur scrubbing was provided. The estimated purchase and installation cost of that system was \$84,000. The annual cost of the chemical and associated operations/maintenance/electrical/repairs was expected to be \$21,170 per year.

The amount of sulfur to be removed by the S1134653 system was comparable to a system that would be required for this project; therefore, the costs from project S1134653 are acceptable for use in this project.

14				
Item	Quantity	Unit Price		Total
Separator Vessel	1 ea	\$25,000 /ea	5	25,000
Chemical Lank + Containment	1 ea	\$ 3,000 /ea	5	3,000
Chemical Pump	2 ea	\$ 1,500 /ea	\$	3,000
Piping Material	1 lot	\$ 5,000 /for	5	5,000
Electrical Material	1 lot	\$ 5,000 /101	\$	5,000
Installation	1 101	\$25,000 /101	\$	25,000
Sub-Total			\$	66,000
Contingency	18.4%		\$	12,139
CSO	7.5%		\$	5,860
AFE Total			\$	84,000
Amortized Copex (10 years)			5	13,667 / year
Operating & Maintenance	Quantity	Unit Price		Total
			\$	30 / day
ltem Liquid H2S Scavenger	Quantity 6 th \$ / day	\$ 5.00 /16	\$	
Item Liquid H2S Scavenger Operations / Maintenance	Quantity		\$	30 / day
ltem Liquid H2S Scavenger	Quantity 6 th \$ / day	\$ 5.00 /16	\$	30 / day 10,950 / year

Annualized Capital Cost

The capital cost includes all purchased equipment, taxes, freight, and installation - detailed costs follow.

Total Estimated Capital Cost: \$84,000 (January 16, 2014 estimate in project \$1134653)

Equivalent Annual Capital Cost (Capital Recovery)

$$A = P - (1+i)n$$
 where;

A = Equivalent Annual Control Equipment Capital Cost

P = Present value of the control equipment, including installation cost

i = interest rate (use 10%, or demonstrate why alternate is more representative of the specific operation).

n = equipment life (assume 10 years or demonstrate why alternate is more representative of the specific operation)

Where

P = \$84,000i = 10%

n = 10 years

A = \$13,667/yr

Total annualized cost

= \$21,170/yr + \$13,667/yr

= \$34,837

Cost Effectiveness:

Cost-effectiveness is equal to the annual cost to implement the control strategy divided by the calculated emission reduction.

Cost-Effectiveness = \$34,837/1.9 tons = \$18,335/ton

The cost of sulfur treatment is above the cost-effectiveness threshold of \$18,300, and therefore is eliminated from consideration as BACT.

Step 5 - Select BACT

The flare has a air-assisted burner and pilot light is fired on natural gas. Therefore BACT is satisfied.

APPENDIX D HRA/AAQA

San Joaquin Valley Air Pollution Control District

Risk Management Review

To: David Torii - Permit Services

From: Kyle Melching – Technical Services

Date: October 10, 2014

Facility Name: Breitburn Operating LP

Location: NE/4 Section 12/T28S/R20E

Application #(s): S-510-27-2 & 33-0

Project #: S-1143169

A. RMR SUMMARY

	RMR Summary		
Categories	NG/WG Flare (Unit 33-0)	Project Totals	Facility Totals
Prioritization Score	0.24*	0.24	<1.0
Acute Hazard Index	N/A	N/A	0.00
Chronic Hazard Index	N/A	N/A	0.00
Maximum Individual Cancer Risk (10 ⁻⁸)	N/A	N/A	0.00
T-BACT Required?	No		一支。让我们要
Special Permit Conditions?	No		

^{*}The project passed on prioritization with a score less than 1; therefore, no further analysis was required.

B. RMR REPORT

1. Project Description

Technical Services received a request on October 10, 2014, to perform an Ambient Air Quality Analysis and a Risk Management Review for a 140 MMBtu/hr waste gas/natural gas flare. This flare will be replacing the 90 MMBtu/hr flare from unit -21.

II. Analysis

Toxic emissions for this proposed unit were calculated using 2001 Ventura County's Air Pollution Control District's emission factors for Natural Gas Fired external combustion and on a refinery gas composition analysis from the 2005 report FINAL REPORT Test of TDA's

Direct Oxidation Process for Sulfur Recovery. In accordance with the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905-1, March 2, 2001), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the project was less than 1.0 (see RMR Summary Table); Therefore, no further evaluation is required.

The following parameters were used for the review:

Analysis Parameters (Unit 33-0)					
Source Type	Point	Location Type	Rural		
Stack Height (m)	11.38	Closest Receptor (m)	4267		
Stack Diameter (m)	2.14	Type of Receptor	Business		
Stack Exit Velocity (m/s)	62.84	NG/WG Usage (mmscf/hr)	0.14		
Stack Exit Temperature (K)	1273	NG/WG Usage (mmscf/yr)	1226		

For the AAQA, stack parameter were calculated utilizing District Approved: Flare Modeling Parameter Estimator. The AERMOD model was used, with the parameters and meteorological data for Missouri Triangle to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid.

Technical Services performed modeling for criteria pollutants CO, NOx, SOx and PM₁₀. The emission rates used for criteria pollutant modeling were 51.8 lb/hr and 25,900 lb/yr CO, 9.52 lb/hr and 4,760 lb/yr NOx, 2.52 and 1,260 lb/yr lb/hr SOx, and 1.12 lb/hr and 560 lb/yr PM₁₀.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Diesel ICE	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO _x	Pass'	X	X	X	Pass
SO _x	Pass	Pass	Х	Pass	Pass
PM ₁₀	X	X	X	Pass ²	Pass ²
PM _{2,5}	X	X	X	Pass ²	Pass²

^{*}Results were taken from the attached PSD spreadsheet.

III. Conclusion

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

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

¹The project was compared to the 1-hour NO2 National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures

^{12, 2010} using the District's approved procedures.

The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

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

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

Appendix E BPS Analysis

San Joaquin Valley Unified Air Pollution Control District Best Performance Standard (BPS) x.x.xx

Date: 08/02/2011

Class	VOC Control/Gas Disposal		
Category	Oil and Gas Production, Processi	ng, and Refining	
	1) -Incineration in existing engine, boiler, etc. that creates useful work — provided that equipment is available and practically capable of incinerating vapors (see equipment specific BPS for standards and requirements for new fired equipment) and currently burning fossil fuel; or, -Transfer to Sales Gas Line — provided that access to sales gas line infrastructure is available; or,		
	-Reinjection to Formation – provided that is available.	access to a disposal well	
Percentage Achieved GHG Emission Reduction Relative to Baseline Emissions	The following options supersede the BPS requirements above if equipment listed above is not available; or, b) gas cannot safely transferred to equipment listed above; or, c) used to core emergency gas releases. 2) -Incineration in new Thermal Oxidizer — see equipment spe Thermal Oxidizer BPS for standards and requirements for requipment; or, -Incineration in New Flare with >98% TOC destruction efficient steam assist, air assist when steam is not available, or Coal effect and equipped with non-continuous automatic electronic ballistic ignition; or, -Incineration in Existing Thermal Oxidizer or Flare Gas-Fired Equipment Transfer to Sales Gas Line 100% Pelniection to Formation 100%		
District Project Number	Existing Thermal Oxidizer or Flare S-1103964	0%	
Evaluating Engineer	Kristopher Rickards		
Lead Engineer	Leonard Scandura, P.E.		
Public Notice: Start Date	May 31, 2011		
Public Notice: End Date	June 30, 2011		
Determination Effective Date	August 2, 2011		

Best Performance Standard (BPS) Demonstration of Compliance

The following Best Performance Standards (BPS) (in order of recommendation) are recommend for this class (VOC Control/Gas Disposal) and category (Oil and Gas Production, Processing, and Refining) of equipment/operation:

- Incineration in existing engine, boiler, etc. that creates useful work provided that
 equipment is available and practically capable of incinerating vapors and currently burning
 fossil fuel; or
 - -Transfer to Sales Gas Line provided that access to sales gas line infrastructure is available; or
 - -Reinjection to Formation provided that access to a disposal well is available.

For this location, there is no existing engine, boiler, or other equipment that can incinerate the gas to create useful work; there is no available access to sales gas line infrastructure; and there is no access to a disposal well. Therefore, the above requirements are not available for the operation in this project.

The following supersede the BPS requirements above if: a) equipment listed above is not available; or, b) gas cannot safely be transferred to equipment listed above; or, c) used to control emergency gas releases. As previously mentioned, the equipment listed above is not available; therefore, the following options supersede the BPS requirements listed above.

- 2) -Incineration in new Thermal Oxidizer; or,
 - -Incineration in New Flare with >98% TOC destruction efficiency, steam assist, air assist when steam not available, or Coanda effect and equipped with non-continuous automatic, electronic, or ballistic ignition; or,
 - -Incineration in Existing Thermal Oxidizer or Flare.

The gas from the operation in this project will be incinerated in a new VDD with >98% TOC destruction efficiency; therefore, the project meets the BPS from 2) above. The District-approved BPS is attached for reference.

Appendix F Draft ATCs

San Joaquin Valley Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-510-27-2

LEGAL OWNER OR OPERATOR: BREITBURN OPERATING LP **MAILING ADDRESS:** 515 S FLOWER ST - STE 4800

LOS ANGELES, CA 90071

LOCATION: LIGHT OIL WESTERN STATIONARY SOURCE

DOW CHANCELOR LEASES-BELRIDGE OIL FIELD

KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 1,500 BBL FIXED ROOF WASH TANK WITH VAPOR CONTROL SYSTEM CONSISTING OF GAS/LIQUID SEPARATOR, GAS BOOT, HEAT EXCHANGER, COMPRESSOR, SUCTION & DISCHARGE SCRUBBERS SHARED WITH PERMITS S-510-2, '-3, '-7, '-23, '-24, '-25, '-26, '-28, '-29, '-30, '-31 AND '-32: REPLACE VAPOR CONTROL SYSTEM FLARE S-510-21 WITH FLARE S-510-33

CONDITIONS

- 1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
- 2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
- 3. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
- 4. Collected vapors shall be routed to sales line or incinerated in flare S-510-33. [District Rule 2201]
- 5. Fugitive VOC emissions from the component leaks associated with this tank and vapor control system shall not exceed 0.7 lb/day. [District Rule 2201]
- 6. Fugitive VOC emissions shall be calculated using the EPA "1995 Protocol for Equipment Leak Emissions Estimates" (Document EPA-453/R-95-017), Table 2-4, Oil and Gas Production Operations Average Emission Factors. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Directory APCO

Arnaud Marjollet, Director of Permit Services

- 7. The tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank, and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in leak free condition. The VOC control device shall be either of the following: a vapor return or condensation system that connects to a gas pipeline distribution system, or an approved VOC destruction device the reduces the inlet VOC emissions by at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623]
- 8. Except as otherwise provided on this permit, this tank shall be maintained in a leak-free condition. [District Rule 4623]
- 9. A leak-free condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 parts per million by volume (ppmv), as methane, above background on a portable hydrocarbon detection instrument that is calibrated with methane in accordance with EPA Method 21. [District Rule 4623]
- 10. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623]
- 11. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 4623, Table 3]
- 12. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 4623, Table 3]
- 13. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take on of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rule 4623, Table 3]
- 14. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 4623, Table 3]
- 15. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rule 4623, Table 3]
- 16. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 4623, Table 3]
- 17. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rule 4623]
- 18. Any component found to be leaking on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rule 4623, Table 3]
- 19. Permittee shall maintain accurate records of the component count for this tank. Permittee shall update such records when new components are approved and installed. [District Rule 2201]
- 20. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date and time of leak detection, and method of detection; 3) Date and time of leak repair, and emission level of recheck after leak is repaired; 4) Method used to minimize the leak to lowest possible level within 8 hours after detection. [District Rules 2201 and 4623]

21. Operator shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rules 2201 and 4623]



San Joaquin Valley Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-510-33-0

LEGAL OWNER OR OPERATOR: BREITBURN OPERATING LP

MAILING ADDRESS:

515 S FLOWER ST - STE 4800

LOS ANGELES, CA 90071

LOCATION: LIGHT OIL WESTERN STATIONARY SOURCE

DOW CHANCELOR LEASES-BELRIDGE OIL FIELD

KERN COUNTY, CA

SECTION: NE12 TOWNSHIP: 28S RANGE: 20E

EQUIPMENT DESCRIPTION:

140 MMBTU/HR AIR-ASSISTED PRODUCED GAS FLARE SERVING VAPOR CONTROL SYSTEM LISTED ON S-510-27

CONDITIONS

- Prior to operating the equipment authorized under this Authority to Construct, the Permit S-510-21 shall be surrendered to the District and the associated equipment shall be removed or rendered inoperable. [District Rule 2201]
- {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
- 3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
- {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
- No more than 3,181,818 scf/day nor 66,287,787 scf/yr of gas shall be combusted in flare. [District Rule 2201]
- Emission rates from the flare shall not exceed any of the following limits: 0.068 lb-NOx/MMBtu (NOx as NO2); 0.057 lb-SOx/MMBtu; 0.008 lb-PM10/MMBtu; 0.37 lb-CO/MMBtu; and 0.063 lb-VOC/MMBtu (VOC as methane). [District Rule 2201]
- The flame shall be present at all times when combustible gases are vented through the flares. [District Rule 2201]
- 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 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

APCO Seyed Sadredin, Executive Diffector

Arnaud Marjollet, Director of Permit Services

- 9. The flares shall be operated according to the manufacturer's specifications, a copy of which shall be maintained and made available for District inspection upon request. [District Rule 2201]
- 10. The sulfur content of produced gas combusted in the flare shall be monitored and recorded at least once every calendar quarter. Monitoring of the sulfur content of the produced gas shall not be required if the flares do not operate during that period. Records of the results of monitoring of the produced gas sulfur content shall be maintained. [District Rule 2201]
- 11. Monitoring of the produced gas sulfur content shall be performed using Gas Processors Association Standard 2377; ASTM Method D1072, D3246, D4084, D4810, or D5504; EPA Method 11 or 15; ARB Method 11; a continuous fuel gas monitor that meets the requirements specified in SCAQMD Rule 431.1; or an alternative method approved by the District. [District Rule 2201]
- 12. The net heating value of the gas combusted by the flare shall be calculated pursuant to 40 CFR 60.18(f)(3) or by using EPA Method 18, ASTMD1945, D1946, and ASTM D2382 if published values are not available or cannot be calculated. [District Rule 2201]
- 13. To maintain exemption from District Rule 4311, the facility shall maintain records of annual gas combusted, and/or any other information necessary to demonstrate that the Stationary Source Potential to Emit for all processes at the facility is less than 10.0 tons/year of VOC and less than 10.0 tons/year of NOx. [District Rule 4311]
- 14. The permittee shall maintain records of the total quantity of produced gas (in scf) combusted in the flare each day. [District Rule 2201]
- 15. All records shall be maintained and retained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4311]

