

AIR QUALITY MANAGEMENT DISTRICT

AUTHORITY TO CONSTRUCT EVALUATION

APPLICATION NO.: A/C 26114
REVIEW STARTING DATE: 03/21/19
ISSUING ENGINEER: Brian Krebs

I. PROJECT DESCRIPTION:

FACILITY NAME: Chevron USA Inc.

LOCATION: 2420 Front Street, Sacramento, CA 95818

PROPOSAL: Installation of a temporary portable combustor (and associated equipment) to control emissions from the loading rack (PO 16163) and transmix tank #115 (P/O 5118) when the vapor recovery unit (VRU) (P/O 20328) is offline for maintenance.

INTRODUCTION: Chevron USA Inc. is a petroleum marketer that receives petroleum products by pipeline from Chevron's Richmond refinery, store them on site, and load gasoline and diesel fuel into trucks. Chevron USA Inc. is seeking an Authority to Construct and a Permit to Operate to install a temporary portable combustor and associated equipment during maintenance operations that cause the existing VRU to be offline. The applicant is proposing to restrict the use of the temporary combustor for up to 19 days per quarter and up to two quarters per year. In addition, during the use of this temporary combustor, the facility throughput will be restricted to 24.7 million gallons per quarter. The temporary portable combustor would be one of multiple units owned and operated by Envent that have been in service for some time and deployed on gasoline loading racks and other emission sources. No modifications are being proposed to the truck loading rack, transmix tank or existing VRU. The proposed portable combustor (and associated equipment) would be transported to the facility, parked, and attached to the vent line from the loading rack and transmix tank so that emissions would remain controlled while the existing VRU is offline.

EQUIPMENT DESCRIPTION: Temporary Portable Combustor

1. Envent Mobile Emission Control Systems, 20 MMBTU/hr maximum heat input rating
2. At least one trailer-mounted vapor bladder system with a capacity of approximately 3,500 cubic feet to help levelize concentrations and flow fluctuations associated with rack activity.
3. Two 1,000-gallon propane tanks for supplemental fuel.
4. Propane-fired propane vaporizer 0.2 MMBTU/hr.

PROCESS RATE/FUEL USAGE:

Fuel Type	Maximum Allowable Fuel Loading		
	gallons/day	gallons/quarter	gallons/year
Gasoline and transmix	1,300,000	No limitation	No limitation
Diesel	No limitation	No limitation	No limitation

Jet A	No limitation	No limitation	No limitation
Total (all products)	1,300,000	24,700,000	49,400,000

OPERATING SCHEDULE: The temporary portable combustor will be operated up to the following:

Hrs/day	Days/quarter	Days/yr
24	19	38

CONTROL EQUIPMENT EVALUATION: Loading rack vapors are collected using vapor balance, where vapors are first sent from the tank trucks through a vapor return line to the vapor bladder tank(s) with a capacity of at least 3,500 cubic feet. Once a sufficient quantity of vapors are collected, they are combusted in the portable combustor unit with the following specifications:

Heat Input:	20 MMBtu/hr (max)
Supplemental Fuel:	Propane
VOC Emission Rate:	0.02 lb/1000 gal
NOx Emission Rate:	0.034 lb/1000 gal

II. EMISSIONS CALCULATIONS:

1. HISTORIC POTENTIAL EMISSIONS:

The equipment is being evaluated as a new emission unit; therefore its Historic Potential Emissions are as follows (Rule 202 and 214, §225):

HISTORIC POTENTIAL EMISSIONS		
Pollutant	Daily Historic Potential Emissions	Quarterly Historic Potential Emissions
VOC	0 lb/day	0 lb/qtr
NOx	0 lb/day	0 lb/qtr
SOx	0 lb/day	0 lb/qtr
PM10	0 lb/day	0 lb/qtr
PM2.5	0 lb/day	0 lb/qtr
CO	0 lb/day	0 lb/qtr

2. PROPOSED POTENTIAL TO EMIT: This application is for a portable combustor that will be used in place of the permanent vapor control unit while it is being taken offline for maintenance. During operation, the loading rack and vapor combustion unit can operate for up to 24 hr/day, continuously. Therefore, the potential to emit for VOC, NOx, SOx, PM10, PM2.5, and CO will be calculated assuming the loading rack and vapor control unit operate (i) 24 hours per day, (ii) 19 days per quarter, and (iii) 38 days per year.

Combustion emissions are calculated using the following equation:

$$PTE = EF \times TP_{\text{all fuels}}$$

Where

- PTE = Potential to Emit (lb/day, lb/qtr, lb/yr)
EF = Emission Factor (lb/1,000 gallons throughput)
TP = Maximum allowable throughput of all fuels (gal/day, gal/qtr, gal/yr)

Emissions at the combustor from controlling the loading rack:

Pollutant	Emission Factor (A) (lb/1000 gallons throughput)	Potential to Emit (B)		
		lb/day	lb/qtr	lb/year
VOC	0.02	26.0	494	988
NOx	0.03	44.2	840	1,680
SOx	1.46E-03	1.9	36	72
PM10	1.58E-03	2.0	39	78
PM2.5	1.58E-03	2.0	39	78
CO	0.15	195.0	3,705	7,410
GHG	28.67	18.6	354	708

(A) Emission factors for SOx, PM10, and PM2.5 are from AP-42, Table 1.5.1 (07/08) and have been adjusted from a liquid basis to an equivalent amount of vapor assuming an uncontrolled emission factor of 8.4 lb of vapor as propane per 1000 gallons loaded, heating values of 24,548 Btu/lb of propane and 91,500 Btu/gallon of liquid propane, and with a propane sulfur specification of 80 ppmw. Emission factors for VOC and NOx are based on BACT emission limits. Emission factor for CO is based on the manufacture's guarantee. GHG emission factor is expressed as CO2e and is from EPA's Mandatory Reporting of Greenhouse Gases Rule (78 FR 71948, Nov. 29, 2013), Tables C-1 & C-2.

(B) Emissions are based on operating at a maximum daily throughput of 1,300,000 gallons/day, 24,700,000 gallons/quarter, and 49,400,000 gallons per year. All emission limits are in English units.

Emissions at the combustor from controlling Tank# 115:

Pollutant	Emission Factor (A) (lb/1000 gallons throughput)	Potential to Emit (B)		
		lb/day	lb/qtr	lb/year
VOC	0.02	0.2	3	6
NOx	0.03	0.3	5	10
Sox	1.46E-03	0.0	0	0

Pollutant	Emission Factor (A) (lb/1000 gallons throughput)	Potential to Emit (B)		
		lb/day	lb/qtr	lb/year
PM10	1.58E-03	0.0	0	0
PM2.5	1.58E-03	0.0	0	0
CO	0.15	1.2	23	46
GHG	28.67	0.1	2	4

(A) Emission factors for SO_x, PM₁₀, and PM_{2.5} are from AP-42, Table 1.5.1 (07/08) and have been adjusted from a liquid basis to an equivalent amount of vapor assuming an uncontrolled emission factor of 8.4 lb of vapor as propane per 1000 gallons loaded, heating values of 24,548 Btu/lb of propane and 91,500 Btu/gallon of liquid propane, and with a propane sulfur specification of 80 ppmw. Emission factors for VOC and NO_x are based on BACT emission limits. Emission factor for CO is based on the manufacture's guarantee. GHG emission factor is expressed as CO₂e and is from EPA's Mandatory Reporting of Greenhouse Gases Rule (78 FR 71948, Nov. 29, 2013), Tables C-1 & C-2.

(B) Emissions are based on converting uncontrolled storage tank emissions into equivalent rack throughputs of 8008 gal/day, 152155 gal/qtr, and 304,309 gal/yr. All emission limits are in English units.

Emissions from the propane vaporizer:

Pollutant	Emission Factor (A) (lb/1000 gallons throughput)	Potential to Emit (B)		
		lb/day	lb/qtr	lb/year
VOC	0.8	0.0	1	2
NO _x	8.5	0.5	9	19
Sox	0.65	0.0	1	1
PM10	0.7	0.0	1	2
PM2.5	0.7	0.0	1	2
CO	7.5	0.4	8	16
GHG	12729	0.4	7	14

(A) Emission factors for VOC, SO_x, PM₁₀, PM_{2.5}, and CO are from AP-42, Table 1.5.1 (07/08) with a sulfur specification of 80 ppmw. Emission factor for NO_x is based on the manufacture's source test data. GHG emission factor is expressed as CO₂e and is from EPA's Mandatory Reporting of Greenhouse Gases Rule (78 FR 71948, Nov. 29, 2013), Tables C-1 & C-2.

(B) Emissions are based on a heat input rate of 0.22 MMBTU/hr, 91.5 MMBTU/1000 gallons, 24 hours/day, 19 days/quarter, and 38 days/year.

Fugitive emissions from components:

Component Type	Service Type	# of Components (B)	Emission factor (A) (kg/hr/source)	Potential to Emit (B)		
				lb/day	lb/qtr	lb/year
Valves	Gas	63	1.30E-05	0.0	1	2
Pump Seals	Gas	0	6.5E-05	0.0	0	0
Others	Gas	4	1.20E-04	0.0	0	1
Fittings	Gas	51	4.20E-05	0.1	2	4
Sub Total				0.2	3	7

(A) Emission factors based on CAPCOA/ARB, "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities", February 1999, Table IV-1B. Only components that are not under negative pressure are not counted.

(B) Component counts based on information provided by Envent for the combustor and two vapor bladder tanks.

Total project emissions from the combustor and all associated equipment:

Pollutant	Potential to Emit		
	lb/day	lb/qtr	lb/year
VOC	26.4	501	1,003
NOx	45.0	854	1,709
Sox	2.0	37	74
PM10	2.1	40	80
PM2.5	2.1	40	80
CO	196.6	3,736	7,472
GHG	19.1	363	727

III. COMPLIANCE WITH RULES AND REGULATIONS:

- H&S § 42301.6 (AB 3205) COMPLIANCE:** The equipment is not located within 1,000 feet from the outer boundary of a school site. Therefore, the school public noticing requirements of H&S Code § 42301.6 do not apply.

2. NSR COMPLIANCE:

Rule 202 - New Source Review

Section 301 - Best Available Control Technology:

BACT is triggered for any pollutant for which the emission increase ($BACT_{EI}$) calculated pursuant to Rule 202, Section 411.1 exceeds the levels specified below.

BACT is triggered if:

$$BACT_{EI} > BACT_{TL}$$

Where:

- $BACT_{EI}$ = Emissions Increase = (DPE - DHPE)
- DPE = Daily Potential Emissions (from Section II.2)
- DHPE = Daily Historic Potential Emissions (from Section II.1)

$BACT_{TL}$ =	Pollutant	$BACT_{TL}$
	VOC	0 lb/day
	NOx	0 lb/day
	SOx	0 lb/day
	CO	550 lb/day
	PM10	0 lb/day
	PM2.5	0 lb/day
	Lead	3.3 lb/day

Determination of BACT Applicability:

Portable Combustor (emissions from loading rack and Tank# 115):

Pollutant	DPE (lb/day)	DHPE	$BACT_{EI}$ (lb/day)	$BACT_{TL}$ (lb/day)	Is BACT Required?
VOC	26.2	0	26	>0	Yes
NOx	44.5	0	44	>0	Yes
SOx	1.9	0	2	>0	Yes
PM10	2.1	0	2	>0	Yes
PM2.5	2.1	0	2	>0	Yes
CO	196.2	0	196	>550	No
Lead	0.0	0	0	>3.3	No

The proposed VOC, NOx, SOx, PM10 and PM2.5 emissions exceed the BACT trigger level specified in this section and are therefore subject to BACT.

Propane Vaporizer:

Pollutant	DPE (lb/day)	DHPE	BACT _{EI} (lb/day)	BACT _{TL} (lb/day)	Is BACT Required?
VOC	0.0	0	0	>0	No
NOx	0.5 (A)	0	0	>0	No
SOx	0.0	0	0	>0	No
PM10	0.0	0	0	>0	No
PM2.5	0.0	0	0	>0	No
CO	0.4	0	0	>550	No
Lead	0.0	0	0	>3.3	No

(A) The actual emissions are <0.5 lb/day.

The proposed VOC, NOx, Sox, PM10, PM2.5 and CO emissions do not exceed the BACT trigger levels specified in this section and are therefore not subject to BACT.

SMAQMD's BACT Determination for a bulk gasoline terminal (BACT No. 164) was last reviewed on **08/15/17**. Since less than two years have passed since the time of the last BACT review and the time the application was deemed complete, and the SMAQMD is not aware of any significant changes to BACT requirements for bulk gasoline terminals, this BACT determination will be considered current and valid for this permit application.

Determination of Compliance with BACT Requirements:

BACT Compliance		
Pollutant	District BACT Standard BACT No. 164	Compliance Determination (A)
VOC	Bottom Loading with dry break couplers and vapor collection system venting to a vapor control unit that meets 0.02 lb/1000 gal	Bottom Loading with dry break couplers and vapor collection system venting to a vapor control unit that meets 0.02 lb/1000 gal
NOx	0.034 lb/1000 gal	0.034 lb/1000 gal
SOx	Natural gas or LPG fired flare	Use of LPG gas
PM10	0.01 grains/scf	0.01 grains/scf
PM2.5	0.01 grains/scf	0.01 grains/scf
CO	0.05 lb/1000 gal	N/A – BACT not triggered
Lead	No Standard	N/A

(A) Based on the manufacturer's emission guarantee.

The loading rack is a bottom loading rack with dry break couplers and it would vent to a bladder tank and vapor combustor. Emissions data demonstrate compliance with the BACT for VOC, NOx, Sox, PM10 and PM2.5 standards.

Section 302 – Offsets: Offsets are triggered for any project where the stationary source potential to emit, calculated pursuant to Rule 202, Section 411.3 exceeds the levels specified below:

Pollutant	lb/qtr
VOC	5,000
NOx	5,000
SOx	13,650
PM10	7,300
PM2.5	15 TPY
CO	49,500

Calculation of Facility’s Potential to Emit for Offset Purposes:

Emission Units Installed Before January 1st, 1977:

Likely many of the tanks and the loading rack were installed before January 1, 1977. However, since these sources only emit VOC, and are therefore not excluded from the offset trigger calculations, all emissions units are being calculated as if they were installed after January 1, 1977.

Emission Units Installed After January 1st, 1977:

All Pollutants: The facility’s potential to emit from all emission units is:

$$\text{Facility's PTE} = \sum(\text{PTE}_{\text{UNIT}})$$

Where:

PTE_{UNIT} = The Potential to emit of the emissions unit (Rule 202, §238)

Note: PM2.5 is expressed in tons/year; all other pollutants are expressed in lb/quarter:

FACILITY’S POTENTIAL TO EMIT							
Pre-Project Potential to Emit							
		lb/quarter					tons/yr
		VOC	NOx	SOx	PM10	CO	PM2.5 ^(A)
Pre-1977 Potential to Emit		0	0	0	0	0	0.00
Post-1977 Potential To Emit							
16163	Loading Rack	21,310					
20328	APC Tank and Truck Loading	0					
13567	Bulk Terminal Storage Tank #112	845					

5118	Bulk terminal Storage Tank #115	850					
14424	Bulk terminal Storage Tank #124	1037					
22251	Storage tank #113 and Ethanol Handling System	404					
23896	Storage Tank #111	469					
9229	Bulk terminal storage tank #123	1244					
	Insignificant Sources	1962					
Project Potential to Emit							
Permit No.	Emissions Unit	VOC	NOx	SOx	PM10	CO	PM2.5^(A)
26114	Combustor, vaporizer, and component fugatives	501	854	37	40	3,736	0.04
Facility Cap		N/A	N/A	N/A	N/A	N/A	N/A
Facility's Total PTE for Offset Purposes		28,622	854	37	40	3,736	0.04
Offset Trigger Levels (≥ to)		5,000	5,000	13,650	7,300	49,500	15
Are Offsets Triggered?		Yes	No	No	No	No	No

(A) Unless otherwise noted, 100% of PM10 is assumed to be PM2.5.

Emission offsets are not required for NOx, SOx, PM10, PM2.5 or CO because emissions are below the offset threshold.

Emission offsets are required for VOC because emissions are above the offset threshold.

Sections 302 and 303 – Offset Requirements and Offset Ratios:

CALCULATION OF EMISSION OFFSETS FOR VOC:

Because VOC emissions are above the District's VOC offset threshold of 5,000 lb/quarter, the facility will be required to fully offset VOC emissions from the temporary portable combustor and associated equipment. To meet offsetting requirements specified in Section 302 of Rule 202, the facility is proposing to surrender emission reduction credits owned by Aerojet that originated at 5800 Alder Ave. in Sacramento, less than 15 miles from the proposed equipment. Therefore, the offset ratio of 1.2 to 1 will be used to determine the quantity of offsets that are required pursuant to Rule 202, Sections 303 and 411.4.

Since the use of the portable combustor and associated equipment is limited to two quarters per year. Chevron will be surrendering 601.2 lb of credits generated in the 2nd quarter and 601.2 lb of VOC credits generated in the 3rd quarter. Regulation 202, Section 302.3(a) allows

these VOC credits to be used to offset emissions in the 1st or 4th quarter as well, in case the portable equipment is operated in those quarters.

	Temporary Portable Combustor VOC Offset Requirements			
	QTR 1 (lb/qtr)	QTR 2 (lb/qtr)	QTR 3 (lb/qtr)	QTR 4 (lb/qtr)
Temporary Portable Combustor and ancillary equipment (A/C 26114) (A)	501	501	501	501
ERC VOC Offset Ratio using private credits generated less than 15 miles from the facility (B)	1.2	1.2	1.2	1.2
Offsets Required (C)	601.2	601.2	601.2	601.2

- (A) Though the emissions are depicted in all four quarters, the permit will restrict the use of the equipment to a maximum 19 days in a quarter (501 lb/qtr) and a total of 38 days per year.
- (B) Emission offset ratio is 1.2 per Section 303.1 because source of credits are within 15 miles from the facility, generated within the Sacramento Valley Air Basin, and are used for a non-major modification.
- (C) Offset Required = temporary portable combustor emissions x Offset Ratio of 1.2. As stated above, Rule 202, Section 302.3(a) allows credits obtained in quarters 2 and 3, to be swapped to either quarters 1 or 4 and thus these credits will cover operation of the equipment for a maximum of 19 days per quarter and 38 days per year.

The applicant has obtained emission reduction credits under ERC Certificate No. 19-01231 that originated from the following source:

Source: Michaels Company
Location: 5800 Alder Avenue, Sacramento, CA 95828
Distance: The source of the credits are approximately 8.3 miles from the Chevron facility.
Ratio: 1.2 to 1
Description: Michaels Company was a furniture manufacturer that emitted VOC's from various wood coating operations. Emission Reduction Credits were generated from the shut-down of Paint Spray Booth #5 along with a 0.4 MMBTU/hr Paint Spray Booth Heater.

Amount:

Pollutant	Lb/qtr1	Lb/qtr2	Lb/qtr3	Lb/qtr4
VOC		700	700	

Basis: See Appendix C

Section 308 –CEQA: The California Environmental Quality Act (CEQA) is a statute that requires state and local agencies to identify the significant adverse environmental impacts of their actions and to avoid or mitigate those impacts to the extent feasible. The first step in the review of projects subject to CEQA is to determine if the project is exempt from CEQA. The State CEQA Guidelines (SCG) provide that “Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.” (SCG §15061(b)(3)) Based on the environmental analysis below staff have concluded that the project is exempt from CEQA because there is no possibility that the project will have a significant adverse effect on the environment.

As shown in the table below, the project’s operational phase emissions, or permitted emission limits are well below the SMAQMD Thresholds of Significance.

Pollutant/Hazard		Threshold	Project Total	Rounded Project Total (B)	Less than Standard ?
NOx (ozone precursor)		65 lb/day	45.0 lb/day	45 lb/day	Yes
VOC (ozone precursor)		65 lb/day	26.4 lb/day	26 lb/day	Yes
PM10 (A)	Daily	80 lb/day	2.1 lb/day	2 lb/day	Yes
	Annual	14.6 tons/year	0.04 tons/year	0 tons/year	Yes
PM2.5 (A)	Daily	82 lb/day	2.1 lb/day	2 lb/day	Yes
	Annual	15 tons/year	0.04 tons/year	0 tons/year	Yes
Cancer Risk (per million)		10 per million	N/A (C)	N/A (C)	Yes
Acute Non-Cancer Health Hazard		1.0	N/A (C)	N/A (C)	Yes
Chronic Non-Cancer Health Hazard		1.0	N/A (C)	N/A (C)	Yes
GHG as CO2e	Operational Phase	10,000 metric tons/year	659 metric tons/year	659 metric tons/year	Yes

- (A) Operational phase CEQA significance threshold for PM10 and PM2.5 is zero (0); however, if all feasible BACT is applied, the threshold is 80 lb/day and 14.6 tons/year for PM10 and 82 lb/day and 15 tons/year for PM2.5.
- (B) The District uses conventional rounding methods to determine what numbers round to zero. For BACT purposes the District has determined that an emissions level of 0.49 lb/day rounds to 0. Using this same methodology, the emissions from this operation are rounded to 0 lb PM10, PM2.5/day and 0 ton PM10, PM2.5/year.
- (C) See Nuisance discussion under Rule 402 in Sec. 3. Prohibitory Rule Compliance.

In addition to the exemption from CEQA for a project that demonstrates no possibility of a significant effect on the environment, CEQA review is also exempt for permitting actions that are considered ministerial. Under the District “Guidance Document, Permit Actions and CEQA Applicability,” section 5.1.1(f), issuance of an ATC is considered ministerial unless it requires the establishment of a new BACT standard. This project does not require a new BACT

standard but rather relied on an existing BACT standard published in the District's BACT Clearinghouse (No. **164**), thus making the permitting action ministerial and exempt from CEQA.

Therefore, upon approval of the project, the SMAQMD will issue the Authority to Construct and file a Notice of Exemption with the Sacramento County Clerk. The notice will be posted for 35 days. The evaluation and Authority to Construct will be made available for public inspection.

Section 309 – Denial, Adverse Impact to Visibility of a Class I Area

This section requires the Air Pollution Control Officer to deny an Authority to Construct or a Permit to Operate for a new major stationary source or major modification, if the Air Pollution Control Officer finds, after consideration of comments and an analysis from the Federal Land Manager, that the emissions from the proposed facility or modification would have an adverse impact on visibility of a Class 1 area pursuant to CFR Section 51.307(b).

Since this modification, at an existing major source, is not considered major (see Appendix A), this section does not apply.

Section 401 – Alternative Siting

Except as provided in Section 115, this section requires for major sources or major modifications for which an analysis of alternative sites, sizes, and production processes is required under Section 173(a)(5) of the Clean Air Act, the applicant provide an alternative siting analysis that is functionally equivalent to the requirements of Division 13 of the Public Resources Code. The Authority to Construct shall not be issued unless the Air Pollution Control Officer has concluded, based on the information contained in the alternative siting analysis, that the benefits of the proposed source significantly outweigh the environmental and social costs imposed as a result of its location, construction, or modification.

Section 115 states that this section does not apply if the application for Authority to Construct is not a Federal Major Modification. Since this modification is not considered major (see Appendix A), this section does not apply.

Section 406 – Submittal of BACT Determinations: This permit action relied on an existing BACT determination (**#164**) already published on SMAQMD's BACT Clearinghouse. Therefore, this section does not apply.

Section 413 - Sources Impacting Class 1 Areas

This section requires, for new major sources or major modifications that may affect visibility of a Class 1 area, the applicant to provide the Air Pollution Control Officer with an analysis of impairment to visibility that would occur as a result of the source or modification and general commercial, residential, industrial, and other growth associated with the project, as required by 40 CFR Section 51.307(b)(2) and 40 CFR Section 51.166.

Since this modification, at an existing major source, is not considered major (see Appendix A), this section does not apply.

Rule 203 – Prevention of Significant Deterioration

A source or modification triggers PSD if:

- Its potential to emit any one pollutant is greater than or equal to 100 tons/year if it is one of the 28 selected industrial categories in 42 U.S.C. Section 7479 (1), or greater than or equal to 250 tons/year for all other categories; or
- It is part of a major stationary source and the project’s net emissions increase for any pollutant will be greater than the significance levels listed below:

Pollutant	Level of Significance (Tons/Yr)
CO	100
NOx	40
SOx	40
PM	25
PM10	15
PM2.5	10 (PM2.5) or 40 (SO2) or 40 (NO)
Ozone	40 of NOx or VOCs
Lead	0.6
Fluorides	3
Sulfuric acid mist	7
H2S	10
Total reduced sulfur (including H ₂ S)	10
Reduced sulfur compounds (including H ₂ S)	10
Greenhouse Gases (CO ₂ e)	75,000

There are no emissions sources at the facility that appear to have the potential to emit over 100 or 250 tons per year, and as demonstrated in Section II.2, the emissions from this equipment would not cause the facility to exceed the PSD thresholds. Since this is not a major source, it is not necessary to consider the major modification significance levels. Section II.2 also indicates that annual emissions are well below the levels of significance.

RULE 207 – Title V Federal Operating Permit Program

Chevron has a Title V permit. Consequently, the review of this application is subject to Rule 207, Section 305 and Sections 401 through 408. A Title V minor modification will be required to be submitted after this Authority to Construct is issued and before initial operation of this portable combustor.

Rule 214 – Federal New Source Review

This rule applies to either new major stationary sources, or modifications to existing major stationary sources.

Section 301 – BACT

Since the modification is not considered a major modification for any pollutant (see Appendix A – Major Modification Applicability Determination), the following methodologies will be utilized.

BACT is triggered for any pollutant for which the emission increase ($BACT_{EI}$) calculated pursuant to Rule 202, Section 411.1 exceeds the levels specified below. For purposes of this calculation, the difference is done using tenths, then the difference is rounded to an integer using standard rounding convention (round up if greater than or equal to 0.5):

BACT is triggered if:

$$BACT_{EI} > BACT_{TL}$$

Where:

- $BACT_{EI}$ = Emissions Increase = (DPE – DHPE)
- DPE = Daily Potential Emissions (from Section II.2)
- DHPE = Daily Historic Potential Emissions (from Section II.1)

$BACT_{TL}$	Pollutant	$BACT_{TL}$
	VOC	0 lb/day
	NOx	0 lb/day
	SOx	0 lb/day
	CO	550 lb/day
	PM10	0 lb/day
	PM2.5	0 lb/day
	Lead	3.3 lb/day

Determination of BACT Applicability:

Portable Combustor (emissions from loading rack and Tank# 115)

Pollutant	DPE (lb/day)	DHPE	$BACT_{EI}$ (lb/day)	$BACT_{TL}$ (lb/day)	Is BACT Required?
VOC	26.2	0	26	>0	Yes
NOx	44.5	0	44	>0	Yes
SOx	1.9	0	0	>0	Yes
PM10	2.1	0	2	>0	Yes
PM2.5	2.1	0	2	>0	Yes
CO	196.2	0	196	>550	No
Lead	0.0	0	0	>3.3	No

The proposed VOC, NOx, SOx, PM10 and PM2.5 emissions exceed the BACT trigger level specified in this section and are therefore subject to BACT.

Propane Vaporizer

Pollutant	DPE (lb/day)	DHPE	BACT _{EI} (lb/day)	BACT _{TL} (lb/day)	Is BACT Required?
VOC	0.0	0	0	>0	No
NOx	0.5 (A)	0	0	>0	No
SOx	0.0	0	0	>0	No
PM10	0.0	0	0	>0	No
PM2.5	0.0	0	0	>0	No
CO	0.4	0	0	>550	No
Lead	0.0	0	0	>3.3	No

(A) The actual emissions are <0.5 lb/day.

The proposed VOC, NOx, Sox, PM10, PM2.5 and CO emissions do not exceed the BACT trigger levels specified in this section and are therefore not subject to BACT.

SMAQMD's BACT Determination for a bulk gasoline terminal (BACT No. **164**) was last reviewed on **08/15/17**. Since less than two years have passed since the time of the last BACT review and the time the application was deemed complete, and the SMAQMD is not aware of any significant changes to BACT requirements for bulk gasoline terminals, this BACT determination will be considered current and valid for this permit application.

Determination of Compliance with BACT Requirements:

BACT Compliance		
Pollutant	District BACT Standard BACT No. 164	Compliance Determination (A)
VOC	Bottom Loading with dry break couplers and vapor collection system venting to a vapor control unit that meets 0.02 lb/1000 gal	Bottom Loading with dry break couplers and vapor collection system venting to a vapor control unit that meets 0.02 lb/1000 gal
NOx	0.034 lb/1000 gal	0.034 lb/1000 gal
SOx	Natural gas or LPG fired flare	Use of LPG gas
PM10	0.01 grains/scf	0.01 grains/scf
PM2.5	0.01 grains/scf	0.01 grains/scf
CO	0.05 lb/1000 gal	N/A – BACT not triggered
Lead	No Standard	N/A

(A) Based on the manufacturer's emission guarantee.

The loading rack is a bottom loading rack with dry break couplers and it would vent to a bladder tank and Vapor combustor. Emissions data demonstrate compliance with the BACT for VOC, NOx, SOx, PM10 and PM2.5 standards.

Section 302 – Offsets

Offsets are triggered for modifications where the stationary source potential to emit, calculated pursuant to Rule 214, Section 411.3 exceeds the levels specified below.

Pollutant	lb/qtr
VOC	12,500
NOx	12,500
SOx	20,000
PM10	7,300
PM2.5	10 TPY

FACILITY'S POTENTIAL TO EMIT							
Pre-Project Potential to Emit							
		lb/quarter					tons/yr
		VOC	NOx	SOx	PM10	CO	PM2.5 ^(A)
Pre-1977 Potential to Emit		0	0	0	0	0	0.00
Post-1977 Potential To Emit							
16163	Loading Rack	21,310					
20328	APC Tank and Truck Loading	0					
13567	Bulk Terminal Storage Tank #112	845					
5118	Bulk terminal Storage Tank #115	850					
14424	Bulk terminal Storage Tank #124	1037					
22251	Storage tank #113 and Ethanol Handling System	404					
23896	Storage Tank #111	469					
9229	Bulk terminal storage tank #123	1244					
	Insignificant Sources	1962					

Project Potential to Emit							
Permit No.	Emissions Unit	VOC	NOx	SOx	PM10	CO	PM2.5 ^(A)
26114	Combustor, vaporizer, and component fugatives	501	854	37	40	3,736	0.04
Facility Cap		N/A	N/A	N/A	N/A	N/A	N/A
Facility's Total PTE for Offset Purposes		28,622	854	37	40	3,736	0.04
Offset Trigger Levels (≥ to)		12,500	12,500	20,000	7,300	N/A	10
Are Offsets Triggered?		Yes	No	No	No	No	No

(A) Unless otherwise noted, 100% of PM10 is assumed to be PM2.5. The PM2.5 PTE was assumed to be the same as PM10 PTE.

Emission offsets are not required for NOx, SOx, PM10, PM2.5 or CO because emissions are below the offset threshold.

Emission offsets are required for VOC because emissions are above the offset threshold.

Sections 302 and 303 – Offset Requirements and Offset Ratios:

Calculation Of Emission Offsets For VOC:

Because VOC emissions are above the District's VOC offset threshold of 12,500 lb/quarter, the facility will be required to fully offset VOC emissions from the temporary portable combustor and ancillary equipment. To meet offsetting requirements for a non-major modification specified in Section 302 of Rule 214, the facility is proposing to surrender emission reduction credits owned by Aerojet that originated at 5800 Alder Ave. in Sacramento, less than 15 miles from the proposed equipment. Therefore, the offset ratio of 1.2 to 1 will be used to determine the quantity of offsets that are required pursuant to Rule 214, Sections 303 and 411.4.

Since the use of the portable combustor and ancillary equipment is limited to two quarters per year. Chevron will be surrendering 601.2 lb of credits generated in the 2nd quarter and 601.2 lb of VOC credits generated in the 3rd quarter. Regulation 214, Section 302.3(a) allows these VOC credits to be used to offset emissions in the 1st or 4th quarter as well, in case the portable equipment is operated in those quarters.

	Temporary Portable Combustor VOC Offset Requirements			
	QTR 1 (lb/qtr)	QTR 2 (lb/qtr)	QTR 3 (lb/qtr)	QTR 4 (lb/qtr)
Temporary Portable Combustor and ancillary equipment (A/C 26114) (A)	501	501	501	501
ERC VOC Offset Ratio using private credits generated less than 15 miles from the facility (B)	1.2	1.2	1.2	1.2
Offsets Required (C)	601.2	601.2	601.2	601.2

- (A) Though the emissions are depicted in all four quarters, the permit will restrict the use of the equipment to a maximum of two quarters in a year.
- (B) Emission offset ratio is 1.2 per Section 303.1 because source of credits are within 15 miles from the facility and were generated within the Sacramento Valley Air Basin.
- (C) Offset Required = temporary portable combustor emissions x Offset Ratio of 1.2. As stated above, Rule 214, Section 302.3(a) allows credits obtained in quarters 2 and 3, to be swapped to either quarters 1 or 4 and thus these credits will cover operation of the equipment in any two quarters of the year.

See ERC discussion in Rule 202 compliance determination above.

Section 309 – Denial, Adverse impact to Visibility of a Class 1 Area

The section only applies for a new major source or major modification. Since this modification is not considered major (see Appendix A - Major Modification Applicability Determination), then this section does not apply.

Section 401 – Alternative Siting

The section only applies for a new major source or major modification. Since this modification is not considered major (see Appendix A - Major Modification Applicability Determination), then this section does not apply.

Section 413 – Sources Impaction Class I Areas

The section only applies for a new major source or major modification. Since this modification is not considered major (see Appendix A - Major Modification Applicability Determination), then this section does not apply.

Rule 217 – Public Notice Requirements for Permits

Sections 401-402 – CARB, EPA, and Public Notification: The public noticing requirements of Rule 217 do not apply if:

- Offsets are not required under Rule 202, Section 302.
- A visibility analysis is not required under Rule 214, Section 413.
- The increase in potential to emit for the project, calculated under Section 403 of Rule 217, is below the following limits:

<u>Pollutant</u>	<u>lb/qtr</u>
VOC	5,000
NOx	5,000
SOx	9,200
PM10	7,300
PM2.5	10 TPY
CO	49,500

Analysis:

- As determined in Section III.2, offsets are required.
- This permit action is not subject to Rule 214, so the visibility analysis required by Section 413 of Rule 214 is inapplicable.
- As shown below, the increase in potential to emit does exceed the notification exemption thresholds for NOx and VOC.

Increase in Potential to Emit					
Pollutant	Potential to Emit for the Project		Increase in PTE	Notification Threshold	Notification Required?
	Pre-Application	Post-Application			
VOC	0 lb/qtr	501 b/qtr	501 lb/qtr	≥ 5,000	No
NOx	0 lb/qtr	854 lb/qtr	854 lb/qtr	≥ 5,000	No
SOx	0 lb/qtr	37 lb/qtr	37 lb/qtr	≥ 9,200	No
PM10	0 lb/qtr	40 lb/qtr	40 lb/qtr	≥ 7,300	No
PM2.5	0.00 TPY	0.04 TPY	0.04 TPY	≥ 10 TPY	No
CO	0 lb/qtr	3,736 lb/qtr	3,736 lb/qtr	≥ 49,500	No

Per Rule 217, Section 110, since emission offsets are required, this permit action is subject to CARB, EPA, and public review.

3. PROHIBITORY RULE COMPLIANCE:

Rule 401 – Ringelmann Chart

The permit will include conditions requiring that the portable combustor comply with the Ringelmann No. 1 or 20% opacity standard and in the District’s experience; properly maintained dryers are able to meet the requirement. The equipment will be inspected prior to the issuance of the permit to operate and on a regular basis thereafter to ensure continuous compliance.

Rule 402 – Nuisance

Due to the very limited use of this equipment (a maximum of 38 days per year), operating in lieu of the permanent VCU when it is undergoing maintenance, along with the fact that the proposed project will not be increasing VOC emissions from the terminal, (actual emissions from the loading rack and transmix tank will be less than or equal to what Chevron is currently emitting as a result of the combustor controlling VOC emissions to a greater extent than the existing VRU), this source is expected to not cause a nuisance.

Rule 406 – Specific Contaminants

The proposed equipment is not expected to exceed the emissions limit of 0.2% by volume sulfur compound as SO₂ and 0.1 gr/dscf for combustion contaminants calculated to 12% CO₂.

Fuel F-Factor	=	8,710 dscf/MMBtu
Molar Volume	=	385.3 ft ³ /mol
Uncontrolled Emission Factor	=	8.4 lb/1000 gallon
Propane Fuel Density	=	24,548 Btu/lb fuel
Propane Fuel Density	=	101,352 lb fuel/MMCF
Propane HHV	=	2,488 MMBtu/MMCF
Conversion Factor	=	7,000 gr/lb

PM10 Emission Factor	=	1.6E-03 lb/1000 gal
SO2 Emission Factor	=	1.2E-04 lb/1000 gal
Weight % C in Natural Gas	=	82 % or 0.82 lb C/lb fuel
C to CO2 Conversion Efficiency	=	0.995

PM10 Concentration (combustion contaminants):

- A. Calculate uncorrected grain loading
= (1.6E-03 lb/1000 gal) x (1000 gal/8.4 lb fuel) x (lb fuel/24,548 Btu) x (7000 gr/lb) x (10⁶ Btu/MMBtu) x (MMBtu/8,710 dscf)
= 0.006235978 gr/dscf
- B. Calculate CO2 emission factor (lb CO2/MMBtu) assuming 100% C to CO2 conversion
= (0.82 lb C/lb fuel) x (mol C/12.01 lb C) x (mol CO2/mol C) x (44.01 lb CO2/mol CO2) x (101,352 lb fuel/MMCF) x (MMCF/2,488 MMBtu)
= 122.481125 lb CO2/MMBtu
- C. Calculate lb CO2/MMBtu at 99.5% Conversion
= 122.481125 lb CO2/MMBtu x 99.5%
= 121.868720 lb CO2/MMBtu
- D. Calculate volume % of CO2 in Exhaust Gas
= % CO2
= mol CO2/mol exhaust
= (121.868720 lb CO2/MMBtu) x (mol CO2/44.01 lb CO2) x (MMBtu/8,710 dscf) x (385.3 dscf/mol exhaust)
= 0.12252379 mol CO2/mol exhaust or 12.252379 % CO2
- E. Calculate corrected grain loading
= (0.006235978 gr/dscf) x (12% CO2/12.252379 % CO2)
= 0.006 gr/dscf corrected to 12% CO2

SO2 Concentration (% SO2 by volume):

The following calculation is at 0% excess air which represents worst case.

$$\begin{aligned} &= (1.46E-03 \text{ lb SO}_2/1000 \text{ gal}) \times (1000 \text{ gal}/8.4 \text{ lb fuel}) \times (\text{lb fuel}/24,548 \text{ Btu}) \times (\text{MMBtu}/8,710 \text{ dscf}) \times (1 \text{ mol SO}_2/64 \\ &\text{ lb SO}_2) \times (385.3 \text{ scf/mol}) \times (1,000,000 \text{ BTU/MMBTU}) \\ &= 0.000004894 \text{ mol SO}_2/\text{mol exhaust or } 0.0004894\% \text{ SO}_2 \end{aligned}$$

The rule emission limits for SO2 and PM are 0.2% SO2 by volume and 0.1 grains/cf at 12% CO2, respectively. Therefore, the emissions from each boiler comply with Rule 406.

Rule 414 – Water Heaters, Boilers, and Process Heaters Rated less than 1,000,000 BTU/hr

This rule limits NOx emissions from water heaters, boilers, and process heaters. The propane vaporizer is fired on LPG and per Section 112 it is exempt from this rule.

Rule 419 – NOx from Miscellaneous Combustion Units

Limits emissions of NOx and CO from gaseous and liquid fuel-fired miscellaneous combustion units. This rule applies to any miscellaneous combustion unit with a total rated heat input capacity of 2 million BTU per hour or greater that is located at a major stationary source. The portable combustor is considered an air pollution control device and per Section is exempt from this rule.

Rule 420 – Sulfur Content of Fuel

This rule limits the sulfur content of all liquid fuels to less than 0.5% by weight (5,000 ppm). California reformulated gasoline (RFG3) is limited to 20 parts per million sulfur by weight. LPG which may also be used as supplemental fuel has a sulfur content of 0.54 gr/100 ft³. Since both the gasoline product loaded through the loading rack as well as any supplemental fuel is well below the sulfur content limit, it is expected that the resulting vapors will comply with this rule.

Rule 447 – Organic Liquid Loading

This rule limits VOC emissions from the loading of organic liquids and applies to any tank truck, trailer, or railroad tank car from a bulk plant or bulk terminal. Therefore, this rule applies to the loading rack and the vapor control unit.

Section 301 – This section limits emissions of VOC from the transfer of organic liquids into any tank truck, trailer, or railroad tank car from a bulk terminal to 0.08 lb/1000 gallons of organic liquids loaded. The VOC emissions from bulk loading of liquids will be limited to 0.02 lb/1000 gallons. Therefore, the equipment is expected to meet this requirement. In accordance with Section 303, this system must be certified by CARB.

Section 304 – This section requires that all equipment associated with bulk loading of organic liquids be maintained to be leak free and vapor tight. The permit will include conditions requiring periodic maintenance to ensure leak free and vapor tight equipment.

Section 305 – This section requires that the vapor holder tank (vapor diaphragm) used to store vapors prior to control in the vapor control unit be maintained such that the VOC concentration in the airspace above the diaphragm does not exceed 3,000 parts per million, expressed as methane.

Section 501 – To verify compliance with Sections 301, 304, and 305, the facility will be required to test the efficiency of the control device in accordance with EPA Method 18, 25, 25A, 25B, or CARB Test Procedure TP-202.1 or TP-203.1, monitor for leaks using EPA Method 21, and measure the VOC concentration above the vapor diaphragm airspace using EPA Method 18, CARB Methods 150 or 1-100, or CARB Test Procedure TP-204.3.

Records must be maintained at the site for a period of at least three years.

4. NSPS COMPLIANCE:

NSPS under 40 CFR, Part 60: The list of all adopted New Source Performance Standards (<http://yosemite.epa.gov/r9/r9nspns.nsf/ViewStandards?ReadForm&Part=60>) was reviewed to determine if the proposed project is subject to one or more of these regulations. There following 40 CFR, Part 60 NSPS section applies to this source category.

40 CFR Part 60 Subpart Kb Standards of Performance for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984:

Application of the proposed control equipment to the transmix tank #115 will not increase VOC emissions and therefore do not constitute a “modification” as defined in 40 CFR 60.14. However, the provision of this subpart currently apply to the transmix tank and will continue to do so. Fixed-roof storage tanks are required to be equipped with a control device that is at

least 95% efficient, which the use of the temporary bladder tank and vapor combustor will be able to easily achieve.

40 CFR Part 60, Subpart XX Standards of Performance for Bulk Gasoline Terminals:

Application of the proposed control equipment to the loading rack will not increase VOC emissions and therefore, do not constitute a “modification” as defined in 40 CFR 60.14. However, the provisions of this subpart currently apply to the loading rack and will continue to do so.

40 CFR §60.502(b) requires the facility to have a vapor collection and control system. The emissions from the vapor collection and control system due to the organic liquid loading must not exceed 35 mg/L (0.29 lb/1000 gallons). The vapor collection and control system is expected to meet 0.02 lb/1000 gallons, and therefore, is expected to comply with this section.

40 CFR §60.502(e) requires the facility to load, with some exceptions, only into tank trucks that are considered to be vapor tight. District Rule 448 requires all delivery vessel trucks that service stationary tanks in the District to be certified by CARB to be vapor tight. Therefore, it is expected that the facility will comply with this requirement.

Conditions will be included in the permit to ensure that the facility complies with the operation, maintenance, and recordkeeping standards of this subpart.

5. NESHAP COMPLIANCE:

NESHAPs under 40 CFR, Part 61: The list of all adopted National Emission Standards for Hazardous Air Pollutants (NESHAP) (<http://yosemite.epa.gov/r9/r9nsps.nsf/ViewStandards?ReadForm&Part=61>) were reviewed to determine if the proposed project is subject to one or more of these regulations. There are currently no 40 CFR, Part 61 NESHAP sections that apply to this source category.

NESHAPs under 40 CFR, Part 63: The District has not requested nor obtained delegation of Part 63 NESHAPs. However, these NESHAPS are being enforced as state Air Toxic Control Measures (ATCMs) pursuant to Health and Safety Code, Sections 39658(b) and 39666(d). The list of all adopted National Emission Standards for Hazardous Air Pollutants (<http://yosemite.epa.gov/r9/r9nsps.nsf/ViewStandards?ReadForm&Part=63>) were reviewed to determine if the proposed project is subject to one or more of these regulations. The following subpart is applicable to this facility:

40 CFR 63 Subpart BBBBBB National Emission Standards for Hazardous Air Pollutants – Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities

This regulation applies to area source gasoline bulk terminals, bulk plants, and pipeline facilities. As discussed below, the facility is a bulk gasoline terminal that is not subject to 40 CFR 63 Subparts R or CC. Therefore this subpart applies.

40 CFR §63.11088 requires that each loading rack meet the emission limit and management practice listed in Table 2, the testing and monitoring requirements specified in §63.11092, the applicable notifications as required under §63.11093, and the recordkeeping and reporting requirements of §§63.11094 and 63.11095.

The emission limit specified in Table 2 for organic liquid loading is 80 mg/L (0.67 lb/1000 gallons). The facility is expected to meet this requirement by meeting District Rule 447 and BACT.

The testing requirements of §63.11092(a) were originally met with the use of Chevron's permanent vapor control unit when the source first became subject to Subpart BBBBBB. Though this modification is for the temporary replacement of the control device, and since the modification does not constitute a reconstructed source, the source is not required to retest per section §63.11092(a). Envent continuously monitors and keeps a hardcopy (circular chart) record of combustor temperature that will meet the specifications listed in §63.11092(b)(1)(iii).

The Initial Notification of Compliance with Subpart BBBBBB was due 120 days after the effective date of the Subpart (January 10, 2008)—per §63.9(b)(2), which is incorporated by reference per Table 3 to Subpart BBBBBB—and was submitted. The Notification of Compliance Status with Subpart BBBBBB applied at the time the source became subject to the standard (January 10, 2011)—per §63.9(h)(1), which is also incorporated by reference per Table 3 to Subpart BBBBBB—and was also submitted. However, when the combustor is used as a control device instead of the permanent VRU, this will represent a change in the information submitted and EPA will be notified in writing within 15 days of that change in accordance with §63.9(j) (also incorporated by reference, per Table 3 to Subpart BBBBBB).

Staff reviewed the subpart discussed below in detail to verify inapplicability:

40 CFR 63 Subpart R National Emission Standards for Hazardous Air Pollutants – Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)

At the time of the last Title V permit renewal, the District confirmed that the terminal is not a major source of HAP and therefore, is not subject to 40 CFR 63 Subpart R

40 CFR 63 Subpart CC National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries

This facility does not have any petroleum refining process units, as defined in this subpart. Therefore, this subpart is not applicable to this facility.

6. ATCM COMPLIANCE: The list of all adopted Airborne Toxic Control Measures (<http://www.arb.ca.gov/toxics/atcm/atcm.htm>) was reviewed to determine if the proposed project is subject to one or more of these regulations. There are currently no ATCM regulations that apply to this source category.

IV. RECOMMENDATION: This temporary portable combustor and associated equipment should comply with all applicable District rules and regulations. The following is recommended:

- 1. PRELIMINARY DECISION** – Propose that an Authority to Construct be issued to Chevron USA Inc with the conditions on Authority to Construct No. 26114.
- 2. NOTICING FOR ERC USE** – Following the procedures in SMAQMD Rule 217, Section 110 and Section 401:

- a) Publish a public notice in the Sacramento Bee newspaper and request comments within the 30 day review period.
- b) Transmit to the California Air Resources Board and the U.S. EPA Region 9 the proposed Engineering Evaluation and Authority to Construct and request comments within the 30 day review period.
- c) Publish a public notice to the District website and request comments within the 30 day review period (not a SMAQMD Rule 217 requirement).

Refer to conditions in Authority to Construct No. 26114

REVIEWED BY: _____ **DATE:** _____

APPROVED BY: _____ **DATE:** _____

APPENDIX A

Major Modification Applicability Determination

In order to determine which calculation methodology to use for the BACT and offset trigger analysis, we must first determine if Chevron is a “major stationary source” and then whether the project is a “major modification.” The source is subject to both Rule 202 as well as 214 so the “major stationary source” determination must be determined for both rules.

Rule 202

Chevron is a “major stationary source” per Rule 202, Section 228 for VOC per the information presented below.

Pollutant	Major Source Threshold (TPY)	Chevron Permit Limit (TPY)	Major Source?
VOC	25	56.7	YES
NOx	25	0.9	NO
SO ₂	NA	0.0	NO
PM ₁₀	100 (or 100 tpy SOx as PM10 precursor)	0.0	NO
PM _{2.5}	100 (or 100 tpy NOx or SOx as PM _{2.5} precursor) (A)	0.0	NO
CO	100	3.7	NO

(A) At this time VOC and ammonia have not been determined to be a necessary part of the PM_{2.5} control strategy in the attainment demonstration nor have they been approved by EPA in the State Implementation Plan. As such they are not considered a PM_{2.5} precursor for the purposes of major stationary source threshold.

Rule 214

CPP is a “major stationary source” per Rule 214, Section 228 for VOC per the information presented below.

Pollutant	Major Source Threshold (TPY)	Chevron Permit Limit (TPY)	Major Source?
VOC	25	56.7	YES
NOx	25	0.9	NO
SO ₂	NA	0.0	NO
PM ₁₀	100 (or 100 tpy SOx as PM10 precursor)	0.0	NO
PM _{2.5}	100 (or 100 tpy NOx or SOx as PM _{2.5} precursor) (A)	0.0	NO
CO	NA	3.7	NA

(B) At this time VOC and ammonia have not been determined to be a necessary part of the PM_{2.5} control strategy in the attainment demonstration nor have they been approved by EPA in the State Implementation Plan. As such they are not considered a PM_{2.5} precursor for the purposes of major stationary source threshold.

The methodology for determining “major modification” is the same for either Rule 202 or 214. For those pollutants (VOC) for which the source is major, it must be determined whether the project is a “major modification”.

The emission increase of the project for VOC is 0.5 TPY. Since this is less than the significant level of 25 TPY, this modification is not major.

APPENDIX B

Emission Calculations

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

777 12th Street, 3rd Floor; Sacramento, CA 95814

Potential to Emit Calculations

ENGINEER: Brian Krebs

FACILITY NAME: Chevron USA Inc.

LOCATION: 2420 Front St., Sacramento, CA 95818

PROPOSAL: Installation of a temporary portable combustor for when the permanent VCU is undergoing maintenance

PROCESS: Bulk terminal loading rack and Tank #115; vapor collection and control

FLOW DIAGRAM: Not required

EQUIPMENT: Bulk terminal loading rack

CONTROL EQUIPMENT: 20 MMBtu/hr vapor combustion unit; LPG and/or natural gas pilot fuel.

ATC #	26114
NAICS #	424710
UTM East	
UTM North	

APPLICATION DATA:

Vapor Combustion Unit	Units	Formula Symbol	Reference
Rating =	20.0 MMBtu/hr	BR	Manufacturer Spec.
Flow Rate to Combustor =	500 scfm	ER	Manufacturer Spec.
Hydrocarbon Conc. =	55% volume as propane	Chc	Manufacturer Spec.
Exhaust Temperature =	1,460 deg Rankine (F+460)	ET	Manufacturer Spec.
Exhaust Volume =	34,000 acfm	EV	Manufacturer Spec.
Exhaust Diameter =	7 ft	-	Manufacturer Spec.
Fuel Consumption =	9,000 gpm	Fh	Manufacturer Spec.
Throughput Data	Units	Formula Symbol	Reference
Daily Throughput =	1,300,000 gallons gasoline	Td1	PO 23446
Quarterly Throughput =	24,700,000 gallons gasoline	Tq1	PO 23446
Annual Throughput =	49,400,000 gallons diesel	Tq3	PO 23446

ASSUMPTIONS:

	Units	Formula Symbol	Reference
Molar Volume =	385.3 ft ³ /mol	MV	District
F-Factor =	8,710 dscf/MMBtu	Fd	EPA Method 19
Gallons per cubic foot =	7.481 gallons/ft ³	CONVg	District
Propane =	44 lb/mol	MWc3	District
=	24,548 Btu/lb	HHV1	NFPA 58
=	2,488 Btu/ft ³	HHV2	NFPA 58
=	91,500 Btu/gal	HHV3	AP42 Appendix A
=	101,352 lb fuel/MMCF	Df	
=	6.50 grains S/100 ft ³		District
NO2 =	46 lb/mol	MWno2	District
SO2 =	64 lb/mol	MWso2	District
S =	32 lb/mol	MWs	District
CO =	28 lb/mol	Mwco	District
CO2 =	44 lb/mol	MWco2	District
C =	12 lb/mol	MWc	District
Carbon Content of Propane =	0.82 lb C/lb fuel	C	District
C to CO2 Conversion =	99.5% conversion	%CON	AP42, Table 1.5-1 (07/2008)
Diesel contribution =	12.7% of throughput	%dj	SDAPCD

EMISSION FACTORS:

VCU Emission Factors	Units	Formula Symbol	Reference
VOC	0.02 lb/1000 gallons	EFvoc	District BACT ^(A)
NOx	0.034 lb/1000 gallons	EFnox	District BACT ^(A)
SOx	1.5E-03 lb/1000 gallons	EFsox	See calculation
PM10	1.6E-03 lb/1000 gallons	EFpm	See calculations 2 & 3
PM2.5	1.6E-03 lb/1000 gallons	EFpm	See calculations 2 & 3

CO	0.15 lb/1000 gallons	EFco	Event's BAAQMD Permit
Lead	0.0 lb/1000 gallons	EFpb	-
GHG (CO2e)	28.7 lb/1000 gallons	EFghg	See calculations 2 & 3

^(A) Standards from District BACT Determination #164.

CALCULATIONS:

1. Determine uncontrolled emissions:

Bulk Transfer Emission Factor, **EFbu** ^(A) = (C × MWc3 × 1000) / (MV × CONvg) = 8.39570 lb/1000 gallons

^(A) CARB Emission Factor for Gasoline Bulk Transfer using the equation in Attachment 2 to the Revised Emission Factor for Gasoline Marketing Operations at California Gasoline Dispensing Facilities and the maximum concentration provided by the applicant (55% as propane).

2. Determine combustion emission factors using propane as a surrogate:

Combustion Emission Factors	Units	Formula Symbol	Reference
SOx	0.64960 lb/1000 gal	EFs	AP42, Table 1.5-1 (07/2008)
PM10	0.7 lb/1000 gal	EFp	AP42, Table 1.5-1 (07/2008)
PM2.5	0.7 lb/1000 gal	EFp	AP42, Table 1.5-1 (07/2008)
GHG (CO2e)	63.12 kg CO2e/MMBtu	EFco2e	40 CFR 98 Tables C1 & C2

3. Convert liquid propane emission factors to vapor equivalent:

Propane Equivalent, **PE** = EFbu × HHV1 × 1/HHV3 = 2.2524 gal propane/1000 gal vapor
 SOx Emission Factor, **EFsox** = EFs × PE = 0.00146318 lb/1000 gal vapor
 PM Emission Factor, **EFpm** = EFp × PE = 0.00157670 lb/1000 gal vapor
 EFghg = EFco2e × 2.204 lb/kg × EFbu × HHV1 = 28.67 lb/1000 gal vapor

4. Determine CO2 emission factor:

EFco2 = C × 1/MWc × mol CO2/mol C × MWco2 × Df/HHV × %CON = 121.868720 lb/MMBtu

5. Determine %CO2 in exhaust:

%CO2 = EFco2 × 1/MWco2 × 1/Fd × MV = 0.12252379 mol CO2/mol exhaust
 12.252379% CO2

6. Combustor emissions from loading rack

Throughput =

1,300,000 gal/day
24,700,000 gal/qtr
49,400,000 gal/yr

Pollutant	Emission Factor (lb/mgal) (A)	Potential to Emit			
		lb/day	lb/qtr	lb/yr	
VOC	0.02	26.0	494	988	
Nox	0.03	44.2	840	1,680	
Sox	1.46E-03	1.9	36	72	
PM10	1.58E-03	2.0	39	78	
PM2.5	1.58E-03	2.0	39	78	
CO	0.15	195.0	3,705	7,410	
Lead	N/A	N/A	N/A	N/A	
GHG	28.67	18.6	354	708	

7. Combustor emissions from Tank# 115

Operational period days per quarter	19 days/qtr	
Operational period days per year	38 days/yr	
Gallons per turnover	55,000 gal/turnover	
Number of turnovers per operational time period	1	
	2.894736842 mgal/day	
Tank standing losses	1105 lb/month	Tanks 4.09d - July
	35.64516129 lb/day	31 days in July
Working losses	10.91246837 lb/mgal	
	31.58872422 lb/day	
Equivalent daily throughput	8008 gal/day	
Equivalent quarterly throughput	152155 ga/qtr	
Equivalent annual throughput	304309 gal/yr	

Pollutant	Emission Factor (lb/mgal) (A)	Potential to Emit		
		lb/day	lb/qtr	lb/yr
VOC	0.02	0.2	3	6
Nox	0.03	0.3	5	10
Sox	1.46E-03	0.0	0	0
PM10	1.58E-03	0.0	0	0
PM2.5	1.58E-03	0.0	0	0
CO	0.15	1.2	23	46
Lead	N/A	N/A	N/A	N/A
GHG	28.67	0.1	2	4

8. Emissions from propane Vaporizer

Pollutant	Emission Factor (lb/mgal) (A)	Potential to Emit		
		lb/day	lb/qtr	lb/yr
VOC	0.8	0.0	1	2
Nox	8.5	0.5	9	19
Sox	0.650	0.0	1	1
PM10	0.7	0.0	1	2
PM2.5	0.7	0.0	1	2
CO	7.50	0.4	8	16
Lead	N/A	N/A	N/A	N/A
GHG	12729	0.4	7	14

9. Fugative Emissions from Components

Component Type	Service Type	# of Comp	Emission Factor					
			(kg/hr/source)	lb/hr	lb/day	lb/qtr	lb/yr	
Valves	Gas	63	1.30E-05	1.81E-03	0.0	1	2	
Pump seals	Gas	0	6.50E-05	0.00E+00	0.0	0	0	
Others	Gas	4	1.20E-04	1.06E-03	0.0	0	1	
Fittings	Gas	51	4.20E-05	4.72E-03	0.1	2	4	
					0.2	3	7	

10. Project Emissions

Pollutant	lb/day	lb/qtr	lb/yr
VOC	26.4	501	1003
Nox	45.0	854	1709
Sox	2.0	37	74
PM10	2.1	40	80
PM2.5	2.1	40	80
CO	196.6	3736	7472
Lead	N/A	N/A	N/A
GHG	19.1	363	727

11. Combustor Emissions for BACT

Pollutant	lb/day
VOC	26.2
Nox	44.5
Sox	1.9
PM10	2.1
PM2.5	2.1
CO	196.2
Lead	N/A
GHG	18.8

APPENDIX C

Emission Reduction Credits

SACRAMENTO METROPOLITAN



AIR QUALITY
MANAGEMENT DISTRICT

EMISSION REDUCTION CREDIT CERTIFICATE NO. 19-01231

IS HEREBY ISSUED TO
CHEVRON PRODUCTS COMPANY, A DIVISION OF CHEVRON U.S.A., INC.
2420 FRONT STREET
SACRAMENTO, CA 95818-1108

FOR ACTUAL EMISSION REDUCTIONS CREATED AT
MICHAELS COMPANY, 5800 ALDER AVENUE, SACRAMENTO, CA 95828

EMISSIONS UNIT: PAINT SPRAY BOOTH # 5 AND SPRAY BOOTH HEATER RATED AT 400,000 BTU/HR HEAT INPUT

THE FOLLOWING EMISSION REDUCTION CREDITS (IN POUNDS PER QUARTER) ARE HEREBY GRANTED
PURSUANT TO DISTRICT RULE 204:

POLLUTANT	1 st QTR	2 nd QTR	3 rd QTR	4 th QTR
REACTIVE ORGANIC COMPOUNDS (ROC)	-	700.0	700.0	-

SUBJECT TO THE FOLLOWING CONDITIONS

1. THE ISSUANCE OF THIS ERC CERTIFICATE SHALL NOT CONSTITUTE EVIDENCE OF COMPLIANCE WITH RULES AND REGULATIONS OF THE DISTRICT, OR AN ASSURANCE TO THE RECIPIENT THAT THE EMISSION REDUCTION CREDITS REPRESENTED BY THE ERC CERTIFICATE ARE AVAILABLE FROM THE DISTRICT BANK.
2. WHEN ERCS ARE TRANSMITTED BETWEEN PARTIES, THE TRANSFEROR'S ERC CERTIFICATE AND A COPY OF THE TRANSFER AGREEMENT SHALL BE SURRENDERED TO THE AIR POLLUTION CONTROL OFFICER BY THE TRANSFEREE WITHIN 30 DAYS OF THE DATE OF SUCH AGREEMENT.

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DATE ISSUED: 03-07-2019

ALBERTO AYALA, PH. D., M.S.E.
AIR POLLUTION CONTROL OFFICER

BY: *Alberto Ayala*

SIGNATURE OF REGISTERED OWNER

PRINTED NAME OF REGISTERED OWNER

COMPANY TITLE OF REGISTERED OWNER

ERC BANK USE:

ERC Transferred to _____

New ERC Certificate No. _____

Date Issued _____