



JAN 30 2012

Robert Hassebrock
Weatherford International Inc.
PO Box 31
Santa Paula, CA 93061

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: S-1114378

Dear Mr. Hassebrock:

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 testing flares, at various unspecified locations within the 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. David Torii of Permit Services at 661-392-5620.

Sincerely,

David Warner
Director of Permit Services

DW: DBT/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
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585



JAN 30 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-1114378**

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 testing flares, at various unspecified locations within the 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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**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 testing flares, at various unspecified locations within the SJVAPCD.

The analysis of the regulatory basis for this proposed action, Project #S-1114378, 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.
Mailing Address: PO Box 31
Santa Paula, CA 93061
Contact Person: Robert Hassebrock
Telephone: 661-746-0887
Fax: 661-746-2421
Application #(s): S-7803-3-0 and '4-0
Project #: 1114378
Deemed Complete: 11/16/11

Engineer: David Torii
Lead Engineer: Dan Klevann
DK 12-12-11

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 permits 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]

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4101	Visible Emissions (2/17/05) not applicable, flare is not a Source Operation
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92) not applicable, flare is not a Source Operation

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, oil and gas wells are tested to establish flow rates and pressure decline. The well test flares will incinerate the combustible gas released from the well during testing.

V. Equipment Listing

Proposed ATCs:

S-7803-3-0: WELL TESTING OPERATION WITH TRANSPORTABLE 7.0 MMSCF/DAY FLARE WITH CONTINUOUS ELECTRONIC IGNITION SYSTEM OPERATED AT VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD

S-7803-4-0: WELL TESTING OPERATION WITH TRANSPORTABLE 0.5 MMSCF/DAY FLARE WITH CONTINUOUS ELECTRONIC IGNITION SYSTEM OPERATED AT VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD

Post Project Equipment Description:

S-7803-3-0: WELL TESTING OPERATION WITH TRANSPORTABLE 7.0 MMSCF/DAY FLARE WITH CONTINUOUS ELECTRONIC IGNITION SYSTEM OPERATED AT VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD

S-7803-4-0: WELL TESTING OPERATION WITH TRANSPORTABLE 0.5 MMSCF/DAY FLARE WITH CONTINUOUS ELECTRONIC IGNITION SYSTEM OPERATED AT VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD

VI. Emission Control Technology Evaluation

A well test flare is an emission control and safety device used to incinerate combustible gases that would otherwise be released during testing of an oil or gas production well. The combustible gases include a significant fraction of VOC along with measurable concentrations of various sulfur compounds such as hydrogen sulfide (H₂S). By incinerating these gases VOC

emissions are reduced by at least 99%, while sulfur compounds are expected to be entirely converted to SO_x.

District Rule 1020 (Definitions), Section 3.46.2, specifically excludes an air pollution abatement operations from the definition of a source operation. District Rule 2201 includes a source operation in the definition of an emissions unit. Since the well test flare is designed to control the VOC and sulfur compound emissions from the well, the flare is an air pollution abatement operation and is not a source operation or an emissions unit. Therefore, the well drilling and testing operation is potentially subject to the best available control technology (BACT) requirements, but the control device (the flare) selected as BACT is not.

VII. General Calculations

A. Assumptions

- The maximum daily quantity of gas combusted in flare S-7803-3-0 is 7.0 MMscf/day (applicant)
- The maximum daily quantity of gas combusted in flare S-7803-4-0 is 0.5 MMscf/day (applicant)
- The maximum annual quantity of gas combusted in flare S-7803-3 and '4 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).

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 pollutants.

2. Post Project Potential to Emit (PE2)

Daily PE2

S-7803-3-0:

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

$$\begin{aligned} PE2_{NOx} &= (0.068 \text{ lb/MMBtu}) * (1,000 \text{ MMBtu/ MMscf}) * (7.0 \text{ MMscf/day}) \\ &= 476.0 \text{ lb-NO}_x/\text{day} \end{aligned}$$

S-7803-4-0:

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

$$\begin{aligned} PE2_{NOx} &= (0.068 \text{ lb/MMBtu}) * (1,000 \text{ MMBtu/ MMscf}) * (0.5 \text{ MMscf/day}) \\ &= 34.0 \text{ lb-NO}_x/\text{day} \end{aligned}$$

Annual PE2

S-78031-3-0 and 4-0 (each)

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

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

S-7803-3-0		
Post Project Potential to Emit (PE2)		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO _x	476.0	19,584
SO _x	100.1	4,118
PM ₁₀	56.0	2,304
CO	2590.0	106,560
VOC	441.0	18,144

S-7803-4-0		
Post Project Potential to Emit (PE2)		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO _x	34.0	19,584
SO _x	7.2	4,118
PM ₁₀	4.0	2,304
CO	185.0	106,560
VOC	31.5	18,144

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.

Post Project Stationary Source Potential to Emit [SSPE2] (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
S-7803-3-0	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)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
S-7803-4-0	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 3.23 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) – S-7803-3-0					
	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-7803-4-0					
	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)

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.

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

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

7. SB 288 Major Modification

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

Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB288 major modification.

8. Federal Major Modification

District Rule 2201, Section 3.17 states that Federal Major Modifications are the same as "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Additionally, since the facility is not a major source for PM₁₀ (140,000 lb/year), it is not a major source for PM_{2.5} (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.

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

S-7803-3-0 and '4-0 (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 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless 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.

As shown in Sections VII.D.5 and VII.D.6 this proposal does not constitute an SB288 major modification or a federal major modification. As shown in Section I there are no existing emission units being modified or relocated as part of this project. As shown in Section VI of this document, the flares are air pollution abatement devices rather than emission units, so the flares themselves cannot trigger BACT. VOC emissions from the wells being tested, even after 99% control by the flares, is greater than 2 lb/day, so BACT is triggered for the well testing operations for VOC.

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 Appendix A)

3. Top-Down BACT Analysis

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

Pursuant to the attached Top-Down BACT Analysis (See Appendix A), BACT has been satisfied with the following:

- NO_x: Not applicable.
- SO_x: Not applicable
- PM₁₀: Not applicable
- VOC: Elevated flare with a continuous electronic pilot

B. Offsets

1. Offset Applicability

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

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

Offset Determination (lb/year) - S-7803-3-0					
	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-7803-4-0					
	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 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

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 pollutant. Therefore, public noticing is not required for this project for new Major Source purposes.

b. PE > 100 lb/day

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

S-7803-3-0			
PE > 100 lb/day Public Notice Thresholds			
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?
NO _x	476.0	100 lb/day	Yes
SO _x	100.1	100 lb/day	Yes
PM ₁₀	56.0	100 lb/day	No
CO	2590.0	100 lb/day	Yes
VOC	441.0	100 lb/day	Yes

S-7803-4-0			
PE > 100 lb/day Public Notice Thresholds			
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?
NO _x	34.0	100 lb/day	No
SO _x	7.2	100 lb/day	No
PM ₁₀	4.0	100 lb/day	No
CO	185.0	100 lb/day	Yes
VOC	31.5	100 lb/day	No

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

c. 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.

S-7803-3-0				
Offset Threshold				
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	4,113	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

S-7803-4-0 Offset Threshold				
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.

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:

S-7803-3-0 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

S-7803-4-0 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 SSIPEs for CO is 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 emissions in excess of 100 lb/day and 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 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.

Proposed Rule 2201 (DEL) Conditions:

S-7803-3-0:

- Daily and annual amounts of gas flared shall not exceed 7.0 MMscf/day and 288 MMscf/yr. [District Rule 2201] N
- Sulfur compound concentration of gas flared shall not exceed 5 gr/100 scf. [District Rule 2201] N
- 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] N

S-7803-4-0:

- Daily and annual amounts of gas flared shall not exceed 0.5 MMscf/day and 288 MMscf/yr. [District Rule 2201] N
- Sulfur compound concentration of gas flared shall not exceed 5 gr/100 scf. [District Rule 2201] N
- 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] N

E. Compliance Assurance

1. Source Testing

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

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

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

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis

Section 4.14.1 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. The Technical Services Division of the SJVAPCD conducted the required analysis. Refer to Appendix B of this document for the AAQA summary sheet.

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

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Values are in µg/m³

Two Flares	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	Pass
PM ₁₀	X	X	X	Pass	Pass
PM _{2.5}	X	X	X	Pass	Pass

*Results were taken from the attached PSD spreadsheet.

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

²The project was compared to the 1-hour NO₂ National Ambient Air Quality Standard that became effective on April 12, 2010, using the District's approved procedures.

³For this case as per District procedure, minor PM_{2.5} sources are modeled only for primary PM_{2.5} concentrations, and these concentrations are compared to the 24-hour SIL of 1.2 ug/m³ and the annual SIL of 0.3 ug/m³.

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 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.

Rule 4311 Flares

This rule is intended to limit the emissions of NO_x, SO_x, and VOC from the operation of flares. However, pursuant to Section 4.3, except for the record keeping requirement of Section 6.1.4 the requirements of this rule do not apply to any flare located at a stationary source with potential emissions less than 10.0 tons per year of VOC and 10.0 tons per year of NO_x. Section 6.1.4 requires an operator claiming exemption under Section 4.3 to record annual throughput, material usage, or other information necessary to demonstrate compliance with the terms of the exemption. The following condition, previously stated in this evaluation, will ensure compliance with this recordkeeping requirement:

- *Permittee shall maintain accurate daily records of flare location and volume of well test gas flared. [District Rules 2201 and 4311]*

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:

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

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

The cancer risk for this project is shown below:

RMR Summary				
Categories	Flare (Unit 3-0)	Flare (Unit 4-0)	Project Totals	Facility Totals
Prioritization Score	2.21	2.21	4.42	>1
Acute Hazard Index	0.03	0.00	0.03	0.28
Chronic Hazard Index	0.00	0.00	0.00	0.01
Maximum Individual Cancer Risk	1.01E-06	5.86E-06	6.87E-06	7.02E-06
T-BACT Required?	Yes	Yes		
Special Permit Conditions?	Yes	Yes		

Discussion of T-BACT

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the unit is **1.01E-06**, which is greater than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the unit is approved with Toxic Best Available Control Technology (T-BACT).

To ensure that human health risks will not exceed District allowable levels; the following permit condition must be included for the proposed unit.

- The flare shall always operate at least 1,000 feet away from the closest receptor.

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality Act (CEQA)

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; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

It is determined that another agency has prepared an environmental review document for the project. The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). As a Responsible Agency, the District is limited to mitigating or avoiding impacts for which it has statutory authority. The District does not have statutory authority for regulating greenhouse gas emissions. The District has determined that the applicant is responsible for implementing greenhouse gas mitigation measures, if any, imposed by the Lead Agency.

District CEQA Findings

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. Issue Authorities to Construct S-7803-3-0 and '4-0 subject to the permit conditions on the attached draft Authorities to Construct in **Appendix C**.

X. Billing Information

Weatherford International Inc.
S-7803, 1114378

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-7803-3-0	3020-02-G	12.1 MMBtu/hr	\$815
S-7803-4-0	3020-02-D	0.9 MMBtu/hr	\$314

Appendix A
BACT Guideline and 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

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**

The well test flares are covered by BACT Guideline 1.4.7, which covers waste gas flares for oilfield well drilling and testing operations with a maximum flow rate less than 50 MMscf/day. In accordance with District Policy APR-1305, *Best Available Control Technology (BACT) Policy*, information from this Guideline will be cited without further analysis.

Step 1 – Identify All Possible Control Technologies:

1. Elevated flare with propane fueled pilot light – Achieved in Practice

Step 2 – Eliminate Technologically Infeasible Options:

All technologies listed in Step 1 are technologically feasible.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

1. Elevated flare with propane fueled pilot light

Step 4 – Cost Effectiveness Analysis

The applicant has proposed an elevated flare with continuous electronic pilot which is equivalent to highest-ranked control option remaining from Step 3. No cost effectiveness analysis is required.

Step 5 – Select BACT

BACT is satisfied by the applicant's proposal to use an elevated flare with a continuous electronic pilot. No further discussion is required.

Appendix B
HRA and AAQA

San Joaquin Valley Air Pollution Control District Risk Management Review

To: David Torii – Permit Services
 From: Cheryl Lawler – Technical Services
 Date: January 23, 2012
 Facility Name: Weatherford International
 Location: Various Unspecified Locations
 Application #(s): S-7803-3-0 & 4-0
 Project #: S-1114378

A. RMR SUMMARY

RMR Summary				
Categories	Flare (Unit 3-0)	Flare (Unit 4-0)	Project Totals	Facility Totals
Prioritization Score	2.21	2.21	4.42	>1
Acute Hazard Index	0.03	0.00	0.03	0.28
Chronic Hazard Index	0.00	0.00	0.00	0.01
Maximum Individual Cancer Risk	1.01E-06	5.86E-06	6.87E-06	7.02E-06
T-BACT Required?	Yes	Yes		
Special Permit Conditions?	Yes	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 3-0 & 4-0

1. The flares shall always operate at least 1,000 feet away from the closest receptor.

B. RMR REPORT

I. Project Description

Technical Services received a request on December 22, 2011, to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for two new produced gas-fired portable flares to operate at various unspecified locations within the District.

II. Analysis

For the Risk Management Review, toxic emissions from the project were calculated using Ventura County APCD emission factors for oilfield natural gas/waste gas 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 proposed project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The project's prioritization scores were greater than 1.0 (see RMR Summary Table); therefore, a refined Health Risk Assessment was required and performed for the project. AERMOD was used with flare parameters outlined below and concatenated 5-year meteorological data from Bakersfield to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Chronic and Acute Hazard Indices and the Carcinogenic Risk.

The following parameters were used for the review:

Analysis Parameters			
S-7803-3-0 & 4-0			
Source Type	Flare	Closest Receptor (m)	305
Release Height (m)	18.3	Closest Receptor Type	Residence & Business
Stack Diameter (m)	2.49* & 0.664*	Project Location Type	Rural
Gas Exit Temperature (K)	1273*	Stack Gas Velocity (m/s)	20*

*Based on EPA guidance and default values for flares.

Technical Services also performed modeling for criteria pollutants CO, NO_x, SO_x, PM₁₀, and PM_{2.5}, as well as the RMR. For Unit 3-0, emission rates used for criteria pollutant modeling were 107.9 lb/hr CO, 19.8 lb/hr NO_x, 4.2 lb/hr SO_x, 2.3 lb/hr PM₁₀, and 2.3 PM_{2.5}. For Unit 4-0, emission rates used for criteria pollutant modeling were 7.7 lb/hr CO, 1.4 lb/hr NO_x, 0.3 lb/hr SO_x, 0.2 lb/hr PM₁₀, and 0.2 PM_{2.5}.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Values are in µg/m³

Two Flares	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	Pass
PM ₁₀	X	X	X	Pass ¹	Pass ¹
PM _{2.5}	X	X	X	Pass ³	Pass ³

*Results were taken from the attached PSD spreadsheet.

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

²The project was compared to the 1-hour NO₂ National Ambient Air Quality Standard that became effective on April 12, 2010, using the District's approved procedures.

³For this case as per District procedure, minor PM_{2.5} sources are modeled only for primary PM_{2.5} concentrations, and these concentrations are compared to the 24-hour SIL of 1.2 ug/m³ and the annual SIL of 0.3 ug/m³.

III. Conclusions

Unit 3-0

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

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the unit is **1.01E-06**, which is greater than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the unit is approved **with** 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.

Unit 4-0

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

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the unit is **5.86E-06**, which is greater than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the unit is approved **with** 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.

Appendix C
Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-7803-3-0

LEGAL OWNER OR OPERATOR: WEATHERFORD INTERNATIONAL, INC.

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

LOCATION: VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD
BAKERSFIELD, CA

EQUIPMENT DESCRIPTION:

WELL TESTING OPERATION WITH TRANSPORTABLE 7.0 MMSCF/DAY FLARE WITH CONTINUOUS ELECTRONIC IGNITION SYSTEM OPERATED AT VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD

CONDITIONS

1. The flare shall always operate at least 1,000 feet away from the closest receptor. [District Rule 4102 and CH&SC 42301.6]
2. Flare shall only be used to combust gas released during well testing. [District Rule 2201]
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. Permittee shall notify the District Compliance Division to arrange a start-up inspection at the initial location of the unit. [District Rule 1070]
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 1070]
6. 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]
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. Flare shall be equipped with vortex air mixer which shall be utilized to maintain visible emissions below Ringlemann 1/4 and 5% opacity. [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-7803-3-0; Jan 24 2012 9:05AM - TORID : Joint Inspection NOT Required

9. Flare shall be equipped with operational automatic re-ignition provisions. [District Rule 2201]
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 7.0 MMscf/day and 288 MMscf/yr. [District Rule 2201]
12. 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]
13. Sulfur compound concentration of gas flared shall not exceed 5 gr/100 scf. [District Rule 2201]
14. 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]
15. The flare shall be operated according to the manufacturer's specifications, a copy of which shall be maintained on site. [District Rule 2201]
16. 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]
17. 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]
18. The following test methods shall be used for well gas sulfur content: ASTM D3246 or double GC for H₂S and mercaptan. [District Rule 1081]
19. 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]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT
ISSUANCE DATE: DRAFT

PERMIT NO: S-7803-4-0

LEGAL OWNER OR OPERATOR: WEATHERFORD INTERNATIONAL, INC.

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

LOCATION: VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD
BAKERSFIELD, CA

EQUIPMENT DESCRIPTION:

WELL TESTING OPERATION WITH TRANSPORTABLE 0.5 MMSCF/DAY FLARE WITH CONTINUOUS ELECTRONIC IGNITION SYSTEM OPERATED AT VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD

CONDITIONS

1. The flare shall always operate at least 1,000 feet away from the closest receptor. [District Rule 4102 and CH&SC 42301.6]
2. Flare shall only be used to combust gas released during well testing. [District Rule 2201]
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. Permittee shall notify the District Compliance Division to arrange a start-up inspection at the initial location of the unit. [District Rule 1070]
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 1070]
6. 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]
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. Flare shall be equipped with vortex air mixer which shall be utilized to maintain visible emissions below Ringlemann 1/4 and 5% opacity. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director, APCO

DAVID WARNER, Director of Permit Services

S-7803-4-0: Jan 24 2012 9:05AM - TORID : Joint Inspection NOT Required

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12. 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]
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19. 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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