



JUL 1 2 2010

Barry Pierlot
Weatherford International, Inc
P.O. Box 31
Santa Paula, CA 93061-0031

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: S-1102746

Dear Mr. Pierlot:

Enclosed for your review and comment is the District's analysis of Weatherford International, Inc's application for an Authority to Construct for two transportable well test flares, at various unspecified locations within the San Joaquin Valley Air Pollution Control District.

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. Richard Edgehill of Permit Services at (661) 392-5617.

Sincerely,



David Warner
Director of Permit Services

DW: RUE/cm

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

Central Region (Main Office)
1990 E. Gettysburg Avenue
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Southern Region
34946 Flyover Court
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JUL 12 2010

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-1102746

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of Weatherford International, Inc's application for an Authority to Construct for two transportable well test flares, at various unspecified locations within the San Joaquin Valley Air Pollution Control District.

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 Weatherford International, Inc for two transportable well test flares, at various unspecified locations within the San Joaquin Valley Air Pollution Control District.

The analysis of the regulatory basis for this proposed action, Project #S-1102746, is available for public inspection at 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.**

**San Joaquin Valley Air Pollution Control District
Authority to Construct
Application Review
Well Test Flares**

Facility Name:	Weatherford International Inc	Date:	July 12, 2010
Mailing Address:	PO Box 31 Santa Paula, CA 93061	Engineer:	Richard Edgehill
Contact Person:	Barry Pierlot and Robert Hassebrock	Lead Engineer:	Richard Karrs
Telephone:	(307) 362-4224 (BP), (805) 525-6679 (RH), (805) 340-6279 (cell RH)		
Application #s:	S-7803-1-0, '-2-0		
Project #:	S-1102746		
Deemed Complete:	June 10, 2010		

I. Proposal

Weatherford International Inc (Weatherford) has requested Authorities to Construct for two transportable well testing flares. The flares will be operated at various unspecified locations within the District.

Please note that District Policy SSP 1915 requires that portable flares be permitted according to District Policy APR 1020 which states that "an emissions unit with various unspecified locations must be prevented (by permit condition) from becoming part of another stationary source." The following condition from APR 1020 will be placed on the permit to reflect this requirement:

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]

Though included under the same facility number (S-7803), each of the proposed well test flares operated by Weatherford is a separate stationary source and may not be operated at the same location as any other Weatherford permit unit. Therefore, each flare will be considered a stationary source. The following condition will be placed on the permit to ensure it is not operated at the same facility as another Weatherford permit unit,

Flare shall not be operated in well testing operations at any location in conjunction with any other flare or combustion equipment operated by Weatherford International Inc. [District Rule 2201]

The project triggers BACT for VOCs and public notice. Offsets are not required.

II. Applicable Rules

Rule 2020	Exemptions (12/20/07)
Rule 2201	New and Modified Stationary Source Review Rule (12/18/08)

Rule 2520 Federally Mandated Operating Permits (6/21/01) – *Not Applicable: See Compliance Section for Explanation*
Rule 4101 Visible Emissions (2/17/05)
Rule 4102 Nuisance (12/17/92)
Rule 4201 Particulate Matter Concentration (12/17/92)
Rule 4311 Flares (6/15/06)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The equipment will be located at various unspecified locations within the District. The equipment will not be located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

After drilling petroleum production wells are tested to establish flow rates and pressure. The proposed well test flares are equipped with a continuous pilot and automatic (flow sensing) ignition system and is used to combust gas produced during testing. The unit is also equipped with a gas/liquid separator.

Proposed Well Testing Flares

Both the 8.0 MMscf/day and 14.1 MMscf/day units are Flow Specialties Inc. Model UL4060STLW flares with a 6 inch opening. The 8.0 MMscf/day and 14.1 MMscf/day flares differ in height, with the 14.1 MMscf/day flare being 20 ft higher (as a simple add-on section). The flares include a vortex mixer for mixing with air and operate smokeless.

Solar Powered Auto ignition System

Propane is not used as a pilot fuel but is available as needed for conditioning of the gas stream to produce a cleaner burn. A solar powered electronic sparker (auto ignition system) is used.

Gas/Liquid Separator

A gas/liquid phase separator is upstream of the flare with separated gas discharging to the flare.

V. Equipment Listing

S-7581-1-0: WELL TESTING OPERATION WITH TRANSPORTABLE 8.0 MMSCF/DAY FLOW SPECIALTIES MODEL UL4060STLW FLARE (OR EQUIVALENT) WITH AUTOMATIC FLOW SENSING PILOT IGNITION SYSTEM, VORTEX AIR MIXER, OPTIONAL PROPANE MAKEUP GAS, AND PHASE SEPARATOR(S) VENTED TO FLARE OPERATED AT VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD

S-7581-2-0: WELL TESTING OPERATION WITH TRANSPORTABLE 14.1 MMSCF/DAY FLOW SPECIALTIES MODEL UL4060STLW FLARE (OR EQUIVALENT) WITH AUTOMATIC FLOW SENSING PILOT IGNITION SYSTEM, VORTEX AIR MIXER, OPTIONAL PROPANE MAKEUP GAS, AND PHASE SEPARATOR(S) VENTED TO FLARE OPERATED AT VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD

As per District policy 1035 Flexibility in Equipment Descriptions in ATCs, some flexibility in the final specifications of the equipment will be allowed stated in the following ATC conditions:

The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] N

The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2010] N

Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201] N

No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] N

VI. Emission Control Technology Evaluation

The well being tested is considered the emissions unit, while the flare is considered a VOC control device. However, to ensure that the flare operates correctly, and is designed properly, the District requires well testing flares to be permitted and they are subject to applicable rules and regulations. Flares typically achieve greater than 99% destruction efficiency of VOCs. The proposed flare operates with a continuous pilot and automatic ignition system and is equipped with a vortex air mixer to prevent smoking.

A photograph of the flare is provided in **Attachment I**.

Rule 1020, Section 3.46 excludes air pollution abatement operation from the definition of "source operation". Since the test flare is designed to control the VOC and H₂S emissions from the well, the flare is considered an air pollution abatement operation and is not an emissions unit. Therefore, the testing operation may be subject to BACT but the control device selected as BACT is not.

VII. General Calculations

A. Assumptions

- The maximum daily quantity of gas combusted in flare S-7803-1-0 is 8.0 MMscf/day.

- The maximum daily quantity of gas combusted in flare S-7803-2-0 is 14.1 MMscf/day.
- The maximum annual quantity of gas combusted in each of flares S-7803-1 and '-2 is 288 MMscf/yr to avoid offsets (District policy APR 1020 states that "Offsets require site-specific analysis. Therefore, permits with various unspecified locations can only be issued for units that are exempt from offsets or have emissions below offset trigger levels.")
- The heating value of the flared gas is 1,000 Btu/scf.
- The flared natural gas will have a H₂S content less than 5 gr/100 scf, measured as sulfur (default assumed).
- The phase separator(s) associated with the flares do not require a separate permit but are associated with the flare permit units as a source of fugitive emissions which are assumed to be insignificant (and neglected) relative to the flare VOC emissions.

B. Emission Factors

Per District FYI 83, the following emission factors shall be used for the flares:

Flare Emission Factors		
	lb/MMBtu	Source
NO _x	0.068	FYI 83 (AP 42 Sec 13.5)
*SO _x	0.0143	Mass Balance Equation
PM ₁₀	0.008	FYI 83 –BACT (AP 42 Sec 13.5)
CO	0.37	FYI 83 (AP 42 Sec 13.5)
VOC	0.063	FYI 83(AP 42 Sec 13.5)

*The emission factor is based on a sulfur concentration of 5 gr/100 scf.
(5 gr/0.0001 MMscf)(lb/7000 gr)(64 lb-SO₂/32 lb S)(MMscf/1,000 MMBtu) = 0.0143 lb/MMBtu

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Since the flares are new emission units, PE1 = 0 for all criteria pollutants.

2. Post Project Potential to Emit (PE2)

Daily PE2

S-7803-1-0:

The daily potential to emit for the flare is calculated as follows, and summarized in the table below:

$$\begin{aligned} PE2_{NO_x} &= (0.068 \text{ lb/MMBtu}) * (1,000 \text{ MMBtu/ MMscf}) * (8.0 \text{ MMscf/day}) \\ &= 544.0 \text{ lb-NO}_x/\text{day} \end{aligned}$$

$$\begin{aligned} PE2_{SO_x} &= (0.0143 \text{ lb/MMBtu}) * (1,000 \text{ MMBtu/ MMscf}) * (8.0 \text{ MMscf/day}) \\ &= 114.4 \text{ lb-SO}_x/\text{day} \end{aligned}$$

$$\begin{aligned} PE2_{PM10} &= (0.008 \text{ lb/MMBtu}) * (1,000 \text{ MMBtu/ MMscf}) * (8.0 \text{ MMscf/day}) \\ &= 64.0 \text{ lb-PM}_{10}/\text{day} \end{aligned}$$

$$\begin{aligned} PE2_{CO} &= (0.37 \text{ lb/MMBtu}) * (1,000 \text{ MMBtu/ MMscf}) * (8.0 \text{ MMscf/day}) \\ &= 2,960 \text{ lb-CO/day} \end{aligned}$$

$$\begin{aligned} PE2_{VOC} &= (0.063 \text{ lb/MMBtu}) * (1,000 \text{ MMBtu/ MMscf}) * (8.0 \text{ MMscf/day}) \\ &= 504.0 \text{ lb-VOC/day} \end{aligned}$$

S-7803-2-0:

The daily potential to emit for the flare is calculated as follows, and summarized in the table below:

$$\begin{aligned} PE2_{NOx} &= (0.068 \text{ lb/MMBtu}) * (1,000 \text{ MMBtu/ MMscf}) * (14.1 \text{ MMscf/day}) \\ &= 958.8 \text{ lb-NO}_x/\text{day} \end{aligned}$$

$$\begin{aligned} PE2_{SOx} &= (0.0143 \text{ lb/MMBtu}) * (1,000 \text{ MMBtu/ MMscf}) * (14.1 \text{ MMscf/day}) \\ &= 201.6 \text{ lb-SO}_x/\text{day} \end{aligned}$$

$$\begin{aligned} PE2_{PM10} &= (0.008 \text{ lb/MMBtu}) * (1,000 \text{ MMBtu/ MMscf}) * (14.1 \text{ MMscf/day}) \\ &= 112.8 \text{ lb-PM}_{10}/\text{day} \end{aligned}$$

$$\begin{aligned} PE2_{CO} &= (0.37 \text{ lb/MMBtu}) * (1,000 \text{ MMBtu/ MMscf}) * (14.1 \text{ MMscf/day}) \\ &= 5,217 \text{ lb-CO/day} \end{aligned}$$

$$\begin{aligned} PE2_{VOC} &= (0.063 \text{ lb/MMBtu}) * (1,000 \text{ MMBtu/ MMscf}) * (14.1 \text{ MMscf/day}) \\ &= 888.3 \text{ lb-VOC/day} \end{aligned}$$

Annual PE2

The annual potential to emit for the flare is calculated as follows, and summarized in the table below:

S-78031-1-0 and '-2 (each)

$$\begin{aligned} PE2_{NOx} &= (0.068 \text{ lb/MMBtu}) * (1,000 \text{ MMBtu/ MMscf}) * (288 \text{ MMscf/year}) \\ &= 19,584 \text{ lb-NO}_x/\text{year} \end{aligned}$$

$$\begin{aligned} PE2_{SOx} &= (0.0143 \text{ lb/MMBtu}) * (1,000 \text{ MMBtu/ MMscf}) * (288 \text{ MMscf/year}) \\ &= 4,118 \text{ lb-SO}_x/\text{year} \end{aligned}$$

$$\begin{aligned} PE2_{PM10} &= (0.008 \text{ lb/MMBtu}) * (1,000 \text{ MMBtu/ MMscf}) * (288 \text{ MMscf/year}) \\ &= 2,304 \text{ lb-PM}_{10}/\text{year} \end{aligned}$$

$$\begin{aligned} PE2_{CO} &= (0.37 \text{ lb/MMBtu}) * (1,000 \text{ MMBtu/ MMscf}) * (288 \text{ MMscf/year}) \\ &= 106,560 \text{ lb-CO/year} \end{aligned}$$

$$\begin{aligned} PE2_{VOC} &= (0.063 \text{ lb/MMBtu}) * (1,000 \text{ MMBtu/ MMscf}) * (288 \text{ MMscf/year}) \\ &= 18,144 \text{ lb-VOC/year} \end{aligned}$$

S-7803-1-0

Post Project Potential to Emit (PE2)		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO _x	544.0	19,584
SO _x	114.4	4,118
PM ₁₀	64.0	2,304
CO	2960.0	106,560
VOC	504.0	18,144

S-7803-2-0

Post Project Potential to Emit (PE2)		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO _x	958.8	19,584
SO _x	201.6	4,118
PM ₁₀	112.8	2,304
CO	5217.0	106,560
VOC	888.3	18,144

The emissions profiles are 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.

As the well testing operations are new, 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 each flare is considered its own stationary source, the SSPE2 will be calculated for each unit.

Post Project Stationary Source Potential to Emit [SSPE2] (lb/year): S-7803-1-0					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
S-7803-1-0	19,584	4,118	2,304	106,560	18,144
Post Project SSPE (SSPE2)	19,584	4,118	2,304	106,560	18,144

Post Project Stationary Source Potential to Emit [SSPE2] (lb/year): S-7803-2-0					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
S-7803-2-0	19,584	4,118	2,304	106,560	18,144
Post Project SSPE (SSPE2)	19,584	4,118	2,304	106,560	18,144

5. Major Source Determination

Pursuant to Section 3.25 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 3.25.2 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) – S-7803-1-0					
	NO _x	SO _x	PM ₁₀	CO	VOC
Pre-Project SSPE (SSPE1)	0	0	0	0	0
Post Project SSPE (SSPE2)	19,584	4,118	2,304	106,560	18,144
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No

Major Source Determination (lb/year) - S-7803-2-0					
	NO _x	SO _x	PM ₁₀	CO	VOC
Pre-Project SSPE (SSPE1)	0	0	0	0	0
Post Project SSPE (SSPE2)	19,584	4,118	2,304	106,560	18,144
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 well test flare is not a Major Source.

6. Baseline Emissions (BE)

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 3.23

As shown in Section VII.C.5 above, the facility is not a Major Source for any criteria pollutant.

Therefore Baseline Emissions (BE) are equal to the Pre-Project Potential to Emit (PE1).

Since the units are all new emissions units, BE = PE1 = 0 for all criteria pollutants.

7. SB 288 Major Modification

Recent draft District Policy on Implementation of Rule 2201 (as amended 12/18/08 and approved by EPA 6/10/10) states that if the project's emissions increase is less than the significant thresholds in the table below the project the project is not a SB 288 major modification and no further analysis is required.

Major Modification Thresholds (Existing Major Source)			
Pollutant	Project PE (lb/year)	Threshold (lb/year)	Major Modification?
NO _x	39,168	50,000	No
SO _x	8,236	80,000	No
PM ₁₀	4,608	30,000	No
VOC	36,288	50,000	No

The project emissions do not exceed the significance thresholds in the table below. Therefore the project does not constitute a SB 288 Major Modification.

8. Federal Major Modification

Federal Major Modifications are physical changes or changes in operation at existing stationary sources that result in Significant Emissions Increases. As neither source S-7803-1 or -2 is a Major Source for any air pollutant, it can be concluded that the project does not result in a Federal Major Modification.

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.

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

S-7803-1-0 and '-2-0 (each)

Quarterly NEC			
Pollutant	PE2 (lb/qtr)	QBE (lb/qtr)	QNEC (lb/qtr)
NO _x	4896	0	4896
SO _x	1030	0	1030
PM ₁₀	576	0	576
CO	26,640	0	26,640
VOC	4536	0	4536

VIII. Compliance

Rule 2020 Exemptions

Section 6.14 states that "fugitive emissions sources and pressure vessels that are associated with an emissions unit for which a written permit is required shall be included as part of such emissions unit. A separate permit for the fugitive source or pressure vessel is not required. Therefore the three phase separator does not require a separate permit.

Compliance is expected.

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 H₂S 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 for the following*:

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,

- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- 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 a Major Modification.

*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_x, SO_x, PM₁₀, CO, and VOC. As discussed in Section VI above, the flares are VOC control devices (not emissions units) and 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 above, this project does not constitute a Major Modification; therefore BACT is not triggered.

2. BACT Guideline

BACT Guideline 1.4.7, applies to waste gas flares used for oilfield well drilling and testing [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 IV**), BACT has been satisfied with the following:

NO_x: Not applicable
SO_x: Not applicable
PM₁₀: Not applicable

VOC: Elevated flare with automatic (flow sensing) ignition system

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 or Rule 2201.

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

Offset Determination (lb/year) - S-7803-1-0					
	NO _x	SO _x	PM ₁₀	CO	VOC
Post Project SSPE (SSPE2)	19,584	4,118	2,304	106,560	18,144
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	No

Offset Determination (lb/year) - S-7803-2-0					
	NO _x	SO _x	PM ₁₀	CO	VOC
Post Project SSPE (SSPE2)	19,584	4,118	2,304	106,560	18,144
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 any the pollutant; 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 and Major Modifications
- b. Applications which include a new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Modifications that increase the Stationary Source Potential to Emit (SSPE1) from a level below the emissions offset threshold level to a level exceeding the emissions offset threshold level for one or more pollutants;
- d. New stationary sources with a post-project Stationary Source Potential to Emit (SSPE2) exceeding the emissions offset threshold level for one or more pollutants;
- e. Any permitting action resulting in a Stationary Source Project Increase in Permitted Emissions (SSIPE) exceeding 20,000 lb/year per year for any pollutant.

a. New Major Source

New Major Sources are new facilities, which are also Major Sources. As shown in Section VII.C.5 above, the SSPE2 is not greater than the Major Source threshold for any criteria pollutant. Therefore, public noticing is not required for this project for new Major Source purposes.

b. Major Modification

As demonstrated in VII.C.7, this project does not constitute a Major Modification; therefore, public noticing for Major Modification purposes is not required.

c. PE > 100 lb/day

The PE2 for the new units are compared to the daily PE Public Notice thresholds in the following table:

S-7803-1-0

Pollutant	PE ₂ (lb/day)	Public Notice Threshold	Public Notice Triggered?
NO _x	544.0	100 lb/day	Yes
SO _x	114.4	100 lb/day	Yes
PM ₁₀	64.0	100 lb/day	No
CO	2960.0	100 lb/day	Yes
VOC	504.0	100 lb/day	Yes

S-7803-2-0

Pollutant	PE ₂ (lb/day)	Public Notice Threshold	Public Notice Triggered?
NO _x	958.8	100 lb/day	Yes
SO _x	201.6	100 lb/day	Yes
PM ₁₀	112.8	100 lb/day	Yes
CO	5217.0	100 lb/day	Yes
VOC	888.3	100 lb/day	Yes

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

d. Offset Threshold

The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Threshold – S-7803-1-0 and '-2-0 (each)				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	0	19,584	20,000 lb/year	No
SO _x	0	4,118	54,750 lb/year	No
PM ₁₀	0	2,304	29,200 lb/year	No
CO	0	106,560	200,000 lb/year	No
VOC	0	18,144	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.

e. 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:

S-7045-1-0 and '-2-0 (each)

Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	19,584	0	19,584	20,000 lb/year	No
SO _x	4,118	0	4,118	20,000 lb/year	No
PM ₁₀	2,304	0	2,304	20,000 lb/year	No
CO	106,560	0	106,560	20,000 lb/year	Yes
VOC	18,144	0	18,144	20,000 lb/year	No

As demonstrated above, the SSIPE for 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 daily emissions in excess of 100 lb/day and SSIPE greater than 20,000 lb/year. 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 ATCs 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.

Proposed Rule 2201 (DEL) Conditions:

S-7803-1-0:

Emission rates shall not exceed any of the following: 0.008 lb-PM10/Mscf, 0.068 lb-NOx/Mscf (as NO₂), 0.063 lb-VOC/Mscf, or 0.37 lb-CO/Mscf. [District Rule 2201]

Sulfur compound concentration of gas flared shall not exceed 5 gr/100 scf. [District Rule 2201]

Daily and annual amounts of gas flared shall not exceed 8.0 MMscf/day and 288 MMscf/yr. [District rule 2201]

S-7803-2-0:

Emission rates shall not exceed any of the following: 0.008 lb-PM10/Mscf, 0.068 lb-NOx/Mscf (as NO₂), 0.063 lb-VOC/Mscf, or 0.37 lb-CO/Mscf. [District Rule 2201]

Sulfur compound concentration of gas flared shall not exceed 5 gr/100 scf. [District Rule 2201]

Daily and annual amounts of gas flared shall not exceed 14.1 MMscf/day and 288 MMscf

E. Compliance Assurance

1. Source Testing

The following testing condition is included on the proposed 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] N

2. Monitoring

The following monitoring condition is included:

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] N

3. Recordkeeping

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

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 Rule 2201] N

4. Reporting

The facility is required to report the location at which the flare is operating. The following condition will be placed on the permit 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

Section 4.14 of this Rule requires that an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. Technical Services Division performed modeling for criteria pollutants CO, NO_x, SO_x and PM₁₀. The results from the Criteria Modeling are as follows:

Criteria Pollutant Modeling Results

The results from the Criteria Pollutant Modeling are as follows:

Values are in µg/m³

Natural Gas RTO	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO _x	Pass	X	X	X	Pass
SO _x	Pass	Pass	X	Pass ¹	Pass
PM ₁₀	X	X	X	Pass ¹	Pass ¹

¹The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_x, CO, PM₁₀, or SO_x. Refer to **Attachment V** of this document for the full AAQA report from Technical Services.

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 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). Per FYI 83, when BACT is required for PM₁₀ the visible emissions will be limited to less than Ringelmann ¼ and less than 5% opacity. As long as the flaring system is operating correctly, compliance with this rule is expected.

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. Therefore, compliance with this rule is expected.

California Health & Safety Code 41700 (Health Risk Assessment)

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

BACT for toxic emission control (T-BACT) was not required as the prioritization scores for the facility and project were less than 1.0. However the following condition is required:

Flare shall not be operated in well testing operations at any location in conjunction with any other flare or combustion equipment operated by Weatherford International Inc. [District Rule 2201] N

Daily and annual amounts of gas flared shall not exceed 14.1 MMscf/day and 288 MMscf/yr. [District Rule 2201] N

The results of the HRA are included in **Attachment V**.

Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot. For natural gas the EPA F-factor (adjusted to 60°F) is 8710 dscf/MMBtu (40 CFR 60 Appendix B).

PM ₁₀ Emission Factor:	0.008 lb-PM ₁₀ /MMBtu	
Percentage of PM as PM ₁₀ in Exhaust:	100%	
Exhaust Oxygen (O ₂) Concentration:	3%	
Excess Air Correction to F Factor =	$\frac{20.9}{(20.9 - 3)}$	= 1.17

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

$$GL = 0.0055 \text{ grain/dscf} < 0.1 \text{ grain/dscf}$$

Rule 4311 Flares

This rule limits VOC and NOx emissions from flares. The flare is a separate stationary source which has a potential to emit less than 10 tons/yr NOx and 10 tons/yr VOCs. Therefore the

facility is exempt from all requirements of the rule except the record-keeping requirements of Section 6.2.4. Section 6.2.4 states that "beginning January 1, 2007 facilities claiming an exemption pursuant to Section 4.3 shall record annual throughput, material usage, or other information necessary to demonstrate an exemption under that section." Facility will keep records of annual volumes of gas combusted in the flares to ensure that NOx and VOC emissions remain below 10 tons/yr. Therefore compliance is expected.

Rule 4801 Sulfur Compounds

Rule 4801 requires that a person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: two-tenths (0.2) percent by volume calculated as sulfur dioxide (SO₂), on a dry basis averaged over 15 consecutive minutes.

Emission calculations were calculated using a fuel with a 5 gr/100 dscf sulfur content. Therefore, the maximum SO_x ppmv are calculated to be:

$$\begin{aligned} \text{SO}_x &= (5 \text{ gr/100 dscf fuel}) \times (1 \text{ lb/7000 gr S}) \times (1 \text{ mol/32 lb S}) \times (379.5 \text{ dscf S/1 mol S}) \times \\ &\quad (1 \text{ dscf fuel/1000 Btu}) \times (1 \times 10^6 \text{ Btu/8710 dscf}) \times (1 \times 10^6) \\ &= \mathbf{9.7 \text{ ppmv}} < 2,000 \text{ ppmv} \end{aligned}$$

California Health & Safety Code 42301.6 (School Notice)

Pursuant to California Health and Safety Code 42301.6, a school notice is required for sites located within 1,000 of a school. This flare will be operating at various sites through out the District. To insure that the flare is not located within 1,000 feet of a school the following condition will be placed on the permits,

The equipment shall not be located within 1000 ft. of any K-12 school. [District Rule 2201]

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 project 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 project: 1) Issuance of the permit does not have a significant environmental impact. 2) Assessment of potential environmental effects resulting from the use of the permitted transportable equipment 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 Authorities to Construct S-7803-1-0 and -2-0 subject to the permit conditions on the attached draft Authority to Construct in **Attachment VI**.

X. Billing Information

The fee schedule is based on the proposed throughput of the flare.

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-7803-1-0	3020-02-H	8.0 MMscf/day = 8000 MMBtu/day (333.3 MMBtu/hr)	\$1030.00
S-7803-2-0	3020-02-H	14.1 MMscf/day = 14,100 MMBtu/day (587.5 MMBtu/hr)	\$1030.00

Attachments

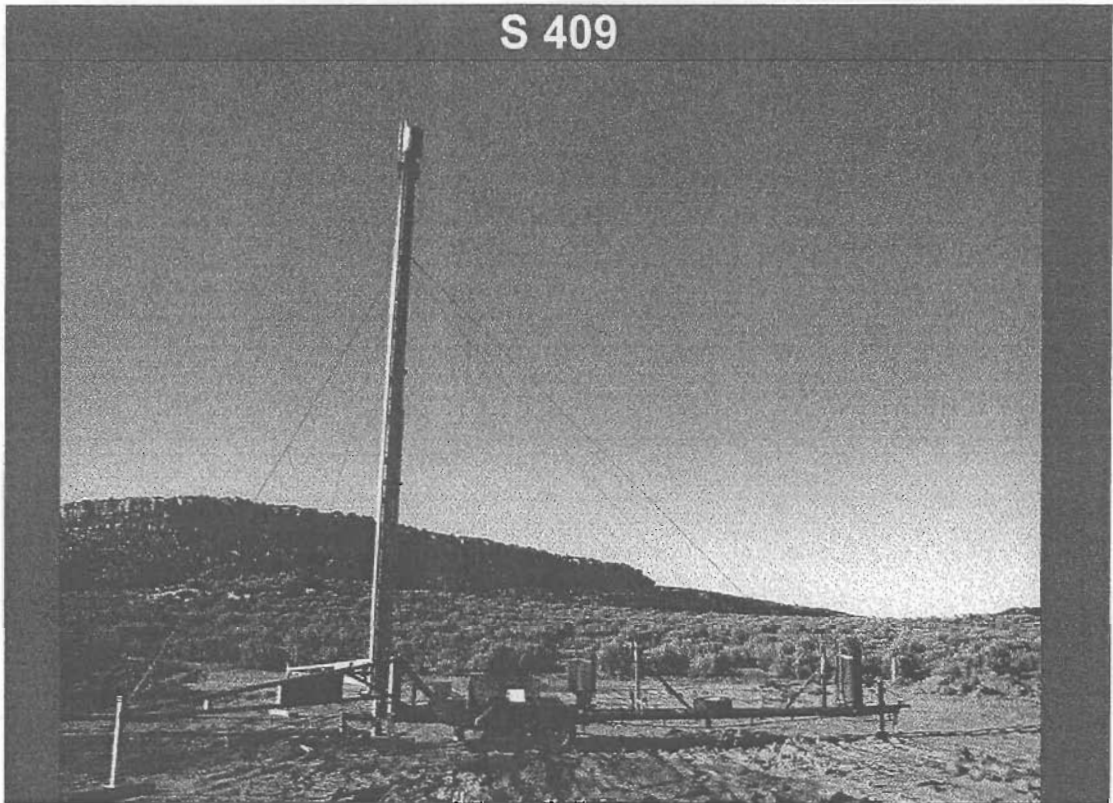
- I: Flare Photograph
- II: Emissions Profiles
- III: BACT Guideline
- IV: Top Down BACT Analysis
- V: AAQA Summary and HRA
- VI: Draft ATCs

ATTACHMENT I
Flare Photograph



Specifications

Portable Flare Stack



Portable Flare Stack (Model UL4060STLW)

Height 40 or 60 feet
Primary diameter 6 inch
Max gas rate 8 MMscf/d @ 40', 14.1 MMscf/d @ 60'

Inlets

Primary 4 Inch
Secondary 2 Inch

Standing Mechanism

12 Volt electric winch

Ignition

Additional features

Solar Powered electronic sparker

- Low noise shroud available for working in noise sensitive areas
- 5 Point support zero ground disturbance
- 100 lb propane bottle for pilot fuel and flare ignition
- Transported by light duty truck with 2 5/16 hitch ball

Manufacturer:

Flow Specialties Inc.
Alberta Canada
(403) 279 3569

ATTACHMENT II
Emissions Profile

Permit #: S-7803-1-0	Last Updated
Facility: WEATHERFORD INTERNATIONAL, INC.	06/18/2010 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	19584.0	4118.0	2304.0	106560.0	18144.0
Daily Emis. Limit (lb/Day)	544.0	114.4	64.0	2960.0	504.0
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	4896.0	1029.0	576.0	26640.0	4536.0
Q2:	4896.0	1029.0	576.0	26640.0	4536.0
Q3:	4896.0	1030.0	576.0	26640.0	4536.0
Q4:	4896.0	1030.0	576.0	26640.0	4536.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-7803-2-0	Last Updated
Facility: WEATHERFORD INTERNATIONAL, INC.	06/18/2010 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	19584.0	4118.0	2304.0	106560.0	18144.0
Daily Emis. Limit (lb/Day)	958.8	201.6	112.8	5217.0	888.3
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	4896.0	1029.0	576.0	26640.0	4536.0
Q2:	4896.0	1029.0	576.0	26640.0	4536.0
Q3:	4896.0	1030.0	576.0	26640.0	4536.0
Q4:	4896.0	1030.0	576.0	26640.0	4536.0
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 III
BACT Guideline 1. 4. 7

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

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
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 - Permit Specific BACT Determinations on Next Page(s)**

ATTACHMENT IV Top Down BACT Analysis

Top Down BACT Analysis for NO_x, SO_x and PM₁₀

The SJVUAPCD BACT Clearinghouse Guideline 1.4.7, 1st quarter 2006, does not identify technologically feasible or achieved in practice BACT for NO_x, SO_x and PM₁₀ emissions from Waste Gas Flares – Oilfield well drilling and testing operation < 50 MMscf/day.

"Emission unit " is defined in Section 3.15 of Rule 2201 an "an identifiable operation or piece of process equipment such as a source operation which emits, may emit, or result in the emissions of any affected pollutant directly or as fugitive emissions."

The gas must be disposed of after flow measurement to prevent safety hazard from the release of volatile organic compounds (VOC) and H₂S. The flare is expected to control VOC emissions by at least 99% over uncontrolled venting of the produced gas. H₂S in the produced gas is expected to be entirely converted to SO_x. In this case, the oil production well that produces the gas is the emissions unit, and the flare is an emission control device.

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 H₂S emissions from the well, the flare is considered an air pollution abatement operation and is exempt from the definition of emissions unit. The well drilling and testing operation may be subject BACT, the control device selected as BACT is not. Therefore, BACT is not required for NO_x, SO_x and PM₁₀.

Top Down BACT Analysis for VOC

1. BACT Analysis for VOC Emissions:

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 V
AAQA Summary and HRA

REVISED
San Joaquin Valley Air Pollution Control District
Risk Management Review

To: Richard Edgehill, AQE – Permit Services
 From: Ester Davila, SAQS – Technical Services
 Date: July 9, 2010
 Facility Name: Weatherford International, Inc.
 Location: Various Unspecified Locations, CA
 Application #(s): S-7803-1-0 & 2-0
 Project #: S-1102746

A. RMR SUMMARY

Categories	2 Portable Well Test Flares (Units 1-0 & 2-0)	Project Totals	Facility Totals
Prioritization Score	38	38	38
Acute Hazard Index	0.25	0.25	0.25
Chronic Hazard Index	0.001	0.001	0.001
Maximum Individual Cancer Risk (10 ⁻⁶)	0.15	0.15	0.15
T-BACT Required?	No		
Special Permit Conditions?	Yes		

Proposed Permit Conditions

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

Units # 1-0 & 2-0

1. The flares will be limited to an annual fuel consumption of 285 MMSCF each.
2. The flares may not be operated at the same location.

B. RMR REPORT

I. Project Description

Technical Services received a request on June 10, 2010, to perform a Risk Management Review for two 285 MMScf/yr portable well test flares, each will constitute a stationary source and therefore cannot operate in conjunction with each other per engineer. Since each flare is considered to be its own stationary source the risks and limits presented are based on the size of each flare and will not be summed. The project is a public notice project and now requires an AAQA.

II. Analysis

Toxic emissions for the proposed units were calculated using the District's Flare (waste gas) spreadsheet and the usage rates provided by the processing engineer. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the proposed units' toxic emissions were prioritized using the procedure in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEARTs database at a worst case receptor distance. The prioritization score for these proposed units was greater than 1.0 (see RMR Summary Table). Further analysis was necessary. The AERMOD model was used, with the parameters outlined below and meteorological data for 2008 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. These dispersion factors were input into the Hot Spots Analysis and Reporting Program (HARP) risk assessment module to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Units 1-0 & 2-0				
Source Type	Flare	Flare	Location Type	Rural
Stack Height (m)	12.2	18.3	Closest Receptor (m)	0
Stack Diameter. (m)	3.2*	3.2*	Type of Receptor	Res/Bus
Stack Exit Velocity (m/s)	20*	20*	Max Hours per Year	8760
Stack Exit Temp. (°K)	1273*	1273*	Fuel Type	Waste Gas
Burner Rating (MMBtu/hr)	N/A	N/A		

*Values used in the model were calculated based on guidance from EPA for flares.

Technical Services also performed modeling for criteria pollutants CO, NO_x, SO_x and PM₁₀. The emission rates used for criteria pollutant modeling are as follows:

Post Project Potential to Emit (PE2)

	S-7803-1-0		S-7803-2-0	
	Daily Emissions (lb/day)	Annual Emissions (lb/year)	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO _x	544.0	19,584	958.8	19,584
SO _x	114.4	4,118	201.6	4,118
PM ₁₀	64.0	2,304	112.8	2,304
CO	2960.0	106,560	5217.0	106,560
VOC	504.0	18,144	888.3	18,144

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Diesel ICE	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO _x	Pass ²	X	X	X	Pass
SO _x	Pass	Pass	X	Pass	Pass
PM ₁₀	X	X	X	Pass	Pass

*Results were taken from the attached AAQA printouts

¹The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2)

² Passed using OLM/PVMMR (TEIR I)

III. Conclusion

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

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

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS as long as the conditions listed on page 1 of this report are included on each 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.

Attachments:

- A. RMR Request
- B. Additional Information
- C. Toxic Emissions Summary
- D. Prioritization Score
- E. Facility Summary

ATTACHMENT VI
DRAFT ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-7803-1-0

LEGAL OWNER OR OPERATOR: WEATHERFORD INTERNATIONAL, INC.

MAILING ADDRESS: P.O. BOX 31
SANTA PAULA, CA 93061-0031

LOCATION: VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD
BAKERSFIELD, CA

EQUIPMENT DESCRIPTION:

WELL TESTING OPERATION WITH TRANSPORTABLE 8.0 MMSCF/DAY FLOW SPECIALTIES MODEL UL4060STLW FLARE (OR EQUIVALENT) WITH AUTOMATIC FLOW SENSING PILOT IGNITION SYSTEM, VORTEX AIR MIXER, OPTIONAL PROPANE MAKEUP GAS, AND PHASE SEPARATOR(S) VENTED TO FLARE OPERATED AT VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD

CONDITIONS

1. The equipment shall not be located within 1000 ft. of any K-12 school. [CH&SC 42301.6]
2. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201]
3. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2010]
4. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201]
5. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201]
6. Flare shall only be used to combust gas released during well testing. [District Rule 2201]
7. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

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

DRAFT

DAVID WARNER, Director of Permit Services

S-7803-1-0 : Jul 12 2010 7:55AM - EDGEHILL : Joint Inspection NOT Required

8. 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]
9. Flare shall not be operated in well testing operations at any location in conjunction with any other flare or combustion equipment operated by Weatherford International Inc. [District Rule 2201]
10. 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]
11. Flare shall be equipped with vortex air mixer which shall be utilized to maintain visible emissions below Ringelmann 1/4 and 5% opacity. [District Rule 2201]
12. Flare shall be equipped with operational automatic re-ignition provisions. [District Rule 2201]
13. Gas line to flare shall be equipped with operational, volumetric flow rate indicator. [District Rule 2201]
14. Daily and annual amounts of gas flared shall not exceed 8.0 MMscf/day and 288 MMscf/yr. [District Rule 2201]
15. Visible emissions shall not exhibit Ringelmann 1/4 or greater or equivalent 5% opacity or greater for more than three minutes in any one hour. [District Rule 2201]
16. Sulfur compound concentration of gas flared shall not exceed 5 gr/100 scf. [District Rule 2201]
17. Emission rates shall not exceed any of the following: 0.008 lb-PM10/MMBtu, 0.068 lb-NOx/MMBtu (as NO2), 0.063 lb-VOC/MMBtu, or 0.37 lb-CO/MMBtu. [District Rule 2201]
18. The flare shall be operated according to the manufacturer's specifications, a copy of which shall be maintained on site. [District Rule 2201]
19. 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]
20. 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]
21. The following test methods shall be used for well gas sulfur content: ASTM D3246 or double GC for H2S and mercaptan. [District Rule 1081]
22. 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 Rule 2201]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-7803-2-0

LEGAL OWNER OR OPERATOR: WEATHERFORD INTERNATIONAL, INC.

MAILING ADDRESS: P.O. BOX 31
SANTA PAULA, CA 93061-0031

LOCATION: VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD
BAKERSFIELD, CA

EQUIPMENT DESCRIPTION:

WELL TESTING OPERATION WITH TRANSPORTABLE 14.1 MMSCF/DAY FLOW SPECIALTIES MODEL UL4060STLW FLARE (OR EQUIVALENT) WITH AUTOMATIC FLOW SENSING PILOT IGNITION SYSTEM, VORTEX AIR MIXER, OPTIONAL PROPANE MAKEUP GAS, AND PHASE SEPARATOR(S) VENTED TO FLARE OPERATED AT VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD

CONDITIONS

1. The equipment shall not be located within 1000 ft. of any K-12 school. [CH&SC 42301.6]
2. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201]
3. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2010]
4. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201]
5. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201]
6. Flare shall only be used to combust gas released during well testing. [District Rule 2201]
7. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

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

8-7803-2-0: Jul 12 2010 7:55AM - EDGEHILR : Joint Inspection NOT Required

8. 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]
9. Flare shall not be operated in well testing operations at any location in conjunction with any other flare or combustion equipment operated by Weatherford International Inc. [District Rule 2201]
10. 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]
11. Flare shall be equipped with vortex air mixer which shall be utilized when needed to maintain visible emissions below Ringelmann 1/4 and 5% opacity. [District Rule 2201]
12. Flare shall be equipped with operational automatic re-ignition provisions. [District Rule 2201]
13. Gas line to flare shall be equipped with operational, volumetric flow rate indicator. [District Rule 2201]
14. Daily and annual amounts of gas flared shall not exceed 14.1 MMscf/day and 288 MMscf/yr. [District Rule 2201]
15. Visible emissions shall not exhibit Ringelmann 1/4 or greater or equivalent 5% opacity or greater for more than three minutes in any one hour. [District Rule 2201]
16. Sulfur compound concentration of gas flared shall not exceed 5 gr/100 scf. [District Rule 2201]
17. Emission rates shall not exceed any of the following: 0.008 lb-PM10/MMBtu, 0.068 lb-NO_x/MMBtu (as NO₂), 0.063 lb-VOC/MMBtu, or 0.37 lb-CO/MMBtu. [District Rule 2201]
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