



NOV -6 2012

Dean Leal  
Onyx Oil Service  
9530 Hageman Rd. Suite 93312  
Bakersfield, CA 93312

**Re: Notice of Preliminary Decision - Authority to Construct**  
**Project Number: S-1123391**

Dear Mr. Leal:

Enclosed for your review and comment is the District's analysis of Onyx Oil Service's application for an Authority to Construct for a 62.5 MMBtu/hr well test flaring operation, at various unspecified locations within SJVAPCD.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Leonard Scandura of Permit Services at (661) 392-5500.

Sincerely,

David Warner  
Director of Permit Services

DW: SDD/cp

Enclosures

**Seyed Sadredin**  
Executive Director/Air Pollution Control Officer

**Northern Region**  
4800 Enterprise Way  
Modesto, CA 95356-8718  
Tel: (209) 557-6400 FAX: (209) 557-6475

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1990 E. Gettysburg Avenue  
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34946 Flyover Court  
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NOV -6 2012

Mike Tollstrup, Chief  
Project Assessment Branch  
Stationary Source Division  
California Air Resources Board  
PO Box 2815  
Sacramento, CA 95812-2815

**Re: Notice of Preliminary Decision - Authority to Construct**  
**Project Number: S-1123391**

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of Onyx Oil Service's application for an Authority to Construct for a 62.5 MMBtu/hr well test flaring operation, at various unspecified locations within SJVAPCD.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

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Bakersfield Californian

**NOTICE OF PRELIMINARY DECISION  
FOR THE PROPOSED ISSUANCE OF  
AN AUTHORITY TO CONSTRUCT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Authority to Construct to Onyx Oil Service for a 62.5 MMBtu/hr well test flaring operation, at various unspecified locations within SJVAPCD.

The analysis of the regulatory basis for this proposed action, Project #S-1123391, is available for public inspection at [http://www.valleyair.org/notices/public\\_notices\\_idx.htm](http://www.valleyair.org/notices/public_notices_idx.htm) and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 34946 FLYOVER COURT, BAKERSFIELD, CA 93308.**



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

#### **IV. Process Description**

The flare will be used for well testing and mitigation of gas kicks during drilling mud recirculation. The well test flare is equipped with a propane pilot, automatic ignition system, and will combust gas produced during well testing. The flare will also be used to combust excess gas vented during drilling mud recirculation (mitigate gas kicks).

#### **V. Equipment Listing**

##### Equipment Description:

S-8220-1: 62.5 MMBTU/HR AIR ASSISTED MACTRONIC WELL TEST/DRILLING OPERATIONS (MITIGATE GAS KICKS DURING DRILLING) FLARE WITH 316SS FLARE TIP, CONTINUOUS PILOT AND SOLAR POWERED IGNITION SYSTEM, OPERATED AT VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD

#### **VI. Emission Control Technology Evaluation**

Emissions from the flare include oxides of nitrogen (NO<sub>x</sub>), carbon monoxide (CO), oxides of sulfur (SO<sub>x</sub>), volatile organic compounds (VOCs), and particulate emissions less than 10 micron (PM<sub>10</sub>).

##### Air Assist

Smoking may result from incomplete combustion due to the quantity and distribution of combustion air. Air assist ensures that the flare has enough air and turbulence to completely combust the gases for smokeless operation.

##### Propane Pilot and Automatic Ignition System

The flare will operate with a continuous propane/natural gas pilot and an automatic ignition system.

##### Visibility and VOC Control

Flares typically operate at 99% control efficiency for VOC. The well test flare being authorized by this project will be equipped with a shroud to reduce flame visibility, improve thermal destruction efficiency, and to prevent down drafts from extinguishing the flame.

#### **VII. General Calculations**

##### **A. Assumptions**

- No more than 1.5 MMscf/day and 294.1 MMscf/year of well gas will be combusted in this flaring operation; (Applicant request)
- Heating value of flared gas is 1,000 Btu/scf (proposed and APR 1720)
- Sulfur compound concentration (as H<sub>2</sub>S) will not exceed 1000 ppmv (proposed by applicant)

- Fugitive emissions are considered to be negligible compared to combustion VOC emissions from the flare.
- Pilot gas flow rate is assumed to be negligible when compared to emissions resulting from combustion of produced gas.

**B. Emission Factors**

Flare Emission Factors		
	lb/MMBtu	Source
NO <sub>x</sub>	0.068	FYI 83
*SO <sub>x</sub>	0.169	Mass Balance Equation
PM <sub>10</sub>	0.008	FYI 83
CO	0.370	FYI 83
VOC	0.063	FYI 83

$$* \frac{1,000 \text{ parts } S}{10^6 \text{ parts gas}} \times \frac{\text{lb} \cdot \text{mol}}{379.5 \text{ scf}} \times \frac{32 \text{ lb} \cdot S}{\text{lb} \cdot \text{mol}} \times \frac{64 \text{ lb} \cdot SO_2}{32 \text{ lb} \cdot S} \times \frac{\text{scf}}{1,000 \text{ Btu}} = 0.169 \frac{\text{lb} \cdot SO_2}{\text{MMBtu}}$$

**C. Calculations**

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

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

**2. Post Project Potential to Emit (PE2)**

Pollutant	Daily PE2		
	EF2 (lb/MMBtu)	Heat Input (MMBtu/day)	Annual PE2 (lb/day)
NO <sub>x</sub>	0.068	1500	102.0
SO <sub>x</sub>	0.169	1500	253.5
PM <sub>10</sub>	0.008	1500	39.0
CO	0.370	1500	555.0
VOC	0.063	1500	94.5

Pollutant	Annual PE2		
	EF2 (lb/MMBtu)	Heat Input (MMBtu/year)	Annual PE2 (lb/year)
NO <sub>x</sub>	0.068	294,100	19,999
SO <sub>x</sub>	0.169	294,100	49,703
PM <sub>10</sub>	0.008	294,100	2,353
CO	0.370	294,100	108,817
VOC	0.063	294,100	18,528

The emissions profile is included in **Attachment II**.

### 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.

Since the well testing operation is considered a new stationary source, there are no valid ATCs, PTOs, or ERCs at the Stationary Source; therefore, the SSPE1 will be equal to zero.

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

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) 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.

Since the flare is considered its own stationary source, the SSPE2 calculated below contains only its emissions.

Post Project Stationary Source Potential to Emit [SSPE2] (lb/year)					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
S-8220-1-0	19,999	49,703	2353	108,817	18,528
Post Project SSPE (SSPE2)	19,999	49,703	2353	108,817	18,528

## 5. Major Source Determination

Pursuant to Section 3.23 of District Rule 2201, a Major Source is a stationary source with post-project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.23.2 states, "for the purposes of determining major source status, the SSPE2 shall not include 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."

Major Source Determination (lb/year)					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Pre-Project SSPE (SSPE1)	0	0	0	0	0
Post Project SSPE (SSPE2)	19,999	49,703	2353	108,817	18,528
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No

As seen in the table above, the flare by itself is not an existing Major Source and also is not becoming a Major Source as a result of this project.

## 6. Baseline Emissions (BE)

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

Pursuant to Section 3.7 of District Rule 2201, 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 3.22 of District Rule 2201.

Since this flares is new emissions units, BE = PE1 = 0 for all pollutants.

## 7. SB 288 Major Modification

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



As discussed in Section VII.C.5 above, the facility is not a Major Source for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, or VOC emissions; therefore, the project does not constitute a SB 288 Major Modification for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, or VOC emissions.

### 8. Federal Major Modification

As discussed in Section VII.C.5 above, the facility is not a Major Source for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, or VOC emissions; therefore, the project does not constitute a Federal Major Modification for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, or VOC emissions. Additionally, since the facility is not a major source for PM10 (140,000 lb/year), it is not a major source for PM2.5 (200,000 lb/year).

### 9. Quarterly Net Emissions Change (QNEC)

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

$$\text{QNEC (lb/qtr)} = \text{PE2 (lb/qtr)} - \text{QBE (lb/qtr)}$$

Quarterly NEC for Units S-7045-15			
Pollutant	PE2 (lb/yr)	PE1 (lb/yr)	QNEC (lb/qtr)
NO <sub>x</sub>	19,999	0	5000
SO <sub>x</sub>	49,703	0	12,426
PM <sub>10</sub>	2,353	0	588
CO	108,817	0	27,204
VOC	18,528	0	4632

## VIII. Compliance

### Rule 2201 New and Modified Stationary Source Review Rule

#### A. Best Available Control Technology (BACT)

Rule 1020, Section 3.46 excludes air pollution abatement operations from the definition of "source operation". Since the well test flare is designed to control the VOC and H<sub>2</sub>S emissions from the well, the flare is considered an air pollution abatement operation and is not an emissions unit. Therefore, the well drilling and testing operation may be subject to BACT, but the flare used as a control device is not.

#### 1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless exempted pursuant to Section 4.2, BACT shall be required for the following actions:\*

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB288 Major Modification or a Federal Major Modification, as defined by the rule.

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

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

As seen in Section VII.C.2 of this evaluation, the applicant is proposing to install a well drilling and testing operation with PE greater than 2 lb/day for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC. As discussed in above, the flare is a VOC control device (not emissions units); therefore, BACT is triggered only for VOC only.

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

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

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

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

**d. Major Modification**

As discussed in Section VII.C.7 and C.8 above, this project does not constitute a SB288 or Federal Major Modification; therefore, BACT is not triggered.

**2. BACT Guideline**

BACT Guideline 1.4.7 applies to [Waste Gas Flare – Oilfield Well Drilling and Testing Operation, < 50 MMscf/day].

See Attachment III.

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

- NO<sub>x</sub>: Not applicable
- SO<sub>x</sub>: Not applicable
- PM<sub>10</sub>: Not applicable
- VOC: Elevated flare with automatic ignition system (equivalent to propane fueled pilot light) – for well testing

**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.

<b>Offset Determination (lb/year)</b>					
	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>CO</b>	<b>VOC</b>
Post Project SSPE (SSPE2)	19,999	49,703	2,353	108,817	18,528
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	No

**2. Quantity of Offsets Required**

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

**C. Public Notification**

**1. Applicability**

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB288 Major Modifications,
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed, and/or
- d. Any project with an SSPE of greater than 20,000 lb/year for any pollutant.

**a. New Major Sources, Federal Major Modifications, and SB288 Major Modifications**

As demonstrated in VII.C.7, the facility is not new and this project does not constitute a SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not required.

**b. PE > 100 lb/day**

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. As seen in Section VII.C.2 above, this project includes a new emission unit with a PE greater than 100 lb/day of NO<sub>x</sub>, SO<sub>x</sub>, and CO; therefore, public noticing for PE > 100 lb/day purposes is required.

**c. Offset Threshold**

The following table compares the SSPE1 with the SSPE2 (typical of all flares in this project) in order to determine if any offset thresholds have been surpassed with this project.

Offset Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO <sub>x</sub>	0	19,999	20,000 lb/year	No
SO <sub>x</sub>	0	49,703	54,750 lb/year	No
PM <sub>10</sub>	0	2,353	29,200 lb/year	No
CO	0	108,817	200,000 lb/year	No
VOC	0	18,528	20,000 lb/year	No

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

**d. SSIPE > 20,000 lb/year**

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. SSIPE = SSPE2 – SSPE1. The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

<b>Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice</b>					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO <sub>x</sub>	19,999	0	19,999	20,000 lb/year	No
SO <sub>x</sub>	49,703	0	49,703	20,000 lb/year	Yes
PM <sub>10</sub>	2,353	0	2,353	20,000 lb/year	No
CO	108,817	0	108,817	20,000 lb/year	Yes
VOC	18,528	0	18,528	20,000 lb/year	No

As demonstrated above, the SSIPE for SO<sub>x</sub> and CO was greater than 20,000 lb/year; therefore, public noticing for SSIPE purposes is required.

## 2. Public Notice Action

As discussed above, public noticing is required for this project for an increase in SO<sub>x</sub> and CO emissions in excess of 20,000 lb/yr. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

## D. Daily Emission Limits (DELs)

Daily Emissions Limitations (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.

- Emission rates shall not exceed any of the following: 0.068 lb-NO<sub>x</sub>/MMBtu (as NO<sub>2</sub>), 0.008 lb-PM<sub>10</sub>/MMBtu, 0.37 lb-CO/MMBtu, or 0.063 lb-VOC/MMBtu. [District Rules 2201, 4201 and 4801]
- Sulfur compound concentration of gas flared shall not exceed 59.2 gr/100 scf. [District Rules 2201 and 4801] N
- Daily and annual amounts of gas flared shall not exceed 1.5 MMscf/day or 294.1 MMscf/yr. [District Rules 2201 and 4102]

## E. Compliance Assurance

### 1. Source Testing

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

### 2. Monitoring

Monitoring of visible emissions will be required to ensure the flare complies with the particulate matter limit. The following condition will be listed on the ATC:

- Permittee shall inspect the flare in operation for visible emissions no less frequently than once every two weeks. If visible emissions are observed, corrective action shall be taken. If visible emissions persist, an EPA Method 9 test shall be performed within 72 hours. [District Rule 2201]

### **3. Recordkeeping**

Recordkeeping is required to demonstrate compliance with the offset; public notification and daily emission limit requirements of Rule 2201. The following conditions will appear on the ATC:

- Permittee shall document compliance with well gas sulfur compound concentration limit by performing sulfur content analysis of well gas upon startup at each new location of operation of flare. [District Rule 2201]
- Permittee shall maintain accurate daily records indicating flare location, flared gas sulfur content at each location, and daily and annual rates of gas flared; and such records shall be made readily available for District inspection upon request for a minimum of 5 years. [District Rules 2201 and 4311]

### **4. Reporting**

The facility is required to report the location at which the flare is operating. The following condition will be placed on the ATCs to show compliance with this section.

- Permittee shall notify the District Compliance Division of each location at which the operation is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 2201]

### **F. Ambient Air Quality Analysis (AAQA)**

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

The results from the Criteria Pollutant Modeling are as follows:

- Permittee shall inspect the flare in operation for visible emissions no less frequently than once every two weeks. If visible emissions are observed, corrective action shall be taken. If visible emissions persist, an EPA Method 9 test shall be performed within 72 hours. [District Rule 2201]

### **3. Recordkeeping**

Recordkeeping is required to demonstrate compliance with the offset; public notification and daily emission limit requirements of Rule 2201. The following conditions will appear on the ATC:

- Permittee shall maintain accurate records of the flares visible emissions and the corrective actions taken if visible emissions are present.
- Permittee shall document compliance with well gas sulfur compound concentration limit by performing sulfur content analysis of well gas upon startup at each new location of operation of flare. [District Rule 2201]
- Permittee shall maintain accurate daily records indicating flare location, flared gas sulfur content at each location, and daily and annual rates of gas flared; and such records shall be made readily available for District inspection upon request for a minimum of 5 years. [District Rules 2201 and 4311]

### **4. Reporting**

The facility is required to report the location at which the flare is operating. The following condition will be placed on the ATCs to show compliance with this section.

- Permittee shall notify the District Compliance Division of each location at which the operation is located in excess of 24 hours. Such notification shall be made in writing and no later than 48 hours after starting operation at the location. [District Rule 2201]

### **F. Ambient Air Quality Analysis (AAQA)**

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

The results from the Criteria Pollutant Modeling are as follows:

**Criteria Pollutant Modeling Results\***

Diesel ICE	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO <sub>x</sub>	Pass	X	X	X	Pass
SO <sub>x</sub>	Pass	Pass	X	Pass	Pass
PM <sub>10</sub>	X	X	X	Pass	Pass
PM <sub>2.5</sub>	X	X	X	Pass	Pass

\*Results were taken from the attached PSD spreadsheet.

<sup>1</sup>The project was compared to the 1-hour NO<sub>2</sub> National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures.

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

As shown, the calculated contribution of criteria pollutants will not exceed the EPA significance level. This project is not expected to cause or make worse a violation of an air quality standard.

**Rule 2520 Federally Mandated Operating Permits**

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

**Rule 4001 New Source Performance Standards (NSPS)**

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

**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 produced gas flaring operations.

**Rule 4101 Visible Emissions**

Per Section 5.0, no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity).

As the flare is equipped with air-assist and fired solely on produced gas, smokeless operation is expected and visible emissions are not expected to exceed Ringelmann 1 or 20% opacity. The following condition will be listed on the ATCs to ensure compliance with this rule:

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



## **Rule 4102 Nuisance**

Section 4.0 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. The following condition will be listed on the ATCs to ensure compliance:

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

## **California Health & Safety Code 41700 (Health Risk Assessment)**

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

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

## **Discussion of T-BACT**

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

The following conditions are required to ensure compliance with the HRA:

- The flare shall not be located within 25 meters of the facility fenceline. [District Rule 2201 and 4102]

## **Rule 4201 Particulate Matter Concentration**

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

Emissions from the flare are the result of burning gaseous fuel only. Particulate emissions greater than 0.1 gr/dscf are not expected. The following condition will be listed on the ATCs to ensure compliance with this rule:

- Emission rates shall not exceed any of the following: 0.068 lb-NO<sub>x</sub>/MMBtu (as NO<sub>2</sub>), 0.008 lb-PM<sub>10</sub>/MMBtu, 0.37 lb-CO/MMBtu, or 0.063 lb-VOC/MMBtu. [District Rules 2201, 4201 and 4801]

## Rule 4301 Fuel Burning Equipment

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

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

## Rule 4311 Flares

The purpose of this Rule is to limit the emissions of volatile organic compounds (VOC), oxides of nitrogen (NO<sub>x</sub>), and sulfur oxides (SO<sub>x</sub>) from the operation of flares.

Pursuant to Section 4.3, except for the recordkeeping requirements in Section 6.1.4 the requirements of this rule shall not apply to any stationary source that has the potential to emit, for all processes, less than ten (10.0) tons per year of VOC and less than ten (10.0) tons per year of NO<sub>x</sub>.

According to the SSPE2, this facility produces less than 10 tons each of NO<sub>x</sub> and VOC; therefore, only the recordkeeping requirements of Section 6.14 are applicable to this flare.

**Section 6.14** requires that operators claiming an exemption pursuant to Section 4.3 shall record annual throughput, material usage, or other information necessary to demonstrate an exemption under that section.

To utilize this exemption, the facility-wide emissions of NO<sub>x</sub> and VOC shall each remain below 10 tons. Since this evaluation has demonstrated that this facility's emissions are currently below the exemption's emissions limits (SSPE2 calculated previously) compliance with this exemption is expected. The following condition will ensure compliance:

- Permittee shall maintain accurate daily records indicating flare location, flared gas sulfur content at each location, and daily and annual rates of gas flared; and such records shall be made readily available for District inspection upon request for a minimum of 5 years. [District Rules 2201 and 4311]

## Rule 4801 Sulfur Compounds

Rule 4801 requires that sulfur compound emissions (as SO<sub>2</sub>) shall not exceed 0.2% by volume. Using the ideal gas equation, the proposed flare sulfur compound emissions are calculated as follows (using limits of 0.169 lb·SO<sub>2</sub>/MMBtu and 1,000 Btu/dscf):

$$0.169 \frac{\text{lb} \cdot \text{SO}_2}{\text{MMBtu}} \times \frac{1,000 \text{ Btu}}{\text{scf}} \times \frac{379.5 \text{ scf}}{\text{lb} \cdot \text{mol}} \times \frac{\text{lb} \cdot \text{mol}}{32 \text{ lb} \cdot \text{S}} \times \frac{32 \text{ lb} \cdot \text{S}}{64 \text{ lb} \cdot \text{SO}_2} = 1002 \text{ ppm}$$

$$\frac{0.169 \text{ lb} \cdot \text{SO}_x}{\text{MMBtu}} \left( \frac{1,000 \text{ Btu}}{\text{dscf}} \right) \frac{\text{MMBtu}}{10^6 \text{ Btu}} \left( \frac{7,000 \text{ gr}}{1 \text{ lb}} \right) \frac{32 \text{ lb} \cdot \text{S}}{64 \text{ lb} \cdot \text{SO}_2} = 59.2 \frac{\text{gr} \cdot \text{S}}{100 \text{ dscf}}$$

Since 1002 ppmv is  $\leq$  2,000 ppmv, this flare is expected to comply with Rule 4801. Therefore, the following condition will be listed on the ATC to ensure compliance:

- Sulfur compound concentration of gas flared shall not exceed 59.2 gr/100 scf. [District Rules 2201 and 4801] N

#### **California Health & Safety Code 42301.6 (School Notice)**

This transportable equipment will not be allowed to operate within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required. The following condition will be listed on the permits to ensure compliance:

The equipment shall not be located within 1000 ft. of any K-12 school. [CH&SC 42301.6]

#### **California Environmental Quality ACT (CEQA)**

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

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- 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.

The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity consists of issuing a permit for a piece of transportable equipment to be used at various locations within the District. The District makes the following findings regarding this activity: 1) Issuance of the permit does not have a significant environmental impact. 2) Assessment of potential environmental effects resulting from the use of the transportable equipment on a development project is the responsibility of the Lead Agency approving the specific project, and will be determined on a project specific basis. The District has determined that no additional findings are required.

#### **IX. Recommendation**

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATC S-8220-1-0 subject to the permit conditions on the attached draft ATC in **Attachment III**.

**X. Billing Information**

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-8220-1-0	3020-02-H	62.5 MMBtu/hr	\$1030.00

**Attachments**

- I: Emissions Profiles
- II: HRA/AAQA
- III. BACT Guideline & Top-Down BACT Analysis
- IV: Draft ATC

# **ATTACHMENT I**

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## **Emissions Profile**

Permit #: S-8220-1-0      Last Updated  
Facility: ONYX OIL SERVICE 10/16/2012    DAVIDSOS

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	19999.0	46703.0	2353.0	108817.0	18528.0
Daily Emis. Limit (lb/Day)	102.0	253.5	39.0	555.0	94.5
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	5000.0	12426.0	588.0	27204.0	4632.0
Q2:	5000.0	12426.0	588.0	27204.0	4632.0
Q3:	5000.0	12426.0	588.0	27204.0	4632.0
Q4:	5000.0	12426.0	588.0	27204.0	4632.0
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 II

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HRA/AAQA

## San Joaquin Valley Air Pollution Control District Risk Management Review

To: Steve Davidson – Permit Services  
 From: Kyle Melching – Technical Services  
 Date: October 11, 2012  
 Facility Name: Oxyn Oil Service  
 Location: Various Unspecified Locations  
 Application #(s): S-8220-1-0  
 Project #: S-1123391

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### A. RMR SUMMARY

Categories	RMR Summary		
	Produced Gas Flare (Unit 1-0)	Project Totals	Facility Totals
Prioritization Score	0.76*	0.76	<1.0
Acute Hazard Index	N/A	N/A	0.00
Chronic Hazard Index	N/A	N/A	0.00
Maximum Individual Cancer Risk (10 <sup>-6</sup> )	N/A	N/A	0.00
T-BACT Required?	No		
Special Permit Conditions?	Yes		

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

#### Proposed Permit Conditions

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

#### Unit # 1-0

1. The flare must be operated at least 25 m from the property boundaries.



## B. RMR REPORT

### I. Project Description

Technical Services received a request on October 11, 2012, to perform an Ambient Air Quality Analysis and a Risk Management Review for one 0.0625 mmscf/hr produced gas flare. This is the same flare that was authorized by ATC, S-7620-1-0 in project S-1093875.

### II. Analysis

Toxic emissions were calculated using Emission factors for Waste Gas-Fired External Combustion flares. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the project was less than 1.0 (see RMR Summary Table); Therefore, no further evaluation is required.

The following parameters were used for the review:

Analysis Parameters Unit 1-0			
Produced Gas Combustion (mmscf/hr)	0.0625	Location Type	Rural
Produced Gas Combustion (mmscf/yr)	294	Closest Receptor (m)	1000
Fuel Type	Produced Gas	Type of Receptor	Business/Residence

For the AAQA, stack parameter were calculated utilizing District Approved: Flare Modeling Parameter Estimator. The AERMOD model was used, with the parameters and meteorological data for 2005-2009 from Bakersfield to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid.

Technical Services performed modeling for criteria pollutants CO, NO<sub>x</sub>, SO<sub>x</sub> and PM<sub>10</sub>; as well as a RMR. The emission rates used for criteria pollutant modeling were 23.13 lb/hr CO, 4.25 lb/hr NO<sub>x</sub>, 10.56 lb/hr SO<sub>x</sub>, and 1.63 lb/hr PM<sub>10</sub>.

The results from the Criteria Pollutant Modeling are as follows:

#### Criteria Pollutant Modeling Results\*

Diesel ICE	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO <sub>x</sub>	Pass <sup>1</sup>	X	X	X	Pass
SO <sub>x</sub>	Pass	Pass	X	Pass	Pass
PM <sub>10</sub>	X	X	X	Pass	Pass
PM <sub>2.5</sub>	X	X	X	Pass	Pass

\*Results were taken from the attached PSD spreadsheet.

<sup>1</sup>The project was compared to the 1-hour NO<sub>2</sub> National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures.

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

### **III. Conclusion**

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

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

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

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. Toxic emissions summary
- D. Prioritization score
- E. Facility Summary
- F. AAQA Summary

# **ATTACHMENT III**

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BACT Guideline  
&  
Top-Down BACT Analysis

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.4.7\***

Last Update 8/27/1999

**Waste Gas Flare - Oilfield Well Drilling and Testing Operation, < 50 MMscf/day**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	Elevated Flare with propane fueled pilot light		

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**

## **Top Down BACT Analysis for NO<sub>x</sub>, SO<sub>x</sub> and PM<sub>10</sub>**

Rule 1020, Section 3.46 excludes air pollution abatement operations from the definition of "source operation". Since the flare is designed to control the VOC and H<sub>2</sub>S emissions, the flare is considered an air pollution abatement operation and is exempt from the definition of emissions unit. Even though the proposed operations may be subject BACT, the control device selected as BACT is not. Therefore, BACT is not required for NO<sub>x</sub>, SO<sub>x</sub> and PM<sub>10</sub>.

## **Top Down BACT Analysis for VOC**

### **1. Well Testing**

#### **a. Step 1 - Identify all control technologies**

The SJVUAPCD BACT Clearinghouse Guideline 1.4.7, 1st quarter 2006, identifies technologically feasible and achieved in practice BACT for VOC emissions from Waste Gas Flares – Oilfield well drilling and testing operation < 50 MMscf/day, as follows:

1. Elevated Flare with propane fueled pilot light

#### **b. Step 2 - Eliminate technologically infeasible options**

There are no technologically feasible options.

#### **c. Step 3 - Rank remaining options by control effectiveness**

1. Elevated Flare with propane fueled pilot light

#### **d. Step 4 - Cost effectiveness analysis**

Because the applicant is proposing the control technology shown to be effective in step 3 above, a cost effectiveness analysis is not required.

#### **e. Step 5 - Select BACT**

VOC emissions control using Elevated Flare with propane fueled pilot light control method is selected as BACT.

# ATTACHMENT IV

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Draft ATC

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: S-8220-1-0

LEGAL OWNER OR OPERATOR: ONYX OIL SERVICE  
MAILING ADDRESS: 9530 HAGEMAN ROAD, SUITE B #398  
BAKERSFIELD, CA 93312

LOCATION: VARIOUS LOCATIONS  
BAKERSFIELD, CA

**EQUIPMENT DESCRIPTION:**

62.5 MMBTU/HR AIR ASSISTED MACTRONIC WELL TEST/DRILLING OPERATIONS (MITIGATE GAS KICKS DURING DRILLING) FLARE WITH 316SS FLARE TIP, CONTINUOUS PILOT AND SOLAR POWERED IGNITION SYSTEM, OPERATED AT VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD

**CONDITIONS**

1. The flare shall not be located within 1000 ft. of any K-12 school. [CH&SC 42301.6]
2. The flare shall not be located within 25 meters of the facility fenceline. [District Rules 2201 and 4102]
3. Flare shall only be used to combust gas released during well testing. [District Rule 2201]
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. Permittee shall notify the District Compliance Division of each location at which the operation is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 2201]
6. Operation at any specific location by this unit shall not exceed 1 year. [District Rule 4102]
7. The unit must not be located and operated at an existing facility or operation such that it becomes part of an existing stationary source as defined by District Rule 2201. [District Rule 2201]
8. 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 5% opacity. [District Rules 2201 and 4101]
9. Flare shall be equipped with operational automatic re-ignition provisions. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director, APCO

**DAVID WARNER**, Director of Permit Services

S-8220-1-0 : Oct 30 2012 2:20PM -- DAVIDSOS : Joint Inspection NOT Required

10. Gas line to flare shall be equipped with operational, volumetric flow rate indicator. [District Rule 2201]
11. Daily and annual amounts of gas flared shall not exceed 1.5 MMscf/day nor 294.1 MMscf/yr. [District Rules 2201 and 4102]
12. Sulfur compound concentration of gas flared shall not exceed 59.2 gr/100 scf. [District Rules 2201 and 4801]
13. Emission rates shall not exceed any of the following: 0.068 lb-NO<sub>x</sub>/MMBtu (as NO<sub>2</sub>), 0.008 lb-PM<sub>10</sub>/MMBtu, 0.37 lb-CO/MMBtu, or 0.063 lb-VOC/MMBtu. [District Rules 2201, 4201, and 4801]
14. The flare shall be operated according to the manufacturer's specifications, a copy of which shall be maintained on site. [District Rule 2201]
15. Permittee shall inspect the flare in operation for visible emissions no less frequently than once every two weeks. If visible emissions are observed, corrective action shall be taken. If visible emissions persist, an EPA Method 9 test shall be performed within 72 hours. [District Rule 2201]
16. Permittee shall document compliance with well gas sulfur compound concentration limit by performing sulfur content analysis of well gas upon startup at each new location of operation of flare. [District Rule 2201]
17. The following test methods shall be used for well gas sulfur content: ASTM D3246 or double GC for H<sub>2</sub>S and mercaptan. [District Rule 1081]
18. Permittee shall maintain accurate daily records indicating flare location, flared gas sulfur content at each location, and daily and annual rates of gas flared; and such records shall be made readily available for District inspection upon request for a minimum of 5 years. [District Rules 2201 and 4311]

DRAFT