



San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



MAY 22 2017

Ms. Melinda Hicks
Kern Oil & Refining Co
7724 E Panama Lane
Bakersfield, CA 93307

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # S-37
Project # 1162746**

Dear Ms. Hicks:

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

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authority to Construct with a Certificate of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

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

Thank you for your cooperation in this matter.

Sincerely,


Arnaud Marjollet
Director of Permit Services

Enclosures

cc: Tung Le, CARB (w/enclosure) via email
cc: Gerardo C. Rios, EPA (w/enclosure) via email

Seyed Sadredin

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Authority to Construct Application Review

Expansion of Transmix (formerly Solvent) Unit

Facility Name:	Kern Oil & Refining Co.	Date:	4/20/17
Mailing Address:	7724 E. Panama Lane, Bakersfield, CA 93307	Engineer:	Richard Edgehill
Contact Person:	Elisa Rockholt	Lead Engineer:	Richard Karrs
Telephone:	661-845-0761		
Application #(s):	S-37-38-12 and '-149-2		
Project #:	S1162746		
Deemed Complete:	October 7, 2016		

I. Proposal

Kern Oil & Refining Co. (KOR) is applying for an Authority to Construct (ATC) permit to expand the Transmix Unit (S-37-38-10), previously called the Solvent Unit. There will be equipment changes including the installation of new piping and vessels which will increase processing capacity. A new 3.67 MMBtu/hr non-atmospheric (forced draft) heater H-2 will be installed.

Applicant has also requested an administrative change to permit S-37-149. In previously approved project (S1130397), equipment (depropanizer column and reflux drum V-5 and V-6) and their VOC fugitive emissions were to be transferred from S-37-38 to a new LPG recovery unit S-137-149. However, V-5 and V-6 were not physically transferred from S-37-38 to S-37-149. In this project, the S-37-149 permit will be revised ("permit cleanup") to reassign V-5 and V-6 to S-37-38 and correct (lower) the '-149 fugitive emissions limit. This change is considered administrative and therefore, the change to the S-27-149 permit is not a NSR Modification.

Additionally, because S-37-38 heater H-1, is operating in compliance with Rule 4307, as demonstrated by source test, pre- and post-project emissions limits of NO_x, CO, and sulfur are recalculated to reflect these limits. Additionally, the VOC limit for H-1 will also be lowered to the generally accepted AP-42 value for natural gas combustion. Because no physical changes are required to make these changes to the emissions limits, Heater H-1 is not being modified as defined in Rule 2201.

The project results in an increase in NO_x and SO_x emissions from the new heater H-2 triggering BACT, offsets, and public notice.

KOR is a major stationary source with a Title V permit. Kern received their Title V Permit on December 17, 2002. The project is a Federal Major Modification and therefore it is classified as a Title V Significant Modification pursuant to Rule 2520, Section 3.20, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. KOR must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC(s) issued with this project.

Current PTOs S-37-38-10 and '-149- 0 are included in **Attachment I**.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (2/18/16)
Rule 2410	Prevention of Significant Deterioration (June 16, 2011)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)

S-37-149 LPG Recovery Unit is not being modified as defined by 40 CFR Part 60, Subpart A, Section 14 i.e. NSPS consideration is not required.

Subpart GGGa –Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries (and by reference Subpart VV Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry)for which Construction, Reconstruction, or Modification Commenced After November 7, 2006

Subpart JA

Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (04/20/05)
Rule 4102	Nuisance (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4307	Boilers, Steam Generators and Process Heaters – 2.0 MMBtu/hr to 5.0 MMBtu/hr
Rule 4455	Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants (4/20/05)
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 facility is located at 7724 East Panama Lane, Bakersfield, CA 93307, Facility S-37. The facility is not located within 1,000 feet of the outer boundary of any K-12 school. Therefore, pursuant to CH&SC 42301.6, California Health and Safety Code (School Notice), public notification is not required.

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

IV. Process Description

Kern operates a petroleum refining operation engaged in the production of gasoline and various petroleum distillates, including diesel fuel. Kern is proposing to expand the Transmix Unit (formerly referred to as the "Solvent Unit", S-37-38). The material processed by S-37-38 is a mixture of finished petroleum products, primarily gasoline and diesel, generated during the transportation of those products via pipeline. A mixture of two finished products is inherently generated at the interface between batch shipments. The mixture is off-spec for both gasoline and diesel usage. Kern is able to separate the fractions into Trans diesel and Trans naphtha, that can then be further refined into saleable products.

The expansion of the Transmix Unit entails installation of a duplicate system which will double the processing capacity. The number of fugitive emissions components will approximately double. A new 3.67 MMBtu/hr non-atmospheric (forced draft) and refinery fuel gas-fired heater H-2 will be installed.

The process flow diagram is included in **Attachment III**.

V. Equipment Listing

Pre-Project Equipment Description:

PTO S-37-38-10: SOLVENT UNIT INCLUDING V-7 FRACTIONATOR, 1 REFLUX DRUM V-8, AND 3,750,000 BTU/HR GAS FIRED FIRE TUBE HEATER (H-1)

PTO S-37-149-0: 4 MMSCF/DAY LPG RECOVERY UNIT INCLUDING GAS COMPRESSION, MEMBRANE SEPARATION, REFRIGERATION, SOLID PHASE DRYING/ DEHYDRATION, AND FRACTIONATION

Proposed Modification:

ATC S-37-38-12: MODIFICATION OF SOLVENT UNIT INCLUDING V-7 FRACTIONATOR, 1 REFLUX DRUM V-8, AND 3,750,000 BTU/HR GAS FIRED FIRE TUBE HEATER (H-1) MODIFICATION: CHANGE NAME TO TRANSMIX UNIT, ADD 3.67 MMBTU/HR PROCESS

HEATER H-2 AND ADD ACCUMULATOR, CONDENSER, COOLERS, HEAT EXCHANGERS, PUMPS, REBOILERS AND ASSOCIATED PIPING AND COMPONENTS, REASSIGN DEPROPANIZER COLUMN (V-5) AND REFLUX DRUM (V-6) FROM '149, REVISE NOX, SOX, CO LIMITS FOR RULE 4307 COMPLIANCE AND LOWER VOC LIMIT OF HEATER H-1

ATC S-37-149-1: MODIFICATION OF 4 MMSCF/DAY LPG RECOVERY UNIT INCLUDING GAS COMPRESSION, MEMBRANE SEPARATION, REFRIGERATION, SOLID PHASE DRYING/ DEHYDRATION, AND FRACTIONATION: REASSIGN DEPROPANIZER COLUMN (V-5) AND REFLUX DRUM (V-6) PTO ' -38

Post-Project Equipment Description:

S-37-38-12: TRANSMIX UNIT INCLUDING DISTILLATION COLUMNS, CONDENSERS, DRUMS, EXCHANGERS, PUMPS, REBOILERS, 3.75 MMBTU/HR GAS-FIRED FIRE TUBE HEATER (H-1), 3.67 MMBTU/HR GAS-FIRED HEATER (H-2) AND ASSOCIATED PIPING AND COMPONENTS.

S-37-149-1: 4 MMSCF/DAY LPG RECOVERY UNIT INCLUDING GAS COMPRESSION, MEMBRANE SEPARATION, REFRIGERATION, SOLID PHASE DRYING/ DEHYDRATION, AND FRACTIONATION

VI. Emission Control Technology Evaluation

VOC emissions from fugitive component leaks will be minimized with implementation of a leak detection and repair program, as required by Rule 4355.

New Heater H-2 will be equipped with a "Clearsign" ultra-low-NOx burner for NOx control. The unit has guaranteed NOx and CO emissions limits of 9 ppmvd NOx @ 3% O2 and 250 ppmvd CO @ 3% O2, respectively, and is fired on refinery fuel gas.

Manufacturer's information on the Low NOx burner is included in **Attachment IV**.

VII. Emissions Calculations

A. Assumptions

- Facility will operate 24 hours per day, 365 days per year.
- F Factor for Refinery Gas 8710 dscf/MMBtu,
- molecular weight of VOCs, 50 lb/lbmol
- refinery gas heating value 1000 Btu/scf
- Heater H-1 is currently operating in compliance with the Rule 4307 NOx emissions limit of 30 ppmv NOx @ 3% O2 , 400 ppmv CO @ 3% O2, and sulfur content of

combusted gas of 5 gr S/100scf. The revised emissions factor for VOCs of 0.0055 lb/MMBtu is a Generally Accepted Emissions factor as is used for both pre- and post-project emissions pursuant to District Policy APR 1110.

- Heater H-2 is a forced draft unit fired on refinery fuel gas and subject to the Rule 4307 NOx and CO emissions limit of 9 ppmv @ 3% O2 and 400 ppmv @3% O2, respectively. The sulfur content of combusted gas will not exceed 5 gr S/100scf.

Fugitive Emissions

S-37-38 (Transmix Unit)

Updated Component Counts (including V-5 and V-6)

Equipment Type	Pre-project and HAE	V-5, V-6 Counts	Post-Project Counts	% Default Zeros	% Pegged (>10,000 ppmv)	% in Correlation Range	Correlation Screening Value
Valves	151	39	210	50	0.3	49.7	400
Pump seals	6	1	5	50	0	50	1000
Others* (Compressor Seals)	29	13	59	50	0	50	1000
Connectors	156	140	218	50	0	50	400
Flanges	207	33	274	50	0	50	400

*others are sight glasses, manways, a hatch and a meter head (not compressor seals)

For PE1, PE2, and Historical Actual Emissions (HAE) calculations Correlation Equation Method described in the CAPCOA publication *California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities* (February 1999). Table IV-3a CAPCOA - Revised 1995 EPA Protocol Refinery Correlation Equations for Refineries and Marketing Terminals were used.

For use of these emissions factors the % Default Zero, % Pegged, and % in Correlation Range are required. The % pegged value for valves was based on information obtained during the baseline period (2014 and 2015). During the baseline period, there were 0 leaking valves detected in 2014 and 1 leaking gas valve detected in 2015 (0.7% of 151 valves) which, when averaged over the two years, is 0.3%. For the other components, 50% default zero and 50% pegged were assumed. The Correlation Screening Values are the Rule 4455 Minor Leak limits for "Components in Gas/Vapor Service." Note that for the HAE calculation, components from V-5 and V-6 (Column 3 in the above table) were not included. V-5 and V-6 were purged, taken out of service and left out of service and therefore, not inspected at all during the baseline period (applicant email).

Further note that with use of the HAE % Default Zero, % Pegged, and % in Correlation Range values calculate PE1 and PE2, PE 1 = HAE. To ensure significant compliance margin for PE2, the estimated (as-built) components counts include a 20% safety factor.

S-37-149

Emissions calculated previously in project 1130397 include emissions from V-5 and V-6. Post- project emissions are pre-project emissions minus emissions from V-5 and V-6.

Fugitive emissions calculations are included in **Attachment V**.

B. Emission Factors

Correlation Equation Method described in the CAPCOA publication *California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities* (February 1999). Table IV-3a CAPCOA - Revised 1995 EPA Protocol Refinery Correlation Equations for Refineries and Marketing Terminals.

S-37-38 H-1 (Pre-Project)

Pollutant	Emission Factor (EF2)	Source
NOx	0.036 lb/MMBtu	Rule 4307
SOx	0.014* lb/MMBtu	"
PM10	0.06 lb/hr/3.75 MMBtu/hr = 0.016 lb/MMbtu	lb/hr limit on current PTO
CO	0.3 lb/MMBtu**	Rule 4307
VOC	0.0055 lb/MMBtu	AP-42

*5 gr S/100 scf x lb/7000 gr x 64 lb SOx/32 lb S x scf/0.001 MMBtu
= 0.014 lb/MMBtu

** (400 ft³/10⁶ ft³ @ 3% O₂ x [(20.9 - 0)/(20.9 - 3)] ft³ @3% O₂)/ ft³ @ 0% O₂
x 8,710 ft³ @ 0% O₂/MMBtu x (28 lb/lbmol)(lbmol/379.5 scf)
= 0.3 lb/MMBtu

S-37-38 H-1 (Post-Project)

Pollutant	Emission Factor (EF2), lb/MMBtu	Source
NO _x	0.036	Rule 4307
SO _x	0.014*	"
PM ₁₀	0.016	Current PTO 0.06 lb/hr/3.75 lb/MMBtu
CO	0.3**	Rule 4307 limit
VOC	0.0055	AP-42

S-37-38 H-2

Pollutant	Post-Project Emission Factors (EF2)		Source
NO _x	0.011 lb-NO _x /MMBtu	9 ppmvd NO _x (@ 3%O ₂)	Rule 4307 for forced draft units
SO _x	0.014 lb-SO _x /MMBtu		5 grS/100 scf, Rule 4307
PM ₁₀	0.005 lb-PM ₁₀ /MMBtu		Manufacturer's data
CO	0.188 lb-CO/MMBtu*	250 ppmvd CO (@ 3%O ₂)	"
VOC	0.0055 lb-VOC/MMBtu**	4.1 ppmvd VOC (@ 3% O ₂)	"

* $(250 \text{ ft}^3/10^6 \text{ ft}^3 @ 3\% \text{ O}_2 \times [(20.9 - 0)/(20.9 - 3)] \text{ ft}^3 @ 3\% \text{ O}_2) / \text{ft}^3 @ 0\% \text{ O}_2$
 $\times 8,710 \text{ ft}^3 @ 0\% \text{ O}_2/\text{MMBtu} \times (28 \text{ lb/lbmol})(\text{lbmol}/379.5 \text{ scf}) = \underline{0.188 \text{ lb/MMBtu}}$

** $(4.1 \text{ ft}^3/10^6 \text{ ft}^3 @ 3\% \text{ O}_2 \times [(20.9 - 0)/(20.9 - 3)] \text{ ft}^3 @ 3\% \text{ O}_2) / \text{ft}^3 @ 0\% \text{ O}_2$
 $\times 8,710 \text{ ft}^3 @ 0\% \text{ O}_2/\text{MMBtu} \times (50 \text{ lb/lbmol})(\text{lbmol}/379.5 \text{ scf}) = \underline{0.0055 \text{ lb/MMBtu}}$

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California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-3a (Feb 1999), CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals.

C. Calculations

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

S-37-38

Fugitive VOC: 5.9 lb/day, 2,165 lb/yr (see calculations in **Attachment V**).

Heater H-1

Pollutant	Daily PE1			
	EF1 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE1 (lb/day)
NO _x	0.036	3.75	24	3.2
SO _x	0.01400	3.75	24	1.3
PM ₁₀	0.0160	3.75	24	1.4
CO	0.300	3.75	24	27.0
VOC	0.0055	3.75	24	0.5

Pollutant	Annual PE1			
	EF1 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE1 (lb/year)
NO _x	0.036	3.75	8,760	1,183
SO _x	0.01400	3.75	8,760	460
PM ₁₀	0.0160	3.75	8,760	526
CO	0.300	3.75	8,760	9,855
VOC	0.0055	3.75	8,760	181

S-37-38 PE1		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO _x	3.2	1,183
SO _x	1.3	460
PM ₁₀	1.4	526
CO	27.0	9,855
VOC	0.5	181
	+ 5.9 (fugitives)	+ 2,165 (fugitives)
	= 6.4	= 2,346

S-37-149 (PE2 for project S1130397)

PE1 - VOC		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
PE1	27.7	10,103

2. Post Project Potential to Emit, (PE₂)

S-37-38

Fugitive VOC = 6.8 lbs/day, 2,473 lb/yr (see calculations in **Attachment V**).

- $PE_2 = EF \text{ (lb/MMBtu)} \times \text{Heat Input (MMBtu/hr)} \times \text{Op. Sched. (hr/day or hr/year)}$

Heater H-1

Pollutant	Daily PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE2 (lb/day)
NO _x	0.036	3.75	24	3.2
SO _x	0.01400	3.75	24	1.3
PM ₁₀	0.0160	3.75	24	1.4
CO	0.300	3.75	24	27.0
VOC	0.0055	3.75	24	0.5

Pollutant	Annual PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE2 (lb/year)
NO _x	0.036	3.75	8,760	1,183
SO _x	0.01400	3.75	8,760	460
PM ₁₀	0.0160	3.75	8,760	526
CO	0.300	3.75	8,760	9,855
VOC	0.0055	3.75	8,760	181

Heater H-2

Pollutant	Daily PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE2 (lb/day)
NO _x	0.011	3.67	24	1.0
SO _x	0.01400	3.67	24	1.2
PM ₁₀	0.0050	3.67	24	0.4
CO	0.188	3.67	24	16.6
VOC	0.0055	3.67	24	0.5

Pollutant	Annual PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE2 (lb/year)
NO _x	0.011	3.67	8,760	354
SO _x	0.01400	3.67	8,760	450
PM ₁₀	0.0050	3.67	8,760	161
CO	0.188	3.67	8,760	6,044
VOC	0.0055	3.67	8,760	177

S-37-38

Post-Project Potential to Emit – PE2		
Permit unit	Daily Emissions (lb/day) H-1 + H-2 + fugitives	Annual Emissions (lb/Year)
NO _x	3.2 + 1.0 = 4.2	1,183 + 354 = 1,537
SO _x	1.3 + 1.2 = 2.5	460 + 450 = 910
PM ₁₀	1.4 + 0.4 = 1.8	526 + 161 = 687
CO	27.0 + 16.6 = 43.6	9,855 + 6,044 = 15,899
VOC (S-37-38-10)	0.5 (H-1) + 0.5 (H-2) + 6.8 (fugitives) = 7.8	181 + 177 + 2,473 = 2,831

S-37-149

PE2 – VOC		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
Project 1162746	27.7	10,103
V-5 and V-6	-1.7	-630
Total	26.0	9,473

S-37-38

Δ PE (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
PE1	1,183	460	526	9,855	2,346
PE2	1,537	910	687	15,899	2,831
Δ PE	354	450	161	6044	485

S-37-149

Δ PE (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
PE1	0	0	0	0	10,103
PE2	0	0	0	0	9,473
Δ PE (V-5, V-6 fugitives)	0	0	0	0	-630

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

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

Pursuant to Section 4.9 of District Rule 2201, the pre-project stationary source Potential to Emit (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 that have occurred at the source, and which have not been used on-site.

The following SSPE1 totals were obtained from SJVAPCD Project S1161937 (last project finalized in PAS):

SSPE1 (lb/year)*					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE1	151,842	93,406	38,726	885,355	391,263

*does not include ERCs

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

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

SSPE2 (lb/year)*					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE1	151,842	93,406	38,726	885,355	391,263
'-38 ΔPE	354	450	161	6044	485
'-149 ΔPE	0	0	0	0	-630
SSPE2	152,196	93,856	38,887	891,399	391,118

*does not include ERCs

5. Major Source Determination

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

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

Rule 2201 Major Source Determination (lb/year)						
	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO	VOC
SSPE1	151,842	93,406	38,726	38,726	885,355	391,263
SSPE2	152,196	93,856	38,887	38,887	891,399	391,118
Major Source Threshold	20,000	140,000	140,000	200,000	200,000	20,000
Major Source?	Yes	No	No	No	Yes	Yes

Note: PM2.5 assumed to be equal to PM10

This source is an existing Major Source for NO_x, CO, and VOC and will remain a Major Source for these pollutants. The source is not becoming a new major source for any pollutants.

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is 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	PM10
Estimated Facility PE before Project Increase	75.9	195.6	46.7	442.7	19.4	19.4
PSD Major Source Thresholds	100	100	100	100	100	100
PSD Major Source ? (Y/N)	N	Y	N	Y	N	N

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

6. Baseline Emissions (BE)

a. Annual BE

The annual BE is performed pollutant by pollutant for each unit within the project to determine the amount of offsets required, where necessary, when the SSPE1 is greater than the offset threshold. For this project the annual BE will be performed to calculate quarterly Baseline Emissions (QBE)

BE = Pre-project Potential to Emit 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 Section 3.8 of District Rule 2201.

As shown in Section VII.C.5 above, the facility is a Major Source for VOCs. BE for NO_x, SO_x, PM₁₀, and CO are not relevant as the S-37-38 solvent heater is not being modified.

S-37-38

S-37-38 is not a Highly Utilized, Fully-Offset, or Clean Emissions Unit and therefore

BE for VOCs = HAE

HAE = 2,165 lb/yr (**Attachment V**)

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 CO, NO_x and VOC 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	354	50,000	No
SO _x	450	80,000	No
PM ₁₀	161	30,000	No
VOC	2,821	50,000	No

*S-37-38 H-2 emissions + fugitive emissions

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

8. Federal Major Modification Determination

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.

For S-37-38 fugitive emissions (existing emissions units),
the increase in emissions is calculated as follows.

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

Where: PAE = Projected Actual Emissions, and
BAE = Baseline Actual Emissions

For the existing Transmix Unit, the emissions increase is calculated as follows:

BAE = HAE emissions as calculated above
PAE = Production rates from the Transmix unit are expected to double within the next 5 years, as a result of this expansion. Projected actual emissions are expected to be equal to PE2.

PE2 (VOCs) = 2,473 lb/year

BAE (VOCs) = 2,165 lb/year

VOC Emissions increase = 308 lb/yr

For H-2 emissions (new emissions unit) , the increase in emissions is equal to the PE2 for NO_x, SO_x, PM₁₀, and VOC.

The project's combined total emission increases are compared to the Federal Major Modification Thresholds in the following table.

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions Increases (lb/yr)*	Thresholds (lb/yr)	Federal Major Modification?
NO _x	354	0	Y
VOC	308 (fugitives) + 177 (H2) = 485	0	Y
PM ₁₀	<0.5~0*	30,000	N
PM _{2.5}	<0.5~0*	20,000	N
SO _x	450	80,000	N

*PM₁₀ (PM_{2.5}) round to zero as they are less than 0.5 lb/day pursuant to District policy.

Since there is an increase in NO_x and VOC emissions, this project constitutes a Federal Major Modification for NO_x and VOC.

Federal Offset Quantities:

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

Only list pollutants for which the project is a Federal Major Modification and delete other pollutants. The calculated Federal offset quantity is entered into the Major Modification tracking spreadsheet under the heading "Federal Offset Quantity"

NO _x		Federal Offset Ratio		1.5
Permit No.	Actual Emissions (lb/year)	Potential Emissions (lb/year)	Emissions Change (lb/yr)	

S-37-38	0	354	354
Net Emission Change (lb/year):			354
Federal Offset Quantity: (NEC * 1.5)			531

VOCs		Federal Offset Ratio		1.5
Permit No.	Actual Emissions (lb/year)	Potential Emissions (lb/year)	Emissions Change (lb/yr)	
S-37-38	0	485	485	
Net Emission Change (lb/year):			485	
Federal Offset Quantity: (NEC * 1.5)			728	

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

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

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10
- Sulfuric acid mist
- Hydrogen sulfide (H2S)
- Total reduced sulfur (including H2S)
- Reduced sulfur compounds

I. Project 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 Units vs PSD Significant Emission Increase Thresholds

As a screening tool, the post-project potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if the total potentials to emit from all new and modified units are below the applicable thresholds, no further 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 Units	0.2	0.2	0	0.1	0.1
PSD Significant Emission Increase Thresholds	40	40	100	25	15
PSD Significant Emission Increase?	N	N	N	N	N

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 Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

QNEC = PE2 - BE, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
 PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
 BE = Baseline Emissions (per Rule 2201) for each emissions unit, lb/qtr.

Using the values in Sections VII.C.2 and VII.C.6 in the evaluation above, quarterly PE2 and quarterly BE can be calculated as follows:

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Quarterly Net Emissions Change (QNEC) (lbs/year)					
	NO2	SOx	PM10	CO	VOC
$\Delta PE(lb/yr)$	354	450	161	6044	485
$QNEC = \Delta PE/4$	88.5	112.5	40.25	1511	121.25

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Quarterly Net Emissions Change (QNEC) (lbs/year)					
	NO2	SOx	PM10	CO	VOC
$\Delta PE(lb/yr)$	0	0	0	0	-630
$QNEC = \Delta PE/4$	0	0	0	0	-157.5

VIII. Compliance

Rule 2201 - New and Modified Stationary Source Review Rule

The change to heater H-1 requires for compliance with Rule 4307 requires no physical modifications and does not meet the following criteria for a Modification, as defined in Section 3.26, and is therefore not subject to this rule.

- Any change in hours of operation, production rate, or method of operation of an existing emissions unit, which would necessitate a change in permit conditions.
- Any structural change or addition to an existing emissions unit which would necessitate a change in permit conditions. Routine replacement shall not be considered to be a structural change.
- An increase in emissions from an emissions unit caused by a modification of the Stationary Source when the emissions unit is not subject to a daily emissions limitation.
- Addition of any new emissions unit which is subject to District permitting requirements.
- A change in a permit term or condition proposed by an applicant to obtain an exemption from an applicable requirement to which the source would otherwise be subject.

S-37-38 Equipment Other than H-1 (not being modified)

A. BACT

1. BACT Applicability

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

- a) Any new emissions unit with a potential to emit exceeding two pounds per day,
- b) The relocation from one stationary source to another of an existing emissions unit with a potential to emit exceeding two pounds per day, and/or
- c) Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day.
- d) When a Major Modification is triggered for a modification project at a facility that is a Major Source.

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

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

Heater H-2 is a new emissions unit. The increase in CO emissions from H-2 exceeds 2 lb/day and source S-37 is a major source. Therefore BACT for new emissions units is triggered for CO. PE2 is less than 2 lb/day for NO_x, SO_x, PM₁₀, and VOC emissions and BACT is not triggered for these air contaminants.

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

S-37-38 fugitive emissions

$$\text{AIPE} = \text{PE2} - \text{HAPE}$$

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)

$$\text{HAPE} = \text{PE1} \times (\text{EF2}/\text{EF1})$$

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

$$AIPE = PE2 - (PE1 * (EF2 / EF1))$$

$$EF1 = EF2$$

$$\begin{aligned} AIPE &= 6.8 - (5.9 * (1)) \\ &= 0.9 \text{ lb/day} \end{aligned}$$

As AIPE does not exceed 2 lb/day, BACT is not triggered for modification purposes.

d. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project constitutes a Federal Major Modification for NOx and VOC emissions. Therefore BACT is triggered for all emissions units for NOx and VOC.

2. BACT Guideline

Fugitive Emissions

The following BACT Guidelines (see **Attachment VII**) are applicable:

7.2.2 Petroleum Refining – Valves and Connectors

7.2.3 Petroleum Refining – Pumps and Compressor Seals

Heater H-2

There are no current BACT Guidelines applicable to the proposed heater H-2. A project specific BACT analysis is performed for proposed heater H-2.

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 VIII**), BACT has been satisfied with the following:

For new fugitive emissions components (valves, connectors, pump and compressor seals) the following is required:

A leak shall be defined as a reading of methane, in excess of 100 ppmv for valves and connectors and in excess of 500 ppmv for pump and compressor seals above background when measured per EPA Method 21 and an Inspection and Maintenance Program pursuant to District Rule 4455. [District Rule 2201] Y

Heater H-2

NO_x: 9 ppmvd @ 3% O₂ (forced draft unit)

CO: 250 ppmv @ 3% O₂

VOC: gaseous fuel

B. Offsets

1. Offset Applicability

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the post-project stationary source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The following table compares the post-project facility-wide annual emissions in order to determine if offsets will be required for this project.

Offset Applicability			
Pollutant	SSPE2 (lb/yr)	Offset Threshold Levels (lb/yr)	Offsets Calculations Required?
NO _x	152,196	20,000	Yes
SO _x	93,856	54,750	Yes
PM10	38,887	29,200	Yes
CO	891,399	200,000	Yes
VOC	391,118	20,000	Yes

2. Quantity of Offsets Required

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

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

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

Where,

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

BE = Baseline Emissions, (lb/year)

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

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

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Offsets calculations are required for the increase in fugitive emissions and the new emissions of NO_x, SO_x, PM10, CO, and VOCs from new heater H-2 .

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

There are no increases in cargo carrier emissions; therefore offsets can be determined as follows:

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

NO_x

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

PE2 (NO_x) = 354 lb/year

BE (NO_x) = 0 lb/year

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

$$\begin{aligned}\text{Offsets Required (lb/year)} &= ([354 - 0] + 0) \times 1.5 \\ &= 531 \text{ lb NO}_x/\text{year}\end{aligned}$$

$$\text{Quarterly offsets} = 132.75 \text{ lb NO}_x/\text{qtr}$$

Note that, in the calculation of quarterly offset quantities resulting in fractional pounds per quarter, the values were adjusted to whole numbers and redistributed as follows (District policy APR 1010):

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

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

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
132	133	133	133

Applicant proposes to use the following ERCs for NO_x which has been reserved for the project as described below.

Certificate	Q1	Q2	Q3	Q4
N-878-2	24	19	32	24
N-879-2	108	114	101	109
Total	132	133	133	133

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

SO_x

$$\text{PE2 (SO}_x\text{)} = 450 \text{ lb/year}$$

$$\text{BE (SO}_x\text{)} = 0 \text{ lb/year}$$

The ERCs proposed are for on-site reductions and therefore the correct offset ratio is 1:1.

$$\begin{aligned}\text{Offsets Required (lb/year)} &= ([450 - 0] + 0) \times 1.0 \\ &= 450 \times 1.0\end{aligned}$$

= 450 lb SOx/year

Quarterly offsets = 112.5 lb SOx/qtr

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

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
112	112	113	113

Applicant proposes to use the following ERCs for SOx which has been reserved for the project as described below.

Certificate	Q1	Q2	Q3	Q4
S-2387-5	7500	7500	7500	7500

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

PM10

No offsets are required pursuant to APR 1130 as the PE2 for H-2 is less than 0.5 lb/day.

VOCs

PE2 (VOCs) = 2,473 lb/year

BE (VOCs) = HAE = 2,165 lb/year

ICCE = 0 lb/year

Offsets Required (lb/year) = $([2,473 - 2,165] + 0) \times 1.5$
= 462 lb/yr

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

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
115	115	116	116

Applicant proposes to use the following ERCs for VOC which has been reserved for the project as described below.

Certificate	Q1	Q2	Q3	Q4
S-4809-1	1,000	1,000	1,000	1,000

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

CO

PE2 (CO) = 6044 lb/year
BE (CO) = 0 lb/year

Notwithstanding the above, Section 4.6.1 of Rule 2201 states that emissions offsets are not required for increases in carbon monoxide in attainment areas provided the applicant demonstrates to the satisfaction of the APCO that the Ambient Air Quality Standards are not violated in the areas to be affected, and such emissions will be consistent with Reasonable Further Progress, and will not cause or contribute to a violation of Ambient Air Quality Standards. The District performed an Ambient Air Quality Analysis and determined that this project will not result in or contribute to a violation of an Ambient Air Quality Standard for CO (see **Attachment IX**). Therefore, CO offsets are not required for this project.

Proposed Rule 2201 (offset) Conditions:

- *Prior to operating equipment under this Authority to Construct, permittee shall surrender NO_x emission reduction credits for the following quantity of emissions: 1st quarter – 132 lb, 2nd quarter – 133 lb, 3rd quarter – 133 lb, and fourth quarter – 133 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/28/16) for the ERC specified below. [District Rule 2201]*
- *Prior to operating equipment under this Authority to Construct, permittee shall surrender SO_x emission reduction credits for the following quantity of emissions: 1st quarter – 112 lb, 2nd quarter – 112 lb, 3rd quarter – 113 lb, and fourth quarter – 113 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/28/16) for the ERC specified below. [District Rule 2201]*
- *Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter – 115 lb, 2nd quarter – 115 lb, 3rd quarter – 116 lb, and fourth quarter – 116 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/28/16) for the ERC specified below. [District Rule 2201]*
- *ERC Certificate Numbers N-878-2, N-879-2, S-4809-1, and S-2387-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]*

C. Public Notification

1. Applicability

Public noticing is required for:

- a) New Major Sources, Federal Major Modifications, and SB 288 Major Modifications.
- b) Applications which include a new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one affected pollutant;
- c) Modifications that increase the Stationary Source Potential to Emit (SSPE1) from a level below the emissions offset threshold level to a level exceeding the emissions offset threshold level for one or more pollutants;
- d) New Stationary Sources with post-project Stationary Source Potential to Emit (SSPE2) exceeding the emissions offset threshold level for one or more pollutants;
- e) Any permitting action resulting in a Stationary Source Project Increase in Permitted Emissions (SSIPE) exceeding 20,000 pounds per year for any one pollutant.

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 Sources.

As demonstrated in VII.C.7, this project does constitute a Federal Major Modification; therefore public noticing for Major Modifications is required for this project.

b) New Emissions Unit with PTE > 100 lbs during any one day

As demonstrated in VII.C.7, this project does not have a new emissions unit with a Potential To Emit greater than 100 pounds during any one day for any one affected pollutant. Therefore public noticing for PTE greater than 100 lbs is not required for this project.

c) Modification that increases SSPE1 to a level exceeding Offset Threshold levels.

Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold (lb/year)	Public Notice Required?
NO _x	151,842	152,196	20,000	No
SO _x	93,406	93,856	54,750	No
PM ₁₀	38,726	38,887	29,200	No
CO	885,355	891,399	200,000	No
VOC	391,263	391,118	20,000	No

The SSPE1 exceeded the Offset Threshold levels for all affected pollutants prior to the increase from this project.

d) New Stationary Source with SSPE2 Exceeding Offset Threshold(s)

This is not a new Stationary Source, public noticing is not triggered for this reason.

e) SSIPE > 20,000 lb/yr

The SSIPE (NEC) is calculated and shown as follows:

$$\text{SSIPE} = \text{SSPE2} - \text{SSPE1}$$

Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice					
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	SSIPE (lb/year)	Offset Threshold (lb/year)	Public Notice Required?
NO _x	151,842	152,196	354	20,000	No
SO _x	93,406	93,856	450	54,750	No
PM ₁₀	38,726	38,887	161	29,200	No
CO	885,355	891,399	6,044	200,000	No
VOC	391,263	391,118	-145	20,000	No

As shown in the above table, the SSIPE for this project does not exceed the 20,000 lb/yr public notice threshold. Therefore, public noticing is not required for SSIPE purposes.

2. Public Notice Action

As discussed above, this project is a federal major modification and therefore public noticing is required for this project.

D. Daily Emissions Limits (DEL)

Daily Emission Limits, DELs and other enforceable conditions are required by section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per sections 3.15.1 and 3.15.2, 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 Conditions for S-37-38:

Heater H-1 shall not be fired at greater than 3.75 MMBtu/hr heat input rate. [District Rule 2201] Y

Heater H-2 shall not be fired at greater than 3.67 MMBtu/hr heat input rate. [District Rule 2201] Y

Emissions from the natural gas-fired heater H-1 shall not exceed any of the following limits: 30 ppmvd NOx @ 3% O2 (equivalent to 0.036 lb-NOx/MMBtu), 0.005 lb-PM10/MMBtu, 400 ppmvd CO @ 3% O2 (equivalent to 0.3 lb-CO/MMBtu), or 0.0055 lb-VOC/MMBtu. [District Rule 2201] Y

Emissions from the natural gas-fired heater H-2 shall not exceed any of the following limits: 9 ppmvd NOx @ 3% O2 (equivalent to 0.011 lb-NOx/MMBtu), 0.005 lb-PM10/MMBtu, 250 ppmvd CO @ 3% O2 (equivalent to 0.188 lb-CO/MMBtu), or 0.0055 lb-VOC/MMBtu. [District Rule 2201] Y

PM10 emission rate from heater H-1 shall not exceed 0.06 lb/hr. [District NSR Rule] Y

Gas combusted by heater H-1 and H-2 shall contain no more than 5 gr S/100scf. [District Rule 4307] Y

Emissions from fugitive emissions components shall not exceed 6.8 lb/day. [District Rule 2201] Y

E. Compliance Assurance

The following measures shall be taken to ensure continued compliance with District Rules:

1. Source Testing

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

Source testing for NO_x and CO is required within 60 days of startup for compliance with Rule 2201 is required for heater H-2. Heater H-1 has recently been source tested..

Source testing to measure NO_x and CO emissions from heater H-2 shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306, and 4307] Y

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Record Keeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201.

Proposed Condition for S-37-38:

Permittee shall maintain accurate component count and emissions calculated using the Correlation Equation Method described in the CAPCOA publication California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities (February 1999). Table IV-3a CAPCOA - Revised 1995 EPA Protocol Refinery Correlation Equations for Refineries and Marketing Terminals. [District Rule 2201] Y

Continued Compliance is expected.

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 AAQA analysis is included in **Attachment IX**.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Title I 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 Title I modification, therefore this requirement is applicable. KOR's compliance certification is included in **Attachment X**.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to authorize an organic liquid transfer operation.

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

Rule 2410 Prevention of Significant Deterioration

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

Rule 2520 Federally Mandated Operating Permits

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

The project is Federal Major Modification and therefore is also a Title V Significant Modification. As discussed above, the facility has applied for a Certificate of Conformity (COC); therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The Title V Compliance Certification form is included in **Attachment X**.

Rule 4001 New Source Performance Standards (NSPS)

Subpart GGGa (VVa)

The facility is currently in compliance with Subpart GGGa (VVa). The requirements are included on the facility- wide PTO. The project is not expected to change the compliance status and therefore continued compliance is expected.

Subpart Ja

§60.100a Applicability, designation of affected facility, and reconstruction.

(a) The provisions of this subpart apply to the following affected facilities in petroleum refineries: fluid catalytic cracking units (FCCU), fluid coking units (FCU), delayed coking units, fuel gas combustion devices (including process heaters), flares and sulfur recovery plants.

Subpart Ja includes requirements for fuel gas combustion devices defined as *"any equipment, such as process heaters and boilers, used to combust fuel gas. For the purposes of this subpart, fuel gas combustion device does not include flares or facilities in which gases are combusted to produce sulfur or sulfuric acid."* It doesn't have to be a flare or a sulfur recovery plant to be subject to the regulation.

§60.104 Emissions limitations.

(a) No owner or operator subject to the provisions of this subpart shall:

(1) Burn in any fuel gas combustion device any fuel gas that contains hydrogen sulfide (H_2S) in excess of 230 mg/dscm (0.10 gr/dscf).

§60.104 Standards for sulfur oxides.

(3) For fuel gas combustion devices subject to §60.104(a)(1), either an instrument for continuously monitoring and recording the concentration by volume (dry basis, zero percent excess air) of SO_2 emissions into the atmosphere or monitoring as provided in paragraph (a)(4) of this section). The monitor shall include an oxygen monitor for correcting the data for excess.

(KOR is opting for (a)(4) see below)

(4) Instead of the SO_2 monitor in paragraph (a)(3) of this section for fuel gas combustion devices subject to §60.104(a)(1), an instrument for continuously monitoring and recording the concentration (dry basis) of H_2S in fuel gases before being burned in any fuel gas combustion device.

(KOR has a CEM monitoring the H_2S in fuel gases, see permit S-37-78)

(i) The span value for this instrument is 425 mg/dscm H_2S .

(ii) Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H₂S in the fuel gas being burned.

(iii) The performance evaluations for this H₂S monitor under §60.13(c) shall use Performance Specification 7. Method 11, 15, 15A, or 16 shall be used for conducting the relative accuracy evaluations.

(iv) The owner or operator of a fuel gas combustion device is not required to comply with paragraph (a)(3) or (4) of this section for fuel gas streams that are exempt under §60.104(a)(1) and fuel gas streams combusted in a fuel gas combustion device that are inherently low in sulfur content. Fuel gas streams meeting one of the requirements in paragraphs (a)(4)(iv)(A) through (D) of this section will be considered inherently low in sulfur content. If the composition of a fuel gas stream changes such that it is no longer exempt under §60.104(a)(1) or it no longer meets one of the requirements in paragraphs (a)(4)(iv)(A) through (D) of this section, the owner or operator must begin continuous monitoring under paragraph (a)(3) or (4) of this section within 15 days of the change.

(e) For the purpose of reports under §60.7(c), periods of excess emissions that shall be determined and reported are defined as follows:

NOTE: All averages, except for opacity, shall be determined as the arithmetic average of the applicable 1-hour averages, e.g., the rolling 3-hour average shall be determined as the arithmetic average of three contiguous 1-hour averages.

(3) Sulfur dioxide from fuel gas combustion.

(i) All rolling 3-hour periods during which the average concentration of SO₂ as measured by the SO₂ continuous monitoring system under §60.105(a)(3) exceeds 20 ppm (dry basis, zero percent excess air); or

(ii) All rolling 3-hour periods during which the average concentration of H₂S as measured by the H₂S continuous monitoring system under §60.105(a)(4) exceeds 230 mg/dscm (0.10 gr/dscf).

(KOR will comply with this option, it correlates with 60.105(a)(4))

§60.105 Monitoring of emissions and operations.

(a) Continuous monitoring systems shall be installed, calibrated, maintained, and operated by the owner or operator subject to the provisions of this subpart as follows:

(3) For fuel gas combustion devices subject to §60.104(a)(1), either an instrument for continuously monitoring and recording the concentration

by volume (dry basis, zero percent excess air) of SO₂ emissions into the atmosphere or monitoring as provided in paragraph (a)(4) of this section). The monitor shall include an oxygen monitor for correcting the data for excess.

- (iv) Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location (i.e., after one of the combustion devices), if monitoring at this location accurately represents the SO₂ emissions into the atmosphere from each of the combustion devices.
- (4) Instead of the SO₂ monitor in paragraph (a)(3) of this section for fuel gas combustion devices subject to §60.104(a)(1), an instrument for continuously monitoring and recording the concentration (dry basis) of H₂S in fuel gases before being burned in any fuel gas combustion device.
 - (i) The span value for this instrument is 425 mg/dscm H₂S.
 - (ii) Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H₂S in the fuel gas being burned.

§60.106 Test Methods and Procedures

- (e)(1) The owner or operator shall determine compliance with the H₂S standard in §60.104(a)(1) as follows: Method 11, 15, 15A, or 16 shall be used to determine the H₂S concentration. The gases entering the sampling train should be at about atmospheric pressure. If the pressure in the refinery fuel gas lines is relatively high, a flow control valve may be used to reduce the pressure. If the line pressure is high enough to operate the sampling train without a vacuum pump, the pump may be eliminated from the sampling train. The sample shall be drawn from a point near the centroid of the fuel gas line.
 - (i) For Method 11, the sampling time and sample volume shall be at least 10 minutes and 0.010 dscm (0.35 dscf). Two samples of equal sampling times shall be taken at about 1-hour intervals. The arithmetic average of these two samples shall constitute a run. For most fuel gases, sampling times exceeding 20 minutes may result in depletion of the collection solution, although fuel gases containing low concentrations of H₂S may necessitate sampling for longer periods of time.
 - (ii) For Method 15 or 16, at least three injects over a 1-hour period shall constitute a run.
 - (iii) For Method 15A, a 1-hour sample shall constitute a run.

Subpart Ja

60.102a Emissions Limitations

- (g) Each owner or operator of an affected fuel gas combustion device shall comply with the emissions limits in paragraphs (g)(1) and (2) of this section.
- (ii) The owner or operator shall not burn in any fuel gas combustion device any fuel gas that contains H₂S in excess of 162 ppmv determined hourly on a 3-hour rolling average basis and H₂S in excess of 60 ppmv determined daily on a 365 successive calendar day rolling average basis.

60.103a Design, equipment, work practice or operational standards.

- (c) Except as provided in paragraphs (f) and (g) of this section, each owner or operator that operates a fuel gas combustion device, flare or sulfur recovery plant subject to this subpart shall conduct a root cause analysis and a corrective action analysis for each of the conditions specified in paragraphs (c)(1) through (3) of this section.
 - (2) For a fuel gas combustion device, each exceedance of an applicable short-term emissions limit in §60.102a(g)(1) if the SO₂ discharge to the atmosphere is 227 kg (500 lb) greater than the amount that would have been emitted if the emissions limits had been met during one or more consecutive periods of excess emissions or any 24-hour period, whichever is shorter.
- (d) Except as provided in paragraphs (f) and (g) of this section, a root cause analysis and corrective action analysis must be completed as soon as possible, but no later than 45 days after a discharge meeting one of the conditions specified in paragraphs (c)(1) through (3) of this section. Special circumstances affecting the number of root cause analyses and/or corrective action analyses are provided in paragraphs (d)(1) through (5) of this section.
- (e) Except as provided in paragraphs (f) and (g) of this section, each owner or operator of a fuel gas combustion device, flare or sulfur recovery plant subject to this subpart shall implement the corrective action(s) identified in the corrective action analysis conducted pursuant to paragraph (d) of this section in accordance with the applicable requirements in paragraphs (e)(1) through (3) of this section.

The required root cause analysis and corrective actions are included in KORs Flare Minimization Plan approved in November 2015.

PTO/ATC Conditions

The current PTO includes condition reflecting compliance with Subpart Ja.

In addition to these conditions, the ATC includes the following additional requirement in Subpart Ja.

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

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63.

However, no subparts of 40 CFR Part 61 or 40 CFR Part 63 apply to the Transmix operation.

Rule 4101 – Visible Emissions

Rule 4101 states that 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.

As long as the equipment is properly maintained and operated, compliance with visible emissions limits is expected under normal operating conditions. Continued compliance is expected.

Rule 4102 Nuisance

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (**Attachment X**), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required

'-38-12	4.41E-09	No
---------	----------	----

Discussion of T-BACT

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

Rule 4301 Fuel Burning Equipment

This rule specifies maximum emission rates in lb/hr for SO₂, NO₂, and combustion contaminants (defined as total PM in Rule 1020). This rule also limits combustion contaminants to ≤ 0.1 gr/scf. According to AP 42 (7/98) (Table 1.4-2, footnote c), all PM emissions from natural gas combustion are less than 1 μm in diameter.

District Rule 4301 Limits			
Pollutant	NO ₂	Total PM	SO ₂
ATC #S-37-38, H-1 (lb/hr)	0.135	0.019	0.05
ATC #S-37-38, H-2 (lb/hr)	0.04	0.02	0.07
Rule Limit (lb/hr)	140	10	200

The above table indicates compliance with the maximum lb/hr emissions in this rule; therefore, continued compliance is expected.

Rule 4307 – Boilers, Steam Generators, and Process Heaters – 2.0 MMBtu/hr to 5.0 MMBtu/hr

This rule applies to any gaseous fuel or liquid fuel fired boiler, steam generator, or process heater with a total rated heat input of 2.0 million Btu per hour (MMBtu/hr) up to and including 5.0 MMBtu/hr.

Existing heater H-1 meets the emissions limit requirements of the Rule for NO_x and CO (30 ppmv @ 3% O₂ NO_x, 400 ppmv @ 3% O₂ CO)

- the proposed NO_x emission factor is 30 ppmvd @ 3% O₂ (0.0146 lb/MMBtu), and
- the proposed CO emission factor is 400 ppmvd @ 3% O₂ (0.0188 lb/MMBtu).

New heater H-2 meets the emissions limit requirements of the Rule for NO_x and CO (12 ppmv @ 3% O₂ NO_x, 400 ppmv @ 3% O₂ CO)

- the proposed NO_x emission factor is 12 ppmvd @ 3% O₂ (0.0146 lb/MMBtu), and
- the proposed CO emission factor is 25 ppmvd @ 3% O₂ (0.0188 lb/MMBtu).

Section 5.3 Particulate Matter Control Requirements

Heater H-1 and H-2 also meets the particulate control requirements of Section 5.3 and will combust gas containing no more than 5 gr S/100 scf.

5.4 Start-Up and Shutdown Requirements

Special startup and shutdown provisions have not been proposed.

5.5 Monitoring Provisions

Monthly monitoring and NO_x, CO, and O₂ concentrations has been proposed.

6.3 Compliance Demonstration

6.3.1 The operator shall conduct an initial source test at the time of installation and/or modification for each non-certified unit or each non-certified retrofit control technology to demonstrate compliance with the applicable certification emission limits in Section 5.1. Units demonstrating compliance are eligible for certification under the provisions of Section 9.0.

6.3.2 Source testing of a certified unit or certified retrofit control technology, as defined in Section 3.0, is not required provided the operator complies with the requirements of Sections 6.3.2.1 and 6.3.2.2.

6.3.2.1 Operate the unit within range of operating parameters specified in the APCO-approved certification document.

6.3.2.2 Operate and maintain the unit in accordance with the manufacturer's instructions and conditions specified in the APCO-approved certification document.

Heater H-1 has been recently source tested. Heater H-2 has manufactured guaranteed emissions factors .

Rule 4455 Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants

This rule limits VOC emissions from leaking components at petroleum refineries, gas liquid process facilities and chemical plants, and is applicable to components that contain or contact VOC at such facilities. Rule requirements are included on the facility wide PTO S-37-0-0.

Compliance with this rule 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. The Transmix plant heaters H-1 and H-2 are required to combust gas containing no more than 5 gr S/100scf and therefore are in compliance with the rule.

Continued 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.

District is a Lead Agency & Facility is Subject to Cap-and-Trade

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

On December 17, 2009, the District's Governing Board adopted a policy, APR 2005, *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*, for addressing GHG emission impacts

when the District is Lead Agency under CEQA and approved the District's guidance document for use by other agencies when addressing GHG impacts as lead agencies under CEQA. Under this policy, the District's determination of significance of project-specific GHG emissions is founded on the principal that projects with GHG emission reductions consistent with AB 32 emission reduction targets are considered to have a less than significant impact on global climate change. Consistent with District Policy 2005, projects complying with an approved GHG emission reduction plan or GHG mitigation program, which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, would be determined to have a less than significant individual and cumulative impact for GHG emission.

The California Air Resources Board (ARB) adopted a Cap-and-Trade regulation as part one of the strategies identified for AB 32. This Cap-and-Trade regulation is a statewide plan, supported by a CEQA compliant environmental review document, aimed at reducing or mitigating GHG emissions from targeted industries. Facilities subject to the Cap-and-Trade regulation are subject to an industry-wide cap on overall GHG emissions. Any growth in emissions must be accounted for under that cap such that a corresponding and equivalent reduction in emissions must occur to allow any increase. Further, the cap decreases over time, resulting in an overall decrease in GHG emissions.

Under District policy APR 2025, *CEQA Determinations of Significance for Projects Subject to ARB's GHG Cap-and-Trade Regulation*, the District finds that the Cap-and-Trade is a regulation plan approved by ARB, consistent with AB32 emission reduction targets, and supported by a CEQA compliant environmental review document. As such, consistent with District Policy 2005, projects complying project complying with Cap-and-Trade requirements are determined to have a less than significant individual and cumulative impact for GHG emissions.

Industries covered by Cap-and-Trade are identified in the regulation under section 95811, Covered Entities:

1. Group 1: Large industrial facilities

These types of facilities are subject to Cap and Trade, and the specific companies covered are listed at <http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>, Section 95811 (a), under the "Publically Available Market Information" section (list maintained by the California Air Resources Board).

2. Group 2: Electricity generation facilities located in California, or electricity importers

These types of facilities are subject to Cap and Trade (section 95811, b).

3. Group 3: Suppliers of Natural Gas, Suppliers of Reformulated Gasoline Blendstock for Oxygenate Blending and Distillate Fuel Oil, Suppliers of Liquefied Petroleum Gas, and Suppliers of Blended Fuels

These entities are subject to Cap and Trade compliance obligations which must cover all fuels (except jet fuels) identified in section 95811 (c) through (f) of the Cap-and-Trade regulation delivered to end users in California, less the fuel delivered to covered entities (group 1 above).

This facility is subject to the Cap-and-Trade regulation. Therefore, as discussed above, consistent with District Policies APR 2005 and APR 2025, the District concludes that the GHG emissions increases associated with this project would have a less than significant individual and cumulative 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)).

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 ATCs S-37-38-12 and '-149-2 subject to the permit conditions on the attached draft ATC in **Attachment XI**.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-37-38	3020-02-F	7.42 MMBtu/hr	\$607.00
S-37-149	3020-01-G	1190 hp	\$815.00

Attachments

- I: Current PTO
- II: Location Map
- III: Process Flow Diagram
- IV: Manufacturer's Details on Low NOx Burner
- V: Fugitive Emissions
- VI: Emissions Profiles
- VII: BACT Guidelines
- VIII: BACT Analysis
- IX: HRA
- X: Statewide and Title V Compliance Certification
- XI: Draft ATCs

ATTACHMENT I
Current PTOs

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-37-38-10

EXPIRATION DATE: 08/31/2016

SECTION: 25 **TOWNSHIP:** 30S **RANGE:** 28E

EQUIPMENT DESCRIPTION:

SOLVENT UNIT INCLUDING V-7 FRACTIONATOR, 1 REFLUX DRUM V-8, AND 3,750,000 BTU/HR GAS FIRED FIRE TUBE HEATER (H-1)

PERMIT UNIT REQUIREMENTS

1. Heater shall be fired on purchased natural gas or refinery fuel gas only. [District NSR Rule] Federally Enforceable Through Title V Permit
2. Reflux drum V-8 shall vent only to vapor control system on permit S-37-8. [District NSR Rule] Federally Enforceable Through Title V Permit
3. There shall be no pressure relief valves or vents designed to emit air contaminants to the atmosphere. [District NSR Rule] Federally Enforceable Through Title V Permit
4. There shall be no leaks of 10,000 ppmv or greater of any pressure relief devices installed as part of the unit. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Sampling facilities for source testing shall be provided in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit
6. Heater shall be equipped with fuel flowrate indicator. [District NSR Rule] Federally Enforceable Through Title V Permit
7. If splitter unit plant produces odoriferous wastewater, such wastewater shall not be transported in open system or disposed of in open air site(s). [District NSR Rule] Federally Enforceable Through Title V Permit
8. This permit to operate does not authorize steam production increase over S-37-6 permit limit. [District NSR Rule] Federally Enforceable Through Title V Permit
9. Fuel gas sulfur content (as H₂S) shall not exceed 0.10 gr/ dscf (160 ppmv) over a three hour rolling average and shall be continuously monitored and recorded. [40 CFR 60, Subpart J, 60.104] Federally Enforceable Through Title V Permit
10. Heater shall operate with no emissions in excess of 5% opacity or source testing shall be required to document emission rates. [District NSR Rule] Federally Enforceable Through Title V Permit
11. Heater shall not be fired at greater than 3.75 MMBtu/hr heat input rate. [District NSR Rule] Federally Enforceable Through Title V Permit
12. Emissions from fugitive emissions components shall not exceed 52.1 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Emission rates shall not exceed any of the following limits: PM₁₀: 0.06 lb/hr, SO_x (as SO₂): 1.89 lb/hr, NO_x (as NO₂): 0.55 lb/hr, VOC: 3.91 lb/hr or CO: 0.14 lb/hr. [District NSR Rule] 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. Particulate matter emissions shall not exceed 0.1 grain/dscf. Emissions of combustion contaminants shall not exceed 0.1 grain per cubic foot of gas calculated to 12% CO₂ at dry standard conditions. Emissions of combustion contaminants shall not exceed ten (10) pounds per hour. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
15. Emissions of sulfur compounds from this unit shall not exceed 200 lb per hour, calculated as SO₂. [District Rule 2520, 9.3.2; District Rule 4301, 5.2.1] Federally Enforceable Through Title V Permit
16. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period. [District Rule 2520, 9.3.2; Kern County Rule 407; District Rule 4801] Federally Enforceable Through Title V Permit
17. Compliance with sulfur compound emission limits may be demonstrated by firing this unit either on PUC or FERC regulated natural gas or refinery gas with a sulfur content of no more than 0.1 grain-H₂S/dscf (160 ppmv) according to the continuous H₂S monitor installed downstream of the sulfur recovery unit. [District Rules 4301, 4801 and 2520, 9.3.2] Federally Enforceable Through Title V Permit
18. Operator shall report all rolling 3-hour periods during which the average concentration of H₂S as measured by the H₂S continuous monitoring system exceeds 0.10 gr/dscf (160 ppmv). [40 CFR Part 60, Subpart J, 60.105(e)(3)(ii)] Federally Enforceable Through Title V Permit
19. Operator shall determine compliance with the H₂S standard using EPA Method 11. [40 CFR Part 60, Subpart J, 60.106(e)] Federally Enforceable Through Title V Permit
20. The permittee shall comply with all applicable notification, recordkeeping and monitoring requirements of Rule 4001. [District Rule 4001] Federally Enforceable Through Title V Permit
21. Permittee shall maintain accurate component count and emissions calculated using the 1995 EPA Protocol Refinery Screening Value Range Emissions Factors, from California Implementation Guidelines for Estimating Emissions of Fugitive Hydrocarbon Leaks at Marketing Terminals, Table IV-2a, February 1999. [District Rule 2201] Federally Enforceable Through Title V Permit
22. The permittee shall keep accurate records of sulfur content of refinery fuel gas for a period of five years, and shall make such records available for District inspection upon request. [District NSR Rule] Federally Enforceable Through Title V Permit
23. Operator shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2] 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-37-149-0

EXPIRATION DATE: 08/31/2016

EQUIPMENT DESCRIPTION:

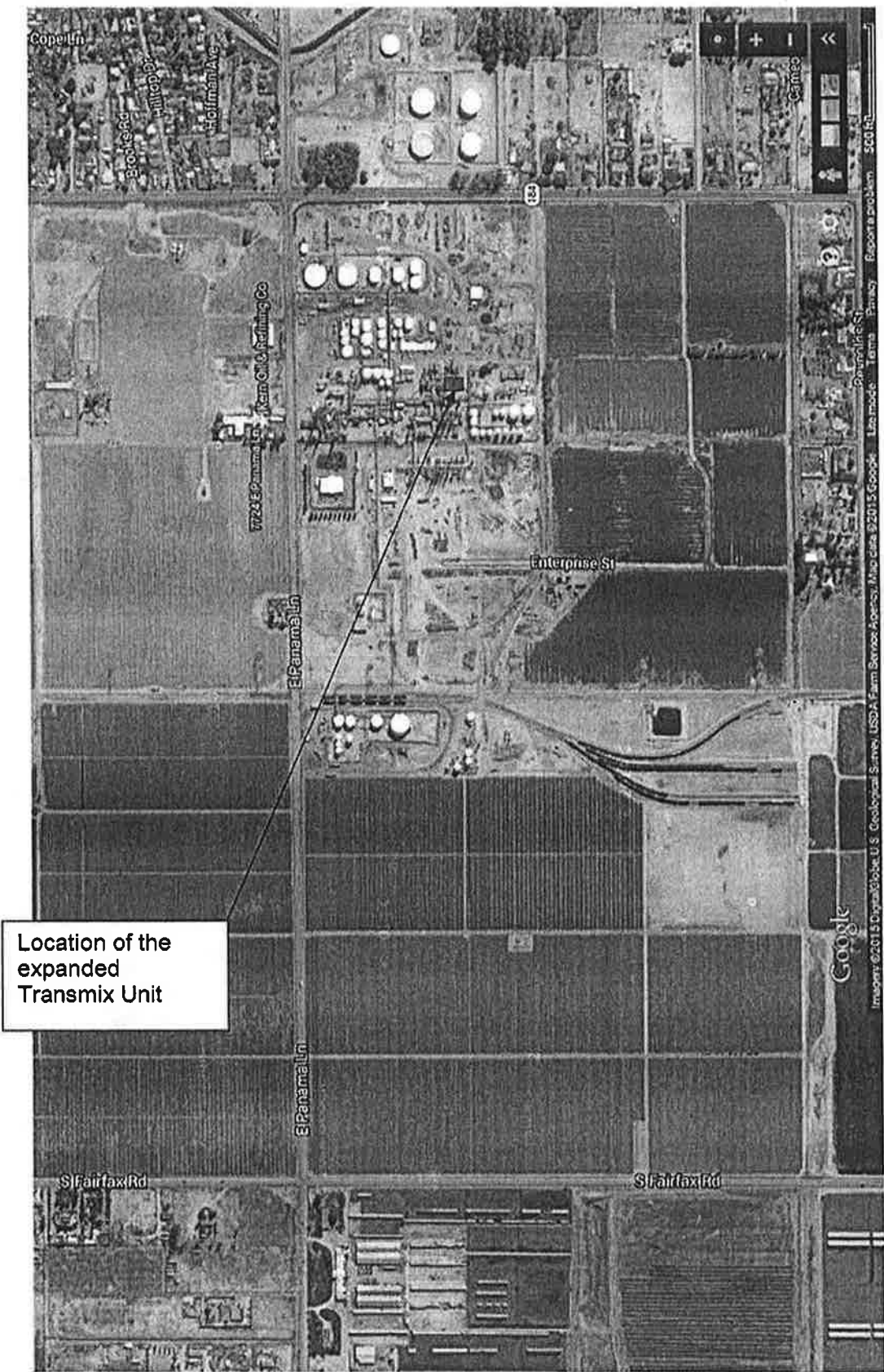
4 MMSCF/DAY LPG RECOVERY UNIT INCLUDING GAS COMPRESSION, MEMBRANE SEPARATION, REFRIGERATION, SOLID PHASE DRYING/ DEHYDRATION, AND FRACTIONATION

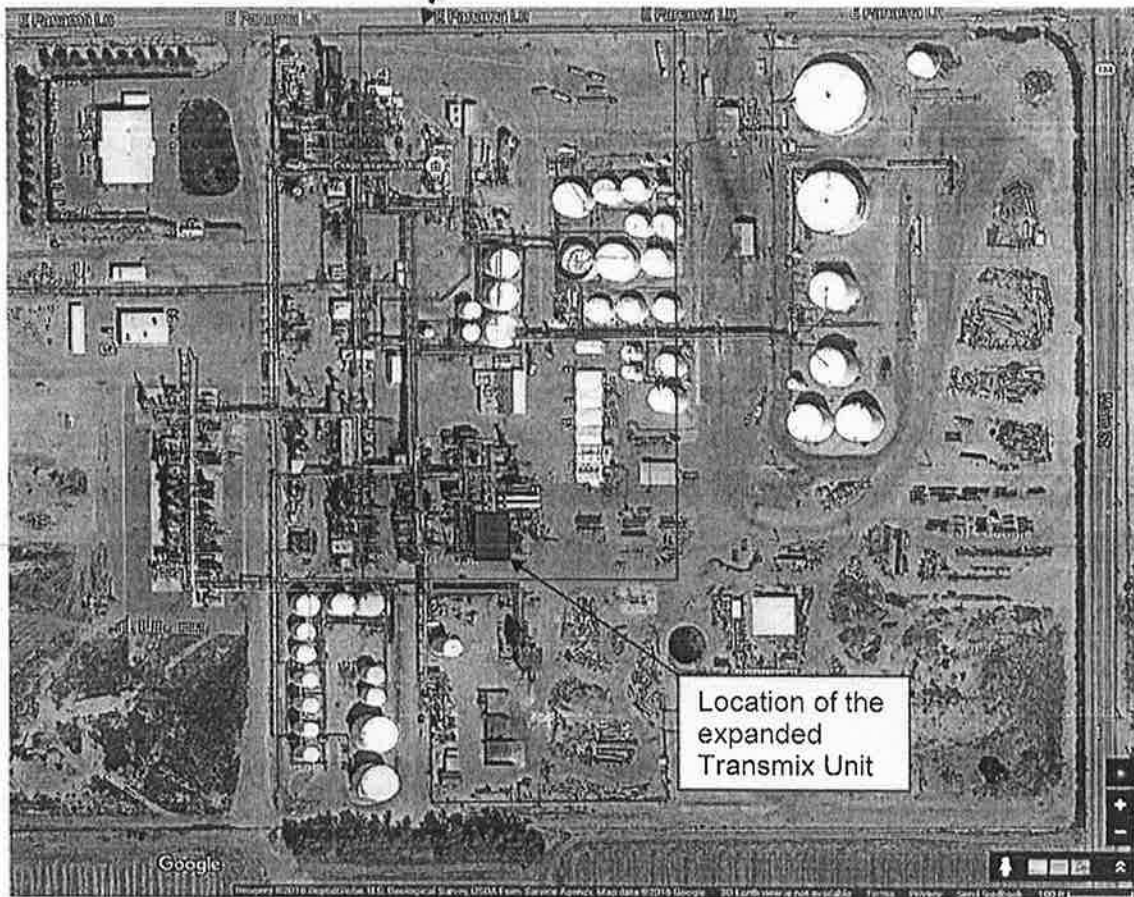
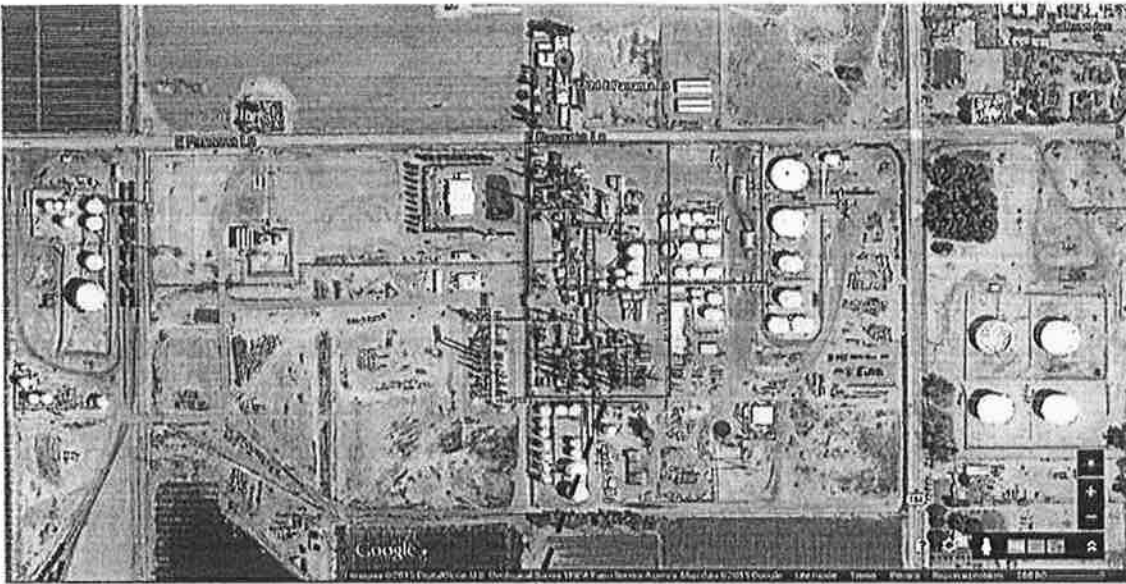
PERMIT UNIT REQUIREMENTS

1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District NSR Rule] Federally Enforceable Through Title V Permit
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. LPG and pentane liquid products shall be sent to existing storage facilities. [District Rule 2201]
4. Total fugitive emissions rate from valves, pumps, flanges, others, and connectors from components in this permit unit shall be periodically calculated as described below using the California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities (February 1999), Table IV-3a:CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals (as described in the following conditions) and shall not exceed 27.7 lb/day. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
5. A leak shall be defined as a reading of methane, in excess of 100 ppmv for valves and connectors and in excess of 500 ppmv for pump and compressor seals above background when measured per EPA Method 21 and an Inspection and Maintenance Program pursuant to District Rule 4455. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Permit holder shall maintain accurate records of component counts and resultant emissions according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-3a (Feb 1999), CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals. Permit holder shall update such records when new components are installed. Components shall be screened and leak rate shall be measured at least once each quarter. If compliance with the daily emission limit is shown during each of five (5) consecutive quarterly inspections, the inspection frequency may be changed from quarterly to annual. If any annual inspection shows non-compliance with the daily emission limit, then quarterly inspections shall be resumed. [District Rule 2201] Federally Enforceable Through Title V Permit
7. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit

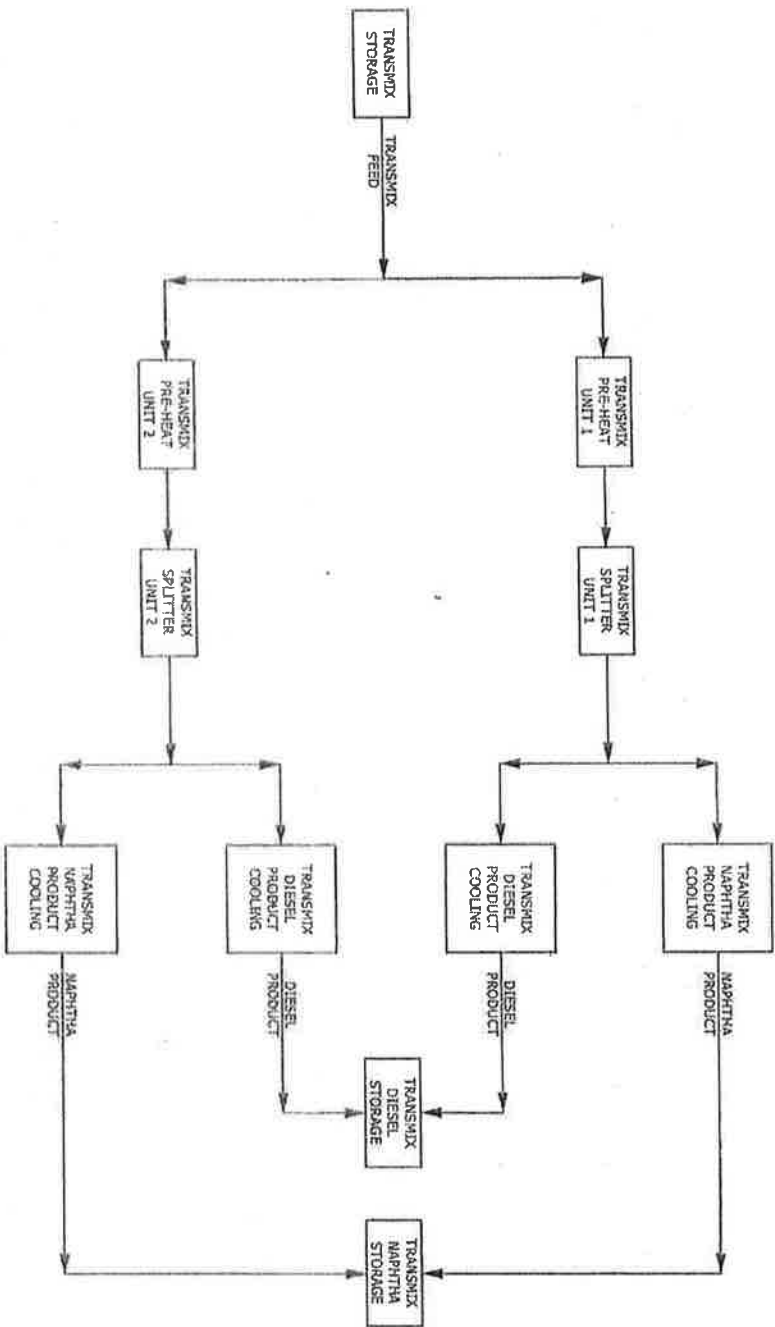
These terms and conditions are part of the Facility-wide Permit to Operate.

ATTACHMENT II
Location Map





ATTACHMENT III Process Flow Diagram



NO.	DESCRIPTION	DATE	BY	CHKD.
1	ISSUED FOR REVIEW			
2	FOR CONSTRUCTION			
3	FOR APPROVAL			
4	FOR RECORD			
5	FOR ARCHIVE			



KERN OIL & REFINING CO.

NO.	DESCRIPTION	DATE	BY	CHKD.
1	ISSUED FOR REVIEW			
2	FOR CONSTRUCTION			
3	FOR APPROVAL			
4	FOR RECORD			
5	FOR ARCHIVE			

TRANSMIX UNIT EXPANSION
BLOCK FLOW DIAGRAM
 KERN OIL & REFINING CO.
 BAKERSFIELD, CALIFORNIA

ATTACHMENT IV
Manufacturer's Details on Lox NOx Burner



**JOHN ZINK
HAMWORTHY
COMBUSTION**

BURNER DATA SHEET

SALES ORDER

TBA

Quote #

201808-85565-A

REVISION:

P2

DATE:

1-Jul-18

SHEET

3 of 3

EMISSION REQUIREMENTS

		Design	Normal	Turndown	REV
116	PER BURNER HEAT RELEASE				
119	FIREBOX BRIDGEWALL TEMPERATURE	*F	1497	1497	1198
120	FIREBOX TEMPERATURE AT BURNER LOCATION	*F			
121	NOx (guaranteed)	ppm(vd)	12	12	12 See Notes
122	CO (guaranteed)	ppm(vd)	25	25	250
123	VOC (guaranteed)	ppm(vd)	4.1	4.1	NA
124	UHC (guaranteed)	ppm(vd)	0.3	0.3	NA
125	Particulates (guaranteed)	lb/MMBtu (H-H)	0.005	0.005	0.005
126					
127	ALL EMISSIONS VALID WHEN OPERATING DESIGN EXCESS AIR				
128	PERCENT (w) O ₂ FOR EMISSION CORRECTIONS [DRY BASIS at DESIGN HEAT RELEASE]		3%		
129	SINGLE BURNER NOISE THRESHOLD SPECIFICATION	dBA at 3 ft or 1 m	85		

SPECIFICATION OPTIONS

130	PRESSURE TAP REQUIRED	YES or NO	No
131	SPECIAL GAUGES	Specify	No
132	SPECIAL VALVES	Specify	No
133	SPECIAL HOSES	Specify	No
134	FLANGED FUEL CONNECTIONS	YES or NO	No
135	ENGINEERING UNITS on DRAWINGS	ENGLISH or METRIC or S.I.	English
136	POSITIVE MATERIAL IDENTIFICATION (PMI) REQUIRED	YES or NO	Yes, per quotation
137	MILL CERTIFICATIONS REQUIRED	YES or NO	Yes, per quotation
138	BURNER PERFORMANCE TEST REQUIRED	YES or NO	Optional
139			

NOTES AND COMMENTS

140	1) VOC emissions are non-Methane, non-Ethane, reported as Methane.	
141	2) UHC are reported as Methane.	
142	3) Particulate guarantees are based on those components of solid matter directly generated through incomplete combustion and are exclusive of condensable products of complete combustion, refractory particulate, residual ash, and air-borne matter.	
144	4) NOx guarantees are based on controlled excess air less than 20% at Turndown.	P2
146		
148		
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TIP DRILLING INFORMATION

153	GAS TIP DRILLINGS:	
154	PRIMARY GAS TIPS:	
155	PRIMARY IGNITION PORTS:	~
156	PRIMARY Crossover PORTS:	~
157	PRIMARY FIRING PORTS:	~
158	PRIMARY SPUD:	~
159	STAGED GAS TIPS:	
160	STAGED IGNITION PORTS:	~
161	STAGED Crossover PORTS:	~
162	STAGED FIRING PORTS:	~
163		
164	PILOT INFORMATION	
165	PILOT ORIFICE DRILLED:	(1) ~ 1/16 inch
166	PILOT PRESSURE REQUIRED	7-15 PSIG

Project Number	A13
End User	Kern Oil
Furnace	Transmix Splitter Reboiler



Draft	Forced
Fuel	PUC Grade Natural Gas
Fuel Pressure available and fuel tips	40 psig

		Design	Normal	Turndown
Firebox Bridgewall Temperature *	deg F	1497	1497	1196
NOx guaranteed	ppm	9	9	9
CO guaranteed	ppm	250	250	250

Notes	1. Values corrected to 3% O2 on dry basis 2. Design and Normal Rates are 3.67MMBtu/hr 3. Turndown Rate is 1.835MMBtu/hr * Values assumed per OEM design of firebox/burner. Guaranteed emissions are dependent on these temperatures being met
-------	--

ATTACHMENT V
Fugitive Emissions

PEZ

PTO S-37-38-12
Post Project Transmix Unit

Fugitive Emissions Using Correlation Equations
California Implementation Guidelines for Estimating Mass Emissions
of Fugitive Hydrocarbon Leaks at Petroleum Facilities
Table IV-3a: Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals

Equipment Type	Service	Component Count	% Default Zeros	% Pegged (>10,000)	% in Correlation Range	Correlation Screening Value (ppm)	Default Zero Emissions (lb/day)	Pegged Emissions (lb/day)	Correlation Emissions (lb/day)	VOC Emissions (lb/day)
Valves	All	210	50%	0.2%	49.8%	400	0.043	1.693	1.103	2.84
Pump Seals	All	5	50%	0.0%	50.0%	1000	0.003	0.000	0.493	0.50
Others	All	59	50%	0.0%	50.0%	200	0.006	0.000	0.407	0.41
Connectors	All	218	50%	0.0%	50.0%	400	0.043	0.000	0.726	0.77
Flanges	All	274	50%	0.0%	50.0%	400	0.002	0.000	2.256	2.26
Open-Ended Lines	All	0	50%	0.0%	50.0%	1000	0.000	0.000	0.000	0.00
									lb/day	6.78
									lb/year	2473.24

Reference

1 kg = 2.20462 lbs

Equipment Type	Service	Default Zero Factor (kg/hr)	Pegged Factor (kg/hr)	Correlation Equation (kg/hr)
Valves	All	7.80E-06	6.40E-02	$2.27E-06(SV)^{0.747}$
Pump Seals	All	1.90E-05	8.90E-02	$5.07E-06(SV)^{0.622}$
Others	All	4.00E-06	8.20E-02	$8.69E-06(SV)^{0.642}$
Connectors	All	7.50E-06	3.00E-02	$1.53E-06(SV)^{0.736}$
Flanges	All	3.10E-07	9.50E-02	$4.53E-06(SV)^{0.706}$
Open-Ended Lines	All	2.00E-06	3.30E-02	$1.90E-06(SV)^{0.724}$

HAE Emissions - Transmix 2165
HAE Emissions - LRU 0
PEZ 2473
x 1.5 308
462 lbs/year VOC

PEI
HAE

PTO S-37-38-10
Existing Transmix Unit

Fugitive Emissions Using Correlation Equations
California Implementation Guidelines for Estimating Mass Emissions
of Fugitive Hydrocarbon Leaks at Petroleum Facilities
Table IV-3a: Revised 1955 EPA Correlation Equations and Factors for Refineries and Marketing Terminals

Equipment Type	Service	Component Count	% Default Zeros	% Pegged (>10,000)	% in Correlation Range	Correlation Screening Value (ppm)	Default Zero Emissions (lb/day)	Pegged Emissions (lb/day)	Correlation Emissions (lb/day)	VOC Emissions (lb/day)
Valves	All	151	50%	0.3%	49.7%	400	0.031	1.693	0.792	2.52
Pump Seals	All	6	50%	0.0%	50.0%	1000	0.003	0.000	0.591	0.59
Others	All	29	50%	0.0%	50.0%	1000	0.003	0.000	0.562	0.57
Connectors	All	156	50%	0.0%	50.0%	400	0.031	0.000	0.519	0.55
Flanges	All	207	50%	0.0%	50.0%	400	0.002	0.000	1.705	1.71
Open-Ended Lines	All	0	50%	0.0%	50.0%	1000	0.000	0.000	0.000	0.00
									lb/day	5.93
									lb/year	2155.27

Reference

1 kg = 2.20462 lbs

Equipment Type	Service	Default Zero Factor (kg/hr)	Pegged Factor (kg/hr)	Correlation Equation (kg/hr)
Valves	All	7.80E-06	6.40E-02	$2.27E-06(SV)^{0.747}$
Pump Seals	All	1.90E-05	8.90E-02	$5.07E-06(SV)^{0.622}$
Others	All	4.00E-06	8.20E-02	$8.69E-06(SV)^{0.642}$
Connectors	All	7.50E-06	3.00E-02	$1.53E-06(SV)^{0.736}$
Flanges	All	3.10E-07	9.50E-02	$4.53E-06(SV)^{0.706}$
Open-Ended Lines	All	2.00E-06	3.30E-02	$1.90E-06(SV)^{0.724}$

PTO S-37-149

V-5 & V-6 From Light Ends Recovery Unit

Fugitive Emissions Using Correlation Equations
California Implementation Guidelines for Estimating Mass Emissions
of Fugitive Hydrocarbon Leaks at Petroleum Facilities
Table IV-3a: Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals

Equipment Type	Service	Component Count	% Default Zeros	% Pegged (>10,000)	% in Correlation Range	Correlation Screening Value (ppm)	Default Zero Emissions (lb/day)	Pegged Emissions (lb/day)	Correlation Emissions (lb/day)	VOC Emissions (lb/day)
Valves	All	39	50%	0.3%	49.7%	400	0.008	0.396	0.205	0.61
Pump Seals	All	1	50%	0.0%	50.0%	1000	0.001	0.000	0.099	0.10
Others	All	13	50%	0.0%	50.0%	1000	0.001	0.000	0.252	0.25
Connectors	All	140	50%	0.0%	50.0%	400	0.028	0.000	0.466	0.49
Flanges	All	33	50%	0.0%	50.0%	400	0.000	0.000	0.272	0.27
Open-Ended Lines	All	0	50%	0.0%	50.0%	1000	0.000	0.000	0.000	0.00
									lb/day	1.73
									lb/year	630.38

Reference

1 kg = 2.20462 lbs

Equipment Type	Service	Default Zero Factor (kg/hr)	Pegged Factor (kg/hr)	Correlation Equation (kg/hr)
Valves	All	7.80E-06	6.40E-02	$2.27E-06(SV)^{0.747}$
Pump Seals	All	1.90E-05	8.90E-02	$5.07E-06(SV)^{0.622}$
Others	All	4.00E-06	8.20E-02	$8.69E-06(SV)^{0.642}$
Connectors	All	7.50E-06	3.00E-02	$1.53E-06(SV)^{0.736}$
Flanges	All	3.10E-07	9.50E-02	$4.53E-06(SV)^{0.706}$
Open-Ended Lines	All	2.00E-06	3.30E-02	$1.90E-06(SV)^{0.724}$

ATTACHMENT VI Emissions Profiles

Permit #: S-37-38-12	Last Updated
Facility: KERN OIL & REFINING CO	04/20/2017 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	1537.0	910.0	687.0	15899.0	2473.0
Daily Emis. Limit (lb/Day)	4.2	2.5	1.8	43.6	6.8
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	88.0	112.0	40.0	1511.0	121.0
Q2:	88.0	112.0	40.0	1511.0	121.0
Q3:	89.0	113.0	40.0	1511.0	121.0
Q4:	89.0	113.0	41.0	1511.0	122.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio	1.5	1.0			1.5
Quarterly Offset Amounts (lb/Qtr)					
Q1:	132.0	112.0			115.0
Q2:	133.0	112.0			115.0
Q3:	133.0	113.0			116.0
Q4:	133.0	113.0			116.0

Permit #: S-37-149-2	Last Updated
Facility: KERN OIL & REFINING CO	04/20/2017 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	9473.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	26.0
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	-157.0
Q2:	0.0	0.0	0.0	0.0	-157.0
Q3:	0.0	0.0	0.0	0.0	-158.0
Q4:	0.0	0.0	0.0	0.0	-158.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

ATTACHMENT VII BACT Guidelines

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 7.2.2*

Last Update 11/27/2006

Petroleum Refining - Valves & Connectors

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Leak defined as a reading of methane in excess of 100 ppmv above background when measure per EPA Method 21 and an Inspection and Maintenance Program pursuant to District Rule 4455		

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 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**

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 7.2.3*

Last Update 11/27/2008

Petroleum Refining - Pump and Compressor Seals

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Leak defined as a reading of methane in excess of 500 ppmv above background when measure per EPA Method 21 and an Inspection and Maintenance Program pursuant to District Rule 4455		

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 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**

ATTACHMENT VIII BACT Analysis

Fugitive Emissions

Top-Down Analysis for VOC Emissions

BACT Guideline 7.2.2 Petroleum Refining – Valves and Connectors

BACT Guideline 7.2.3 Petroleum Refining – Pumps and Compressor Seals

Step 1 - Identify All Possible Control Technologies

Leak defined as a reading of methane, in excess of 100 ppmv above background when measured per EPA Method 21 and an Inspection and Maintenance Program pursuant to District Rule 4455.

Step 2 - Eliminate Technologically Infeasible Options

There is no technologically infeasible option.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Leak defined as a reading of methane, in excess of 100 ppmv above background when measured per EPA Method 21 and an Inspection and Maintenance Program pursuant to District Rule 4455.

Step 4 - Cost Effectiveness Analysis

Since the applicant has chosen the most effective control technology listed in step 3 as a technologically feasible option; a cost effectiveness analysis is not required.

Step 5 - Select BACT

For the new fugitive emissions components - Leak defined as a reading of methane in excess of 100 ppmv above background on a portable hydrocarbon detection instrument calibrated with methane and an Inspection and Maintenance Program pursuant to District Rule 4455.

Heater H-2

Top Down BACT Analysis for NOx Emissions:

Step 1 - Identify All Possible Control Technologies

There is no current BACT Guideline for a refinery heater. Therefore, a project specific BACT analysis will be done. Consistent with District practice for similar projects, the Achieved-in-Practice BACT requirement for NOx is the Rule 4307 limit listed in the table below.

II. Non-Atmospheric Units			
Type of Unit	NOx Limit	CO Limit (ppmv)	Effective Date
A. A new or replacement unit that is not included in Section II. B.	9 ppmv or 0.011 lb/MMBtu	400	Upon Installation of a new or
			replacement unit on and after January 1, 2010
B. A new or replacement unit that is one of the following: 1. a unit used at a school; or 2. a unit in an oilfield or refinery; or 3. a glycol reboiler; or 4. a unit with a heat input greater than 1.8 billion Btu but less than 5.0 billion Btu per calendar year	9 ppmv or 0.011 lb/MMBtu	400	Upon Installation of a new or replacement unit on and after January 1, 2016

The following are possible control technologies:

9 ppmvd @ 3% O2 or 0.011 lb/MMBtu- Achieved in Practice.

Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

9 ppmvd @ 3% O2 or 0.011 lb/MMBtu - Achieved in Practice.

Step 4 - Cost Effectiveness Analysis

Applicant has selected the only technology listed above. A cost analysis is not required.

Top Down BACT Analysis for CO Emissions:

The project authorizes a small refinery heater authorized to combust natural and refinery gas. The Lox NOx burner manufacturer (Clearsign) has indicated that CO emissions less than 250 ppmv @ 3% are not possible to achieve with the low proposed NOx emissions limit of 9 ppmv @ 3% O₂.

There is little information available of emissions from the same class and category of source. A search of authorized emissions levels for similar units (< 5 MMBtu/hr heaters) as described in District document "2017 Attainment Plans Engineer Services Request Control Measure/Rule" indicated that there were no applicable BACT Guidelines in SJVAPCD, Bay Area and South Coast AQMDs, and EPA RACT/BACT/LAER clearinghouses. The list of sixteen (16) SJVAPCD permits for similar sized units in the above mentioned document included only one heater (PTO S-1114-124-0). The heater is authorized to combust gas containing no more than 5 gr S/100 scf. The NOx and CO emissions limits are 30 ppmv NOx @ 3% and 400 ppmv CO @ 3% O₂.

Due to the unique nature of this proposal and no available BACT Guidelines for this class/category of source, a project specific BACT analysis will be performed.

BACT Analysis for CO Emissions:

Carbon monoxide (CO) emissions are generated from the incomplete combustion of air and fuel.

a. Step 1 - Identify all control technologies

- 1) 250 ppmvd CO @ 3% O₂ – Achieved-in-Practice
- 2) Oxidation Catalyst (50 ppmvd @ 3% O₂ CO) – Technologically Feasible

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

- 1) Oxidation Catalyst (50 ppmvd CO @ 3% O₂) – Technologically Feasible
- 2) 250 ppmvd CO @ 3% O₂ – Achieved-in-Practice

d. Step 4 - Cost Effectiveness Analysis

A cost effective analysis, as described in Section 10 of the SJVAPCD *Best Available Control Technology (BACT) Policy APR 1305*, has been completed based on an oxidizing catalyst system for the reduction of CO emission to 50 ppmv (the current permit limit) from 250 ppmv. Advanced Combustion & Process

Controls, Inc. of Bakersfield, CA, provided the cost of the oxidizing catalyst, equipment installation and equipment operation.

The analysis uses a Capital Recovery Factor of 0.1623 derived from the formula in Section 10 of the SJVAPCD's *Best Available Control Technology (BACT) Policy APR 1305* combined with the cost information below.

Applicant provided the following costs (3/14/17 email):

Total Capital Cost (excluding gas plant changes as needed): \$ 2,162,185

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

$$\begin{aligned} A &= P * ((i * (1 + i)^n) / ((1 + i)^n - 1)) \\ A &= \$2,162,185 * ((.10 * (1 + .10)^{10}) / ((1 + .10)^{10} - 1)) \\ A &= \$350,923 \end{aligned}$$

$3.67 \text{ MMBtu/hr} \times (0.188 \text{ lb/MMBtu} - 0.037 \text{ lb/MMBtu}) \times 8760 \text{ hr/yr} / 2000 \text{ lb/ton}$
 $= 2.4 \text{ tons}$

Control Cost (\$/ton), $\$350,923 / 2.4 = \$144,575/\text{ton}$

The cost effective analysis of the reduction of CO emission from 250 ppmv to 50 ppmv results in a control cost of \$144,575/ton, which exceeds the cost effective threshold of \$300/ton. Consequently, the oxidizing catalyst system is not a cost effective BACT solution.

e. Step 5 - Select BACT

BACT for CO emissions from H-2 is a CO limit of 250 ppmvd @ 3% O₂. The applicant has proposed this limit and therefore, BACT for CO emissions is satisfied.

ATTACHMENT IX
HRA/AAQA

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Richard Edgehill – Permit Services
From: Kyle Melching – Technical Services
Date: December 7, 2016
Facility Name: Kern Oil and Refining
Location: 7724 E. Panama Lane, Bakersfield
Application #(s): S-37-38-12 & 149-2
Project #: S-1162746

A. RMR SUMMARY

RMR Summary			
Categories	Heater (Unit 38-12)	Project Totals	Facility Totals
Prioritization Score	0.00	0.00	>1.0
Acute Hazard Index	0.00	0.00	0.9
Chronic Hazard Index	0.00	0.00	0.11
Maximum Individual Cancer Risk	4.41E-09	4.41E-09	14.5E-05
T-BACT Required?	No		
Special Permit Requirements?	Yes		

Proposed Permit Requirements

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

Unit # 38-12

1. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction.

B. RMR REPORT

I. Project Description

Technical Services received a request on November 23, 2016, to perform an Ambient Air Quality Analysis and a Risk Management Review for the installation of 3.75 MMBtu/hr natural gas heater. The facility will also be administratively reassigning two pieces of equipment from unit -149 to unit -38.

II. Analysis

Toxic emissions for this proposed unit were calculated using Ventura County's emission factors for external combustion sources, and input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015), risks from the proposed unit's toxic emissions were prioritized using the procedure in the 1990 CAPCOA Facility Prioritization Guidelines. The prioritization score for this proposed facility was greater than 1.0 (see RMR Summary Table). Therefore, a refined health risk assessment was required. The AERMOD model was used, with the parameters outlined below and meteorological data for 2007-2011 from Arvin to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Unit 38-12			
Source Type	Point	Location Type	Rural
Stack Height (m)	14.94	Closest Receptor (m)	381
Stack Diameter. (m)	0.76	Type of Receptor	Business
Stack Exit Velocity (m/s)	1.62	Max Hours per Year	8760
Stack Exit Temp. (°K)	665	Fuel Type	NG
Fuel Usage (mmscf/hr)	0.0038	Fuel Usage (mmscf/yr)	32.1

Criteria Pollutant Modeling Results*

Diesel ICE	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO _x	Pass ¹	X	X	X	Pass
SO _x	Pass	Pass	X	Pass	Pass
PM ₁₀	X	X	X	Pass ²	Pass ²
PM _{2.5}	X	X	X	Pass ²	Pass ²

*Results were taken from the attached PSD spreadsheet.

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.

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

III. Conclusion

The acute and chronic indices are below 1.0 and the cancer risk factor associated with the project is less than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

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

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

IV. Attachments

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

ATTACHMENT X
Statewide and Title V Compliance Certification



Kern Oil & Refining Co.

7724 E. PANAMA LANE
BAKERSFIELD, CALIFORNIA 93307-9210
(661) 845-0761 FAX (661) 845-0330

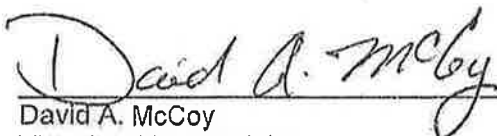
November 9, 2016

Mr. Leonard Scandura
Permit Services Manager
San Joaquin Valley Unified
Air Pollution Control District
34946 Flyover Ct.
Bakersfield, CA 93308

**Subject: Federal Major Modification Statewide Compliance Certification
S-37-38 ATC Application – Transmix Expansion Project**

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.



David A. McCoy
Vice President Refining

**San Joaquin Valley
Unified Air Pollution Control District**

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

☒ SIGNIFICANT PERMIT MODIFICATION ☐ ADMINISTRATIVE AMENDMENT
☐ MINOR PERMIT MODIFICATION

COMPANY NAME: Kern Oil & Refining Co.	FACILITY ID: S - 37
1. Type of Organization: ☒ Corporation ☐ Sole Ownership ☐ Government ☐ Partnership ☐ Utility	
2. Owner's Name: Kern Oil & Refining Co.	
3. Agent to the Owner: David A. McCoy	

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial all 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.

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

David A. McCoy
Signature of Responsible Official

11/9/2016
Date

David A. McCoy

Name of Responsible Official (please print)

Vice President Refining

Title of Responsible Official (please print)

ATTACHMENT XI
Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-37-38-12

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: KERN OIL & REFINING CO
MAILING ADDRESS: 7724 E PANAMA LN
BAKERSFIELD, CA 93307-9210

LOCATION: PANAMA LN & WEEDPATCH HWY
BAKERSFIELD, CA 93307-9210

SECTION: 25 **TOWNSHIP:** 30S **RANGE:** 28E

EQUIPMENT DESCRIPTION:

MODIFICATION OF SOLVENT UNIT INCLUDING V-7 FRACTIONATOR, 1 REFLUX DRUM V-8, AND 3.75 MMBTU/HR GAS FIRED FIRE TUBE HEATER (H-1): CHANGE NAME TO TRANSMIX UNIT, ADD 3.67 MMBTU/HR PROCESS HEATER H-2 AND ADD ACCUMULATOR, CONDENSER, COOLERS, HEAT EXCHANGERS, PUMPS, REBOILERS AND ASSOCIATED PIPING AND COMPONENTS, REASSIGN DEPROPANIZER COLUMN (V-5) AND REFLUX DRUM (V-6) FROM L-149, REVISE NOX, SOX, CO LIMITS FOR RULE 4307 COMPLIANCE AND LOWER VOC LIMIT OF HEATER H-1

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 NOX emission reduction credits for the following quantity of emissions: 1st quarter - 132 lb, 2nd quarter - 133 lb, 3rd quarter - 133 lb, and fourth quarter - 133 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/28/16) 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.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services

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4. Prior to operating equipment under this Authority to Construct, permittee shall surrender SOX emission reduction credits for the following quantity of emissions: 1st quarter - 112 lb, 2nd quarter - 112 lb, 3rd quarter - 113lb, and fourth quarter - 113 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/28/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 115 lb, 2nd quarter - 115 lb, 3rd quarter - 116 lb, and fourth quarter - 116 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/28/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
6. ERC Certificate Numbers N-878-2, N-879-2, S-4809-1, and S-2387-5 (or certificates split from these certificates) 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
7. Heaters H-1 and H-2 shall be fired on purchased natural gas or refinery fuel gas only. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Vessel V-7 and reflux drum V-8 shall vent only to flare listed on S-37-7. [District Rule 2201] Federally Enforceable Through Title V Permit
9. There shall be no pressure relief valves or vents designed to emit air contaminants to the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
10. There shall be no leaks of 10,000 ppmv or greater of any pressure relief devices installed as part of the unit. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Sampling facilities for source testing shall be provided in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit
12. Heaters H-1 and H-2 shall be equipped with fuel flowrate indicators. [District Rule 2201] Federally Enforceable Through Title V Permit
13. If splitter unit plant produces odoriferous wastewater, such wastewater shall not be transported in open system or disposed of in open air site(s). [District Rule 2201] Federally Enforceable Through Title V Permit
14. The owner or operator shall not burn in any fuel gas combustion device any fuel gas that contains H₂S in excess of 162 ppmv determined hourly on a 3-hour rolling average basis and H₂S in excess of 60 ppmv determined daily on a 365 successive calendar day rolling average basis. [40 CFR Subpart Ja, 60.102a (g)(1)(ii)] Federally Enforceable Through Title V Permit
15. Fuel gas sulfur content (as H₂S) shall not exceed 0.10 gr/ dscf (160 ppmv) over a three hour rolling average and shall be continuously monitored and recorded. [40 CFR 60, Subpart Ja] Federally Enforceable Through Title V Permit
16. Heater H-1 shall operate with no emissions in excess of 5% opacity or source testing shall be required to document emission rates. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Heater H-1 shall not be fired at greater than 3.75 MMBtu/hr heat input rate. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Heater H-2 shall not be fired at greater than 3.67 MMBtu/hr heat input rate. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Emissions from the natural gas-fired heater H-1 shall not exceed any of the following limits: 30 ppmvd NO_x @ 3% O₂ (equivalent to 0.036 lb-NO_x/MMBtu), 0.005 lb-PM₁₀/MMBtu, 400 ppmvd CO @ 3% O₂ (equivalent to 0.3 lb-CO/MMBtu), or 0.0055 lb-VOC/MMBtu. [District Rules 2201 and 4307] Federally Enforceable Through Title V Permit
20. Emissions from the natural gas-fired heater H-2 shall not exceed any of the following limits: 9 ppmvd NO_x @ 3% O₂ (equivalent to 0.0146 lb-NO_x/MMBtu), 0.005 lb-PM₁₀/MMBtu, 250 ppmvd CO @ 3% O₂ (equivalent to 0.188 lb-CO/MMBtu), or 0.0055 lb-VOC/MMBtu. [District Rules 2201 and 4307] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Gas combusted by heater H-1 and H-2 shall contain no more than 5 gr S/100scf. [District Rule 4307] Federally Enforceable Through Title V Permit
22. Emissions from fugitive emissions components shall not exceed 6.8 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
23. A leak shall be defined as a reading of methane, in excess of 100 ppmv for valves and connectors and in excess of 500 ppmv for pump and compressor seals above background when measured per EPA Method 21 and an Inspection and Maintenance Program pursuant to District Rule 4455. [District Rule 2201] Federally Enforceable Through Title V Permit
24. 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 4307] Federally Enforceable Through Title V Permit
25. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4307] Federally Enforceable Through Title V Permit
26. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4307] Federally Enforceable Through Title V Permit
27. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4307] Federally Enforceable Through Title V Permit
28. 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
29. 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
30. Source testing to measure NO_x and CO emissions from heater H-2 shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306, and 4307] Federally Enforceable Through Title V Permit
31. 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 4307] Federally Enforceable Through Title V Permit
32. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4307] Federally Enforceable Through Title V Permit
33. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4307] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

34. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4307] 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 Rule 4307] Federally Enforceable Through Title V Permit
36. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306, and 4307] Federally Enforceable Through Title V Permit
37. 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 4307] Federally Enforceable Through Title V Permit
38. Particulate matter emissions shall not exceed 0.1 grain/dscf. Emissions of combustion contaminants shall not exceed 0.1 grain per cubic foot of gas calculated to 12% CO₂ at dry standard conditions. Emissions of combustion contaminants shall not exceed ten (10) pounds per hour. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
39. Emissions of sulfur compounds from this unit shall not exceed 200 lb per hour, calculated as SO₂. [District Rule 2520, 9.3.2; District Rule 4301, 5.2.1] Federally Enforceable Through Title V Permit
40. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period. [District Rule 2520, 9.3.2; Kern County Rule 407; District Rule 4801] Federally Enforceable Through Title V Permit
41. Compliance with sulfur compound emission limits may be demonstrated by firing this unit either on PUC or FERC regulated natural gas or refinery gas with a sulfur content of no more than 0.1 grain-H₂S/dscf (160 ppmv) according to the continuous H₂S monitor installed downstream of the sulfur recovery unit. [District Rules 4301, 4801 and 2520, 9.3.2] Federally Enforceable Through Title V Permit
42. Operator shall report all rolling 3-hour periods during which the average concentration of H₂S as measured by the H₂S continuous monitoring system exceeds 0.10 gr/dscf (160 ppmv). [40 CFR Part 60, Subpart J, 60.105(e)(3)(ii)] Federally Enforceable Through Title V Permit
43. Operator shall report each rolling 365 day period during which the average concentration as measured by the H₂S monitoring system exceeds 60 ppmv. [40 CFR Subpart Ja, 60.107a(i)(1)(ii)] Federally Enforceable Through Title V Permit
44. Operator shall determine compliance with the H₂S standard using EPA Method 11. [40 CFR Part 60, Subpart J, 60.106(e)] Federally Enforceable Through Title V Permit
45. The permittee shall comply with all applicable notification, recordkeeping and monitoring requirements of Rule 4001. [District Rule 4001] Federally Enforceable Through Title V Permit
46. Permittee shall maintain accurate component count and emissions calculated using the Correlation Equation Method described in the CAPCOA publication California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities (February 1999). Table IV-3a CAPCOA - Revised 1995 EPA Protocol Refinery Correlation Equations for Refineries and Marketing Terminals. [District Rule 2201] Federally Enforceable Through Title V Permit
47. The permittee shall keep accurate records of sulfur content of refinery fuel gas for a period of five years, and shall make such records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
48. Operator shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-37-149-2

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: KERN OIL & REFINING CO
MAILING ADDRESS: 7724 E PANAMA LN
BAKERSFIELD, CA 93307-9210

LOCATION: PANAMA LN & WEEDPATCH HWY
BAKERSFIELD, CA 93307-9210

EQUIPMENT DESCRIPTION:

MODIFICATION OF 4 MMSCF/DAY LPG RECOVERY UNIT INCLUDING GAS COMPRESSION, MEMBRANE SEPARATION, REFRIGERATION, SOLID PHASE DRYING/ DEHYDRATION, AND FRACTIONATION: REMOVE DEPROPANIZER COLUMN (V-5) AND REFLUX DRUM (V-6) AND MOVE TO S-37-38.

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. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District NSR Rule] Federally Enforceable Through Title V Permit
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. LPG and pentane liquid products shall be sent to existing storage facilities. [District Rule 2201]
6. Total fugitive emissions rate from valves, pumps, flanges, others, and connectors from components in this permit unit shall be periodically calculated as described below using the California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities (February 1999), Table IV-3a:CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals (as described in the following conditions) and shall not exceed 26.0 lb/day. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director, APCO

Arnaud Marjollet, Director of Permit Services

S-37-149-2 : Apr 20 2017 4:23PM -- EDGEHILL : Joint Inspection NOT Required

7. A leak shall be defined as a reading of methane, in excess of 100 ppmv for valves and connectors and in excess of 500 ppmv for pump and compressor seals above background when measured per EPA Method 21 and an Inspection and Maintenance Program pursuant to District Rule 4455. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Permit holder shall maintain accurate records of component counts and resultant emissions according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-3a (Feb 1999), CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals. Permit holder shall update such records when new components are installed. Components shall be screened and leak rate shall be measured at least once each quarter. If compliance with the daily emission limit is shown during each of five (5) consecutive quarterly inspections, the inspection frequency may be changed from quarterly to annual. If any annual inspection shows non-compliance with the daily emission limit, then quarterly inspections shall be resumed. [District Rule 2201] Federally Enforceable Through Title V Permit
9. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit

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