San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

NOV 13 2018

Chris Williard
Pros Inc
3400 Patton Way
Bakersfield, CA 93308

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: S-7045
Project Number: S-1183793

Dear Mr. Williard:

Enclosed for your review and comment is the District's analysis of Pros Inc's application for an Authority to Construct for two flares, at various unspecified locations, SJVAPCD.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed 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,

Arnaud Marjollet
Director of Permit Services

AM:rue

Enclosures

cc: Tung Le, CARB (w/ enclosure) via email

Samir Sheikh
Executive Director/Air Pollution Control Officer

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San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Two Portable Well Test Flares

Facility Name:	PROS, Inc.
Mailing Address:	3400 Patton Way Bakersfield, CA 93308
Contact Person:	Chris Williard
Telephone:	661-332-7617 (cell)
E-Mail:	cwilliard@proswelltesting.com
Application #(s):	S-7045-23-0 and '-24-0
Project #:	S-1183793
Deemed Complete:	October 15, 2018

Date:	October 22, 2018
Engineer:	Richard Edgehill
Lead Engineer:	Richard Karrs

I. Proposal

PROS, Inc. (Pros) has requested Authorities to Construct (ATCs) for two transportable flares for multiple uses including well testing, mitigation of gas kicks during drilling operations, equipment depressurization for maintenance purposes, and pipeline pigging. The flares will be authorized to operate at various unspecified locations, SJVAPCD. Flared gas flow rate will be limited to 3 MMscf/day and 288 MMscf/yr. The flares will not be operated together at the same location.

Please note that District Policy SSP 1915 requires that transportable 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 separate stationary source." The following condition from APR 1020 will be placed on each 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]

PROs facility S-7045 includes PTOs S-7045-6-0, '-12-0, '-14-0, '-15-1, '-10-0 and '-20-0 for transportable well testing operations with flares. Each of these operations is considered as a separate stationary source and therefore two or more S-7045 units may not be operated at the same location simultaneously.

The following condition will be placed on each ATC:

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

Source S-7045 is not a major source and therefore Rule 2520 and 2530 are not applicable.

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

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (2/18/16)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4311	Flares (6/18/09)
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 authorized to operate at various unspecified locations within the District. However, the equipment is restricted by permit condition not to 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

As stated in the proposal section the flares will be used for well testing, mitigation of gas kicks during drilling mud recirculation, equipment depressurization for maintenance purposes, and pipeline pigging.

The flares are equipped with a continuous propane pilot and automatic ignition.

A photograph and diagrams of the flare are included in **Attachment I**.

V. Equipment Listing

S-7045-23-0: TRANSPORTABLE 125 MMBTU/HR FLARE WITH GAS SCRUBBER AND 3-PHASE SEPARATOR AND OPTIONAL AIR-ASSIST FOR MULTIPLE USES INCLUDING WELL TESTING AND DRILLING OPERATIONS, EQUIPMENT DEPRESSURIZATION, AND PIPELINE PIGGING OPERATED AT VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD

S-7045-24-0: TRANSPORTABLE 125 MMBTU/HR FLARE WITH GAS SCRUBBER AND 3-PHASE SEPARATOR AND OPTIONAL AIR-ASSIST FOR MULTIPLE USES INCLUDING WELL TESTING AND DRILLING OPERATIONS, EQUIPMENT DEPRESSURIZATION, AND PIPELINE PIGGING OPERATED AT VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD

VI. Emission Control Technology Evaluation

Emissions from the flares include oxides of nitrogen (NOx), carbon monoxide (CO), oxides of sulfur (SOx), volatile organic compounds (VOCs), and particulate emissions less than 10 micron (PM10).

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

Propane Pilot and Automatic Ignition System
The flares will operate with a continuous propane/natural gas pilot and an automatic ignition system.

Sulfur Emissions
Sulfur emissions from the flares are expected not to exceed 5.0 gr S/100 scf. Therefore, sulfur scrubbing is not required.

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

VII. General Calculations

A. Assumptions

- Heating value of flared gas is 1,000 Btu/scf (proposed and APR 1720)
- The flared natural gas will have a H_2S content less than 5 gr/100 scf (equivalent to 85 ppmv), measured as sulfur (proposed)
- Fugitive emissions are considered to be negligible compared to combustion VOC emissions from the flare.
- Flow rate of propane pilot gas is 1080 scf/day. However, pilot gas combustion emissions are assumed to be negligible when compared to emissions resulting from combustion of produced gas.
- The maximum quantity of flared gas is 0.125 MMscf/hr (125 MMBtu/hr), 3 MMscf/day (3,000 MMBtu/day), 288 MMscf/yr (288,000 MMBtu/yr)
- VOC content of flared gas is unknown, assume molecular weight of 20 lb/lbmol, 5% by wt VOCs, 1000 Btu/scf

B. Emission Factors

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 (AP 42 Sec 13.5), Applicant Proposed
CO	0.37	FYI 83 (AP 42 Sec 13.5)
VOC	0.063	FYI 83 (AP 42 Sec 13.5)

$$* \frac{5\,gr \cdot S}{100\,dscf}\left(\frac{dscf}{1{,}000\,Btu}\right)\frac{10^6\,Btu}{MMBtu}\left(\frac{1\,lb}{7{,}000\,gr}\right)\frac{64\,lb \cdot SO_2}{32\,lb \cdot S} = 0.0143\frac{lb \cdot SO_2}{MMBtu}$$

EF flare (lb/MMBtu)= 1.2 (200)(Wt % VOCs)(density gas)/hhv
where:

1.2 is a 20% buffer to account for variability on flared gas VOC content (higher buffers can be approved on a case by case basis)
Density gas is the flared gas density in lb /ft^3
Wt% VOC is the percentage by weight of VOCs in the gas to be flared
hhv is the higher heating value of the flared gas (Btu/ft^3)

Assuming a flared gas with 5% by wt VOCs, MW_{avg} = 20 (slightly heavier than methane), and hhv = 1000 Btu/ft^3,

Density gas = 20 lb/lbmol/379.5 ft^3/lbmol

EF_{flare} = 1.2 (200) (5)(20/379.5)/1000

= 0.063 lb/MMBtu

C. Calculations

1. Pre-Project Potential to Emit (PE1)

The proposed flares are new and therefore PE1 = 0.

2. Post Project Potential to Emit (PE2)

S-7045-23-0 and '-24-0 (each)

Pollutant	Daily PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE2 (lb/day)
NO_X	0.068	125	24	204.0
SO_X	0.01430	125	24	42.9
PM_{10}	0.0080	125	24	24.0
CO	0.370	125	24	1,110.0
VOC	0.0630	125	24	189.0

Pollutant	Annual PE2		
	EF2 (lb/MMBtu)	Heat Input (MMBtu/year)	Annual PE2 (lb/year)
NO_X	0.068	288,000	19,584
SO_X	0.01430	288,000	4,118
PM_{10}	0.0080	288,000	2,304
CO	0.370	288,000	106,560
VOC	0.0630	288,000	18,144

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

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

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

Since the flares are new and considered there own stationary source, SSPE1 is zero.

Pre Project Stationary Source Potential to Emit [SSPE1] (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
S-7045-23-0	0	0	0	0	0
Pre Project SSPE (SSPE1)	0	0	0	0	0

Pre Project Stationary Source Potential to Emit [SSPE1] (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
S-7045-24-0	0	0	0	0	0
Pre Project SSPE (SSPE1)	0	0	0	0	0

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)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
S-7045-23-0	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-7045-24-0	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

Rule 2201 Major Source Determination:

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

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)

- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

S-7045-23-0 and '-24-0 (each)

Rule 2201 Major Source Determination (lb/year)						
	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO	VOC
SSPE1	0	0	0	0	0	0
SSPE2	19,584	4,118	2,304	2,304	106,560	18,144
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No	No

Note: PM2.5 assumed to be equal to PM10

As seen in the table above, neither well test flare is an existing Major Source and is not becoming a Major Source as a result of this project.

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
	NO_2	VOC	SO_2	CO	PM	PM_{10}
Estimated Facility PE before Project Increase	0	0	0	0	0	0
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	N	N	N	N	N	N

As shown above, the facility is not an existing PSD major source for any regulated NSR pollutant expected to be emitted at this facility.

6. Baseline Emissions (BE)

The BE calculation (in lb/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 District Rule 2201, BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

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

7. SB 288 Major Modification

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

Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.

8. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

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 PM_{10} (140,000 lb/year), it is not a major source for PM2.5 (200,000 lb/year).

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

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

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10

- Sulfuric acid mist
- Hydrogen sulfide (H2S)
- Total reduced sulfur (inlcuding H2S)
- Reduced sulfur compounds

I. Project Emissions Increase - New Major Source Determination

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new major source subject to PSD requirements.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

S-7045-23-0 and '-24-0 (each)

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO_2	VOC	SO_2	CO	PM	PM_{10}
Total PE from New and Modified Units	9.8	9.0	2.	53	1.2	1.2
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	N	N	N	N	N	N

As shown in the table above, the potential to emit for the project, by itself, does not exceed any PSD major source threshold. Therefore Rule 2410 is not applicable and no further analysis is required.

10. 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.

QNEC (lb/qtr) = PE2 (lb/qtr) – QBE (lb/qtr)

S-7045-23-0 and '-24-0 (each)

Quarterly NEC				
Pollutant	PE2 (lb/yr)	PE2 (lb/qtr)	QBE (lb/qtr)	QNEC (lb/qtr)
NO_x	19,584	4,896	0	4,896
SO_x	4,118	1,029.5	0	1,029.5
PM_{10}	2,304	576	0	576
CO	106,560	26,640	0	26,640
VOC	18,144	4,536	0	4,536

VIII. Compliance Determination

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 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. The well drilling and testing operation emits only VOC. The controlled VOC emissions from the well drilling and testing operation are greater than 2 lb/day.

BACT is triggered for VOC since the PE is greater than 2 lb/day. NOx, SOx, PM_{10}, and CO emissions are incidental to the control device (i.e. byproducts of combustion in the flare). In accordance with District practice, BACT requirements are not applicable to control devices. Collateral emissions resulting from a control device are therefore not subject to BACT requirements.

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

All BACT guidelines for flares have been rescinded. As such there is no applicable BACT guideline. A project specific BACT analysis must be performed.

3. Top-Down BACT Analysis

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

Pursuant to the attached Top-Down BACT Analysis (see **Attachment III**), BACT has been satisfied with the following:

VOC: The flare operates smokelessly limited to visible emissions less than 5% opacity except for a period or periods aggregating three minutes or less in any one hour.

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.

S-7045-23-0 and '-24-0 (each)

Offset Determination (lb/year)					
	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 ay the pollutant; therefore offset calculations are not necessary and offsets will not be required for this project.

C. Public Notification

1. Applicability

Pursuant to District Rule 2201, Section 5.4, public noticing is required for:

a. New Major Sources, Federal Major Modifications, and SB 288 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,
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant, and/or
e. Any project which results in a Title V significant permit modification

a. New Major Sources, Federal Major Modifications, and SB 288 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.

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

b. PE > 100 lb/day

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

S-7045-23-0 and '-24-0 (each)

PE > 100 lb/day Public Notice Thresholds			
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?
NO_X	204.0	100 lb/day	Yes
SO_X	42.9	100 lb/day	No
PM_{10}	24.0	100 lb/day	No
CO	1,110.0	100 lb/day	Yes
VOC	189.0	100 lb/day	Yes

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

c. Offset Threshold

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

S-7045-23-0 and '-24-0 (each)

Offset Thresholds				
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-7045-23-0 and '-24-0 (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.

e. Title V Significant Permit Modification

As shown in the Discussion of Rule 2520 below, this project does not constitute a Title V Significant Modification. Therefore, public noticing for Title V significant modifications is required for this project.

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:

Daily and annual amounts of gas flared shall not exceed 3.0 MMBtu/day nor 288 MMBtu in any rolling 12-month period. [District Rules 2201 and 4102]

Sulfur compound concentration of gas flared shall not exceed 5 gr/100 scf (85 ppmv). [District Rules 2201 and 4801]

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 Rules 2201 and 4201]

NOx emissions shall not exceed 19,584 pounds in any rolling 12-month period. VOC emissions shall not exceed 18,144 pounds in any rolling 12-month period [District Rule 2201]

On a monthly basis, the permittee shall calculate and record the monthly NOx and VOC emissions from this unit. [District Rule 2201]

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 (AAQA)

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, NOx, SOx and PM10. The results from the Criteria Modeling are as follows:

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

	Background Site	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Fresno - Drummond (2015)	Pass	X	Pass	X	X
NO_x	Hanford - Irwin (2016)	Pass[1]	X	X	X	Pass
SO_x	Fresno – Garland (2016)	Pass	Pass	X	Pass	Pass
PM_{10}	Hanford - Irwin (2016)	X	X	X	Pass[2]	Pass[2]
$PM_{2.5}$	Hanford - Irwin (2016)	X	X	X	Pass[3]	Pass[3]

*Results were taken from the attached PSD spreadsheet.
[1]The 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.
[2]The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).
[3] Modeled PM10 & Pm 2.5 concentrations were below the District SIL for non-fugitive sources of 5 µg/m3 for the 24-hour average concentration and 1 µg/m3 for the annual concentration.

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

Rule 2410 Prevention of Significant Deterioration

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

Rule 4001 New Source Performance Standards (NSPS)

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

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

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63. However, no subparts of 40 CFR Part 61 or 40 CFR Part 63 apply to well test flares.

Rule 4101 Visible Emissions

Rule 4101 requires that 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 PM_{10} the visible emissions will be limited to less than Ringelmann ¼ and less than 5% opacity. As long as the flaring system (with air assist) is operating correctly, compliance with this rule is expected.

Rule 4102 Nuisance

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

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

The cancer risk for this project is shown below:

RMR Summary						
Units	**Prioritization Score**	**Acute Hazard Index**	**Chronic Hazard Index**	**Maximum Individual Cancer Risk**	**T-BACT Required?**	**Special Permit Requirements?**
Unit 23-0 (125 MMBTU Flare)	10.0	0.00	0.00	3.80E-07	No	Yes
Unit 24-0 (125 MMBTU Flare)	10.0	0.00	0.00	3.80E-07	No	Yes

*Each flare is considered its own facility therefore; the risks will not be summed. No two flares will operate at the same time in the same location.

Proposed Permit Requirements

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

Discussion of T-BACT

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

The ATCs include the following special requirements:

Unit # 23-0 & 24-0

1. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction.
2. The units cannot operate within 1500 feet of the property boundary or any receptor (residential, offsite, and work site).
3. Flare shall not be operated at any location in conjunction with any other flare or combustion equipment operated by PROs Inc. [District Rule 2201] N

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 = $\frac{20.9}{(20.9 - 3)} = 1.17$

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

$$GL = 0.0055\ grain/dscf < 0.1\ grain/dscf$$

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:

SO_x = (5 gr/100 dscf fuel) x (1 lb/7000 gr S) x (1 mol/32 lb S) x (379.5 dscf S/1 mol S) x (1 dscf fuel/1000 Btu) x (1 x 10^6 Btu/8710 dscf) x (1 x 10^6)
= **9.7 ppmv** < 2,000 ppmv

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality Act (CEQA)

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

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

Oil and gas operations in Kern County must comply with the *Kern County Zoning Ordinance – 2015 (C) Focused on Oil and Gas Local Permitting.* In 2015, Kern County revised the Kern County Zoning Ordinance Focused on Oil and Gas Activities (Kern Oil and Gas Zoning Ordinance) in regards to future oil and gas exploration, and drilling and production of hydrocarbon resource projects occurring within Kern County.

Kern County served as lead agency for the revision to their ordinance under the California Environmental Quality Act (CEQA), and prepared an Environmental Impact Report (EIR)

that was certified on November 9, 2015. The EIR evaluated and disclosed to the public the environmental impacts associated with the growth of oil and gas exploration in Kern County, and determined that such growth will result in significant GHG impacts in the San Joaquin Valley. As such, the EIR included mitigation measures for GHG.

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 GHGs. The District has determined that the applicant is responsible for implementing GHG mitigation measures imposed in the EIR by the Kern County for the Kern County Zoning Ordinance.

District CEQA Findings

The proposed project is located in Kern County and is thus subject to the Kern County Zoning Ordinance – 2015 (C) Focused on Oil and Gas Local Permitting. The Kern County Zoning Ordinance was developed by the Kern County Planning Agency as a comprehensive set of goals, objectives, policies, and standards to guide development, expansion, and operation of oil and gas exploration within Kern County.

In 2015, Kern County revised their *Kern County Zoning Ordinance* in regards to exploration, drilling and production of hydrocarbon resources projects. Kern County, as the lead agency, is the agency that will enforce the mitigation measures identified the EIR, including the mitigation requirements of the Oil and Gas ERA. As a responsible agency the District complies with CEQA by considering the EIR prepared by the Lead Agency, and by reaching its own conclusion on whether and how to approve the project involved (CCR §15096). The District has reviewed the EIR prepared by Kern County, the Lead Agency for the project, and finds it to be adequate. The District also prepared a full findings document. The full findings document, *California Environmental Quality Act (CEQA) Statement of Findings for the Kern County Zoning Ordinance EIR* contains the details of the District's findings regarding the Project. The District's implementation of the Kern Zoning Ordinance and its EIR applies to ATC applications received for any new/modified equipment used in oil/gas production in Kern County, including new wells. The full findings applies to the Project and the Project's related activity equipment(s) is covered under the Kern Zoning Ordinance. To reduce project related impacts on air quality, the District evaluates emission controls for the project such as Best Available Control Technology (BACT) under District Rule 2201 (New and Modified Stationary Source Review). In addition, the District is requiring the applicant to surrender emission reduction credits (ERC) for stationary source emissions above the offset threshold.

Thus, the District concludes that through a combination of project design elements, permit conditions, and the Oil and Gas ERA, the project will be fully mitigated to result in no net increase in emissions. Pursuant to CCR §15096, prior to project approval and issuance of ATCs the District prepared findings.

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit is based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

The revision to the *Kern County Zoning Ordinance* went through an extensive public process that included a Notice of Preparation, a preparation of an EIR, scoping meetings, and public hearings. The process led to the certification of the final EIR and approval of the revised *Kern County Zoning Ordinance* in November 2015 by the Kern County Board of Supervisors. As mentioned above, the proposed project will be fully mitigated and will result in no net increase in emissions. In addition, the proposed project is not located at a facility of concern; therefore, an Indemnification Agreement and/or a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue Authorities to Construct S-7045-23-0 and '-24-0 subject to the permit conditions on the attached draft Authority to Construct in **Attachment V**.

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-7045-23-0 and '-24-0	3020-02-H	125 MMBtu/hr	$1183.00

Attachments

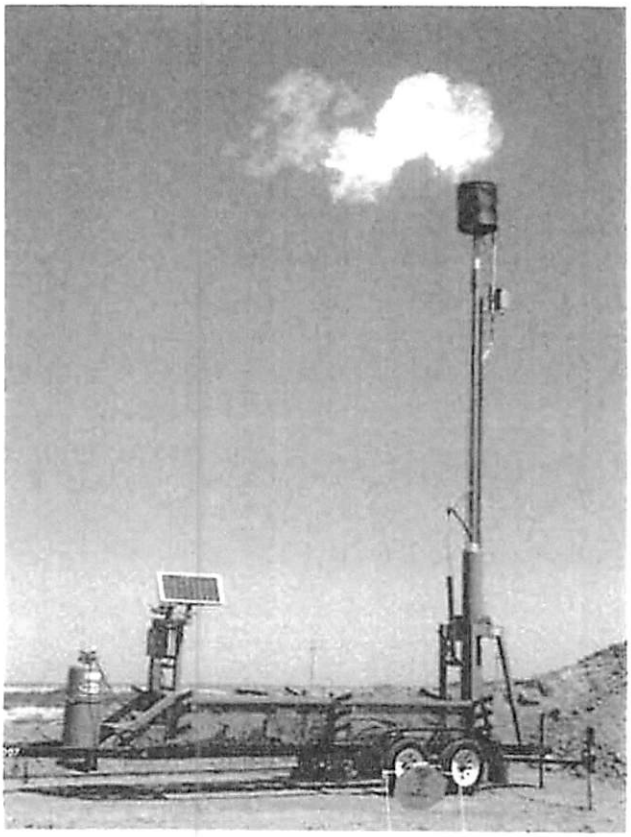
I: Photograph and Diagrams of Flare
II: Emissions Profiles
III: Top Down BACT Analysis
IV: AAQA and HRA Summary
V: Draft ATCs

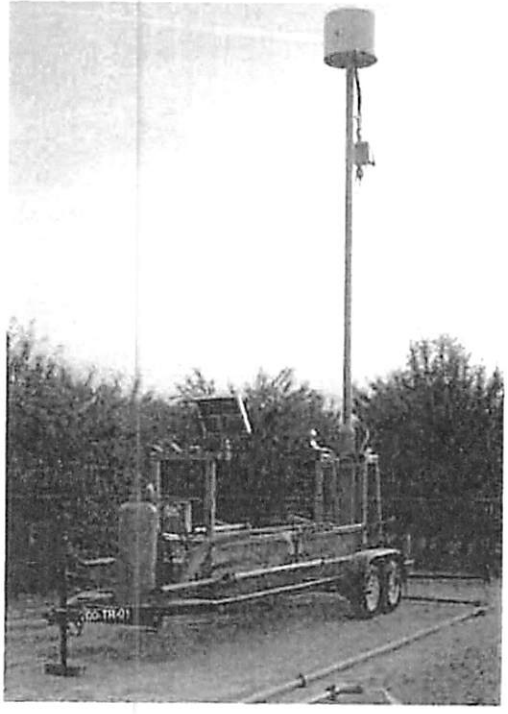
ATTACHMENT I

Photograph and Diagrams of Flare

A Professional Reliable Oilfield Services Company

PROS, Inc. Portable Flare Trailer





INSTALLATION, OPERATION AND MAINTENANCE MANUAL FOR THE SOLAR – RN-72-IDE FLARE IGNITION SYSTEM

Customer: ..... : PROS INCORPORATED

Location ..... : CALIFORNIA

P.O. # ..... : 607-2061

Mactronic File #.....: 6547 Job # E100374

Date ..... : NOVEMBER, 2008

For Parts and Service please contact:

MACTRONIC ENERFLEX

ENERFLEX SYSTEMS LTD.

Red Deer, Alberta, Canada (403) 342-1822

1-800-36-FLARE (Canada & U.S.)

E1 374 "B" Manuals

This Flare Ignition System must be installed by qualified personnel in accordance with applicable Electrical Code and this Installation Manual.

TABLE OF CONTENTS

A) INSTALLATION OF THE MACTRONIC ENERGY EFFICIENT PILOT

Refer to DWG. # 6547-RT

1) Remove the **Mactronic** Pilot from the crate.
2) Mount C shaped bracket provided on flare tip.
3) Secure pilot in place using bolting provided.
4) Secure wiring harness provided and connect to control panel with twist lock cord connectors.
5) Connect regulated pilot gas supply to pilot.

B) CONTROL PANEL

All control panels are bench tested and are ready for hook up. All components are pre-set and in place. There should be no adjustments required.

The Solar Control Panel has two Modes of Operation:

HAND OPERATION

Hold Spring Loaded Switch One SW-1 In HAND Position for 1 second Ignitor will spark for period of time SW-1 is held on. If gas is present ignition will occur

AUTO OPERATION

Turn Switch One SW-1 to AUTO Position. Ignitor will spark for 1 second every 30 seconds.

Please refer to **Section F - Drawings** Control Panel Wiring Diagram and the adjacent page for the Trouble Shooting Guide and Spare Parts List. **All Control Panels and Ignition Equipment are to be installed in a 'Standard Area' only unless the Control Panel comes in an Explosion Proof Enclosure.**

TROUBLE SHOOTING THE CONTROL PANEL

To check out the control panel operation refer to attached Dwg. 6547-CPW

1) The solar panel must be disconnected from the battery to get true readings. The solar panel, on a sunny day, when disconnected from the battery should put out 15V DC or more.

2) Check that the polarity on terminals **#2 and #3** on terminal block **TB1** are correct. (#2 - POSITIVE, #3 - NEGATIVE, 12 VDC).

3) Check that there is at least 10.5 VDC at this point, when the HOA switch is held in the HAND position. If not, battery service or replacement is required.

4) Check green LED on the **'Mac II'** card to see if it is lighting on each arc or lit continuously when HOA switch is held in HAND position. If the green LED is not lighting, then the card is not operating. Check the inter-connecting wires and replace the card if necessary.

5) Lower the Pilot Ignitor and check that the gap between the Spark Plug Ignitor tip and ground is **3/16".** If the gap is too large, replace the **I-18** Spark Plug Ignitor. **Be sure Control Panel is off and there is no power to the Ignitor during this procedure.**

6) If there is no arc present after completing the above, replace the **Transistor** and the **Isolation washer**. If, after replacement, there still is no arc, replace the **Coil** located in the Ignition Device Enclosure.

SPARE PARTS LIST

CONTROL PANEL

Part Description	Part Number
Transistor	ELEC-TRAN-NTE238
'Mac II' Card	ELEC-PCBO-PCBO2A
Key Switch	ELEC-SWIT-KEYED-3POS
Spark Plug Ignitor	ELEC-IGNI-004XI-18
Terminal Block	ELEC-TERM-16E
Fuse	ELEC-FUSE-OTM-10
Solar Panel	ELEC-SOLR-SX20U
Solar Charge Regulator	ELEC-SOLR-REG-ACS12/4

IGNITOR SPARE PARTS - MODEL: ELAS-IGNI-RN-72-IDE

Part Description	Part Number
Spark Plug Ignitor	ELEC-IGNI-004XI-18
Bushing	ELEC-BUSH-006X004MRSG
Coil	ELEC-COIL-UC15X

C) LIGHTING AND TROUBLE SHOOTING THE MACTRONIC PILOT

1) The **Mactronic** Energy Efficient Pilot requires a fuel gas supply at 3 to 5 PSIG. At this pressure the **Mactronic** Pilot will consume approximately 45 SCFH. Turn shutoff valve on and off to check pressure. Adjust regulator pressure up/down as necessary.
2) Once all equipment and pilot fuel gas supply is installed, the **Mactronic** Pilot can be ignited. Turn shutoff valve on and turn the control panel switch one [SW1] to AUTO. Pilot should ignite within 30 seconds while pilot fuel gas is purging pilot hose and control panel is arcing in sequence.
3) If the Pilot will not light or remain lit, check the following:
   - Is there pilot fuel gas to the regulator.
   - Is there a 3 – 5 PSIG reading on regulator gauge.
   - Are there any bends or twists in the pilot hose.
   - Disconnect the pilot hose from the base of the Pilot and check for pilot fuel gas. If gas is present, check to see if anything is plugging the unit and remove.
   - Check Pilot fuel supply to make sure no liquids are present.
   - Check to make sure there is a 3/16" to 1/4" gap between the high voltage Ignitor and the pilot deflector plate

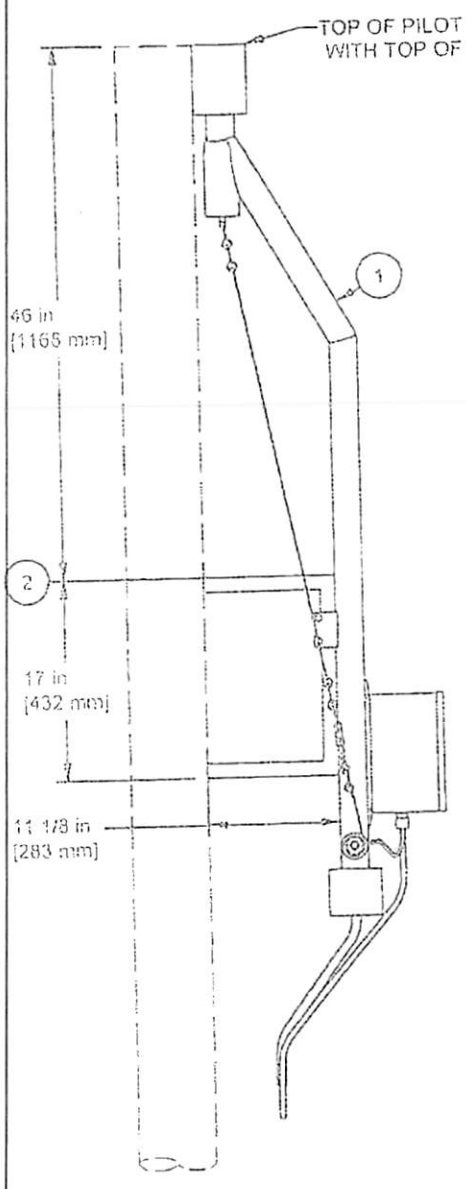
   If Pilot will still not light or remain lit, contact one of Mactronic's Service Technicians at 1-800-36-FLARE.

D) DRAWINGS

6547-CPW	CONTROL PANEL WIRING DIAGRAM
6547-RT	PILOT INSTALLATION DRAWING

Parts List

ITEM	DESCRIPTION	QTY	SIZE	MAT
1	PILOT/IGNITOR	1	MODEL: ELAS-IGNI-RN72-500	
2	STATIONARY CARRIER	1	1 1/4" SQ. TUBING	SA-36/44W



REVISION BLOCK

REV:	DATE:	DESCRIPTION:	BY:
0	4-NOV-08	FABRICATION	JOW

MACTRONIC ENERFLEX
RED DEER, ALBERTA, CANADA

CLIENT: PROS INCORPORATED

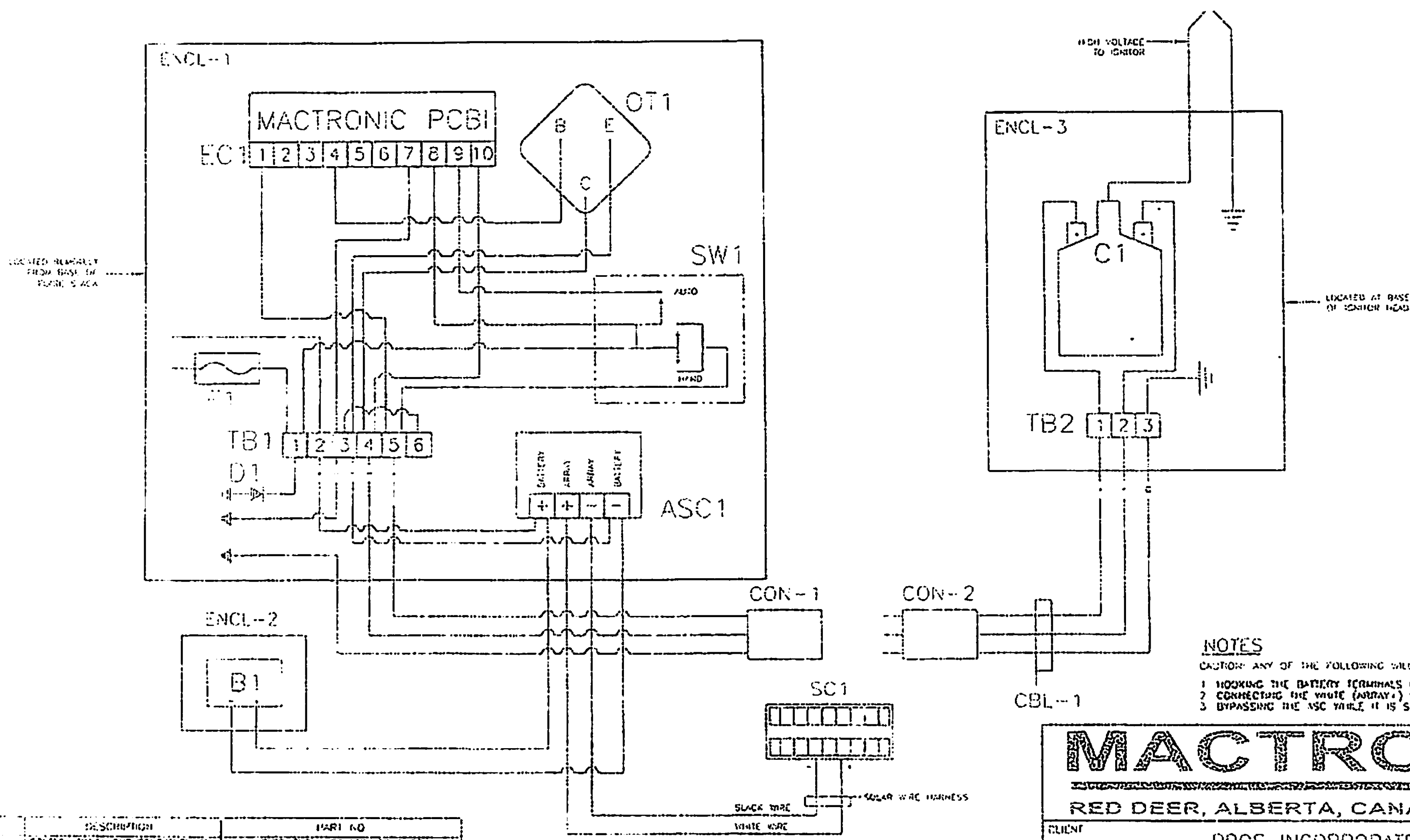
LOCATION: CALIFORNIA

P.O. #: 607-2061

TAG #:

TITLE: PILOT INSTALLATION DRAWING

DRAWN BY: JOW	CHECKED BY:	DATE: 4-NOV-08	SHEET: 1 OF 1	
APP. BY:	PROJECT BY:	SCALE: AS SHOWN	SIZE: B	REV: 0
JOB ORDER #: E100374	DRAWING #: 6547-RT			



NOTES

CAUTION: ANY OF THE FOLLOWING WILL DESTROY YOUR ASC !

1 HOOKING THE BATTERY TERMINALS UP BACKWARDS
2 CONNECTING THE WHITE (ARRAY+) WIRE TO THE BATTERY
3 BYPASSING THE ASC WHILE IT IS STILL INSTALLED IN THE SYSTEM

ITEM	DESCRIPTION	PART NO
[illegible]	CONTROL PANEL ENCLOSURE (NEMA3)	ELEC-ENCL-120x120x060N3MCS
[illegible]	CONTROL BOARD	ELEC-PCBD-PCB07A
[illegible]	TRANSISTOR	ELEC-TRAN-HIE235
[illegible]	FUSE	ELEC-FUSE-DTM-10
[illegible]	BATTERY BOX	ELEC-ENCL-120x120x100N3MCS
[illegible]	COIL	ELEC-COIL-UC15X
[illegible]	SOLAR CHARGE REGULATOR	ELEC-SOLAR-REG-ASC12/8
[illegible]	BATTERY	ELEC-BATT-DC 12V
[illegible]	SOLAR PANEL	ELEC-SOLR-SS20U
[illegible]	KEYED SWITCH	ELEC-SWIT-KEYED-3POS
[illegible]	TERMINAL BLOCK	ELEC-TERM-10C
[illegible]	IGNITION DEVICE ENCLOSURE	ELEC-ENCL-100x100x060N4MCS
[illegible]	[illegible] WIRES 7G [illegible]	[illegible]
[illegible]	[illegible] CONNECTOR [illegible]	[illegible]

LEGENDS
- - - - - BY OTHERS
- · - · - CABLE

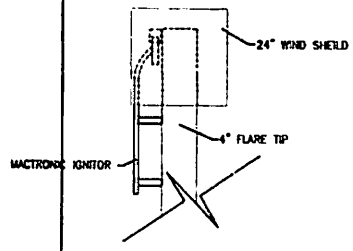
REVISION BLOCK

REV	DATE	DESCRIPTION	BY
0	4-NOV-03	FABRICATION	JOW

MACTRONIC
ENERFLEX
RED DEER, ALBERTA, CANADA

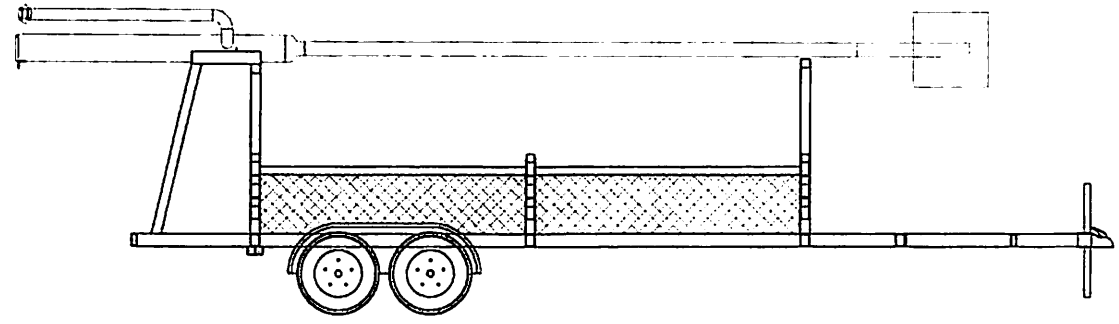
CLIENT	PROS INCORPORATED		
LOCATION	CALIFORNIA	P.O. #	607-2061
		TAG #	
TITLE	CONTROL PANEL WIRING DIAGRAM		
DRAWN BY	JOW	CHECKED BY	[signature]
APP BY	[signature]	PROJECT BY	[signature]
DATE	4-NOV-03	SCALE	NTS
JOB ORDER #	E100374	DRAWING NUMBER	6547-CPW

MANUFACTURE: PROS INCORPORATED
MODEL#: 740-01 THROUGH 740-14
TYPE: ELEVATED @ 26'-1" W/3" INLET
TYPE OF SERVICE: CONTINUOUS
RATED HEAT INPUT: 437.5 MMBTU/HOUR

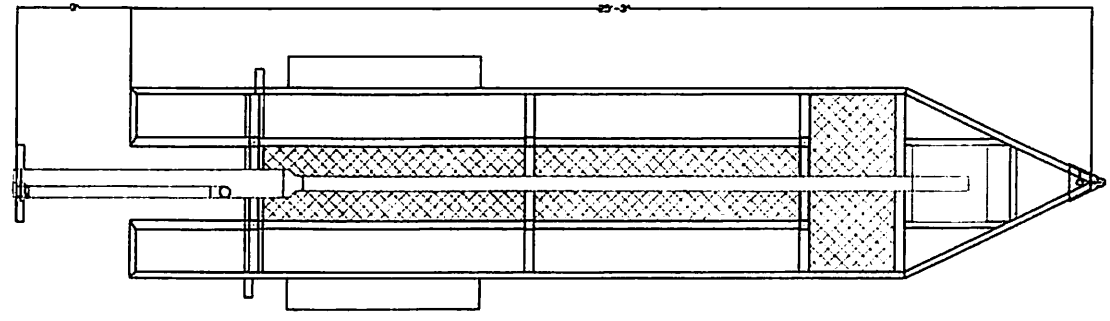


FLARE TIP

ELEVATION VIEW



SIDE VIEW



PLAN VIEW

NO.	DATE	BY	CHK'D	REVISIONS
0	3/29/05	AR	JL	ISSUED FOR REVIEW

PROS INC.

JOB NO.	30906
DWG NO.	

PROS INC.

GENERAL ARRANGEMENT

FLTR-1

0

ATTACHMENT II

Emissions Profile

Application Emissions

Permit #: S-7045-23-0	**Last Updated**
Facility: PROS INC	10/20/2018 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	19584.0	4118.0	2304.0	106560.0	18144.0
Daily Emis. Limit (lb/Day)	204.0	42.9	24.0	1110.0	189.0
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	1029.0	576.0	26640.0	4536.0
Q4:	4896.0	1029.0	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:					

Application Emissions

Permit #: S-7045-24-0	**Last Updated**
Facility: PROS INC	10/20/2018 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	19584.0	4118.0	2304.0	106560.0	18144.0
Daily Emis. Limit (lb/Day)	204.0	42.9	24.0	1110.0	189.0
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	1029.0	576.0	26640.0	4536.0
Q4:	4896.0	1029.0	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 Analysis

All current BACT guidelines for flares have been rescinded. Therefore, a project specific BACT analysis will be performed for this project.

1. BACT Analyses for VOCs:

a. Step 1 - Identify all control technologies

An open flare with smokeless combustion and visible emissions less than 5% opacity, except for a period or periods aggregating three minutes or less in any one hour (99% control efficiency)

Enclosed low NOx flares capable of achieving 99% control of VOC emissions and NOx emissions of 15 ppmv @ 3% O2 (99% control efficiency and NOx emissions $\leq$ 15 ppmv @ 3% O2).

b. Step 2 - Eliminate technologically infeasible options

Enclosed low NOx flares capable of achieving 99% control of VOC emissions and NOx emissions of 15 ppmv @ 3% O2 are not technically feasible to control well drilling and testing operations due to:

1) The highly variable nature of gas generated from a well drilling and testing operation are not suitable to combustion in an enclosed low NOx flare, as such flares require a steady flow of gas to operate properly, and
2) Low NOx flares are not inherently portable, as the equipment requires a large foundation, and equipment for control the air flow into the flare, temperature controls, etc.,

c. Step 3 - Rank remaining options by control effectiveness

Smokeless combustion with visible emissions less than 5% opacity, except for a period or periods aggregating three minutes or less in any one hour (99% control efficiency)

d. Step 4 - Cost effectiveness analysis

Because the applicant is proposing the one listed control technology listed Step 3 above, a cost effectiveness analysis is not required.

e. Step 5 - Select BACT

An open flare with smokeless combustion and visible emissions less than 5% opacity, except for a period or periods aggregating three minutes or less in any one hour (99% control efficiency). BACT is satisfied.

ATTACHMENT IV

HRA/AAQA

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	Richard Edgehill – Permit Services
From:	Ye Vang – Technical Services
Date:	October 10, 2018
Facility Name:	Pros Incorporated
Location:	Various Locations within SJVAPCD
Application #(s):	S-7045-23-0, 24-0
Project #:	S-1183793

A. RMR SUMMARY

RMR Summary						
Units	**Prioritization Score**	**Acute Hazard Index**	**Chronic Hazard Index**	**Maximum Individual Cancer Risk**	**T-BACT Required?**	**Special Permit Requirements?**
Unit 23-0 (125 MMBTU Flare)	10.0	0.00	0.00	3.80E-07	No	Yes
Unit 24-0 (125 MMBTU Flare)	10.0	0.00	0.00	3.80E-07	No	Yes

*Each flare is considered its own facility therefore; the risks will not be summed. No two flares will operate at the same time in the same location.

Proposed Permit Requirements

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

Unit # 22-0 & 23-0

1. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction.
2. The units cannot operate within 1500 feet of the property boundary or any receptor (residential, offsite, and work site).
3. Flare shall not be operated at any location in conjunction with any other flare or combustion equipment operated by PROs Inc. [District Rule 2201] N

B. RMR REPORT

I. Project Description

Technical Services received a request on October 09, 2018, to perform an Ambient Air Quality Analysis and a Risk Management Review for two transportable 125 MMBTU Flares used for well testing and drilling operations, equipment depressurization and pipeline pigging operated at various unspecified locations, SJVAPCD.

II. Analysis

Toxic emissions for this proposed unit were calculated using 2001 Ventura County's Air Pollution Control District's emission factors for Natural Gas Fired external combustion and from a refinery gas composition analysis from the 2005 report FINAL REPORT Test of TDA's Direct Oxidation Process for Sulfur Recovery, and input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015), risks from the proposed unit's toxic emissions were prioritized using the procedure in the 2016 CAPCOA Facility Prioritization Guidelines. The prioritization score for this proposed facility was greater than 1.0 (see RMR Summary Table). Therefore, a refined health risk assessment was required. The AERMOD model was used, with the parameters outlined below and meteorological data for 2010-2014 from Hanford to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Unit 23-0 & 24-0			
Source Type	Point	**Location Type**	Rural
Stack Height (m)	13.15	**Closest Receptor (m)**	457.2
Stack Diameter. (m)	2.27	**Type of Receptor**	Residential
Stack Exit Velocity (m/s)	56.25	**Max Hours per Year**	8760
Stack Exit Temp. (°K)	1275.37	**Fuel Type**	NG
Flare Rating (MMBTU/HR)	125	**Flare Rating (MMBTU/YR)**	288,000

*Calculated using Flare Modeling Parameter Estimator Spreadsheet.

Technical Services performed modeling for criteria pollutants CO, NO_x, SO_x, and PM10 with the emission rates below:

Unit #	**NO_x (Lbs.)**		**SO_x (Lbs.)**		**CO (Lbs.)**		**PM_{10} (Lbs.)**	
	Hr.	Yr.	Hr.	Yr.	Hr.	Yr.	Hr.	Yr.
23-0	8.5	19,584	1.78	4,118	46.25	106,560	1	2,304
24-0	8.5	19,584	1.78	4,118	46.25	106,560	1	2,304

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

	Background Site	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Fresno - Drummond (2015)	Pass	X	Pass	X	X
NO_x	Hanford - Irwin (2016)	Pass[1]	X	X	X	Pass
SO_x	Fresno – Garland (2016)	Pass	Pass	X	Pass	Pass
PM_{10}	Hanford - Irwin (2016)	X	X	X	Pass[2]	Pass[2]
$PM_{2.5}$	Hanford - Irwin (2016)	X	X	X	Pass[3]	Pass[3]

*Results were taken from the attached PSD spreadsheet.
[1]The 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.
[2]The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).
[3] Modeled PM10 & Pm 2.5 concentrations were below the District SIL for non-fugitive sources of 5 µg/m3 for the 24-hour average concentration and 1 µg/m3 for the annual concentration.

III. Conclusion

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

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

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

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

IV. Attachments

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

ATTACHMENT V

Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-7045-24-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: PROS INC
MAILING ADDRESS: PO BOX 20996
BAKERSFIELD, CA 93390-0996

LOCATION: VARIOUS LOCATIONS, SJVUAPCD

EQUIPMENT DESCRIPTION:
TRANSPORTABLE 125 MMBTU/HR FLARE WITH GAS SCRUBBER AND 3- PHASE SEPARATOR AND OPTIONAL AIR-ASSIST FOR MULTIPLE USES INCLUDING WELL TESTING AND DRILLING OPERATIONS, EQUIPMENT DEPRESSURIZATION, AND PIPELINE PIGGING 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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. 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]
4. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
5. The unit shall not operate within 1500 feet of any receptor (residential or offsite work site). [District Rule 4102]
6. Flare shall not be operated at any location in conjunction with any other flare or combustion equipment operated by PROs Inc. [District Rule 2201]
7. This permit shall not authorize the utilization of any IC engine, or other combustion device requiring a separate permit, for powering the air assist to the flare. [District Rule 2201]
8. The unit shall 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]
9. Flare shall be equipped with air assist which shall be utilized when needed to maintain visible emissions below Ringlemann 1/4 and 5% opacity for any 3 minute interval in an hour. [District Rules 2201 and 4101]

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.

Samir Sheikh, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services

Southern Regional Office • 34946 Flyover Court • Bakersfield, CA 93308 • (661) 392-5500 • Fax (661) 392-5585

10. Flare shall be equipped with operational automatic re-ignition provisions. [District Rule 2201]
11. Gas line to flare shall be equipped with operational, volumetric flow rate indicator. [District Rule 2201]
12. Daily and annual amounts of gas flared shall not exceed 3.0 MMBtu/day nor 288 MMBtu in any rolling 12-month period. [District Rules 2201 and 4102]
13. Sulfur compound concentration of gas flared shall not exceed 5 gr/100 scf (85 ppmv). [District Rules 2201 and 4801]
14. 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 Rules 2201 and 4201]
15. NOx emissions shall not exceed 19,584 pounds in any rolling 12-month period. VOC emissions shall not exceed 18,144 pounds in any rolling 12-month period [District Rule 2201]
16. On a monthly basis, the permittee shall calculate and record the monthly NOx and VOC emissions from this unit. [District Rule 2201]
17. On a monthly basis, the permittee shall calculate and record the monthly NOx and VOC emissions in pounds for the rolling 12-month period. [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 Rules 2201 and 4311]

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-7045-23-0

ISSUANCE DATE: DRAFT

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Samir Sheikh, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services

S-7045-23-0 : Oct 20 2018 10:18AM – EDGEH\LR : Joint Inspection NOT Required

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