



**DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

**Permit Application Analysis
A0001198**

August 6, 2015

NAME OF FIRM: QEPM Gathering I, LLC

NAME OF FACILITY: Pinedale Complex

FACILITY LOCATION: NW¼ Section 2, T31N, R109W
Lat: 42.69036° Long: -109.80881°
Sublette County, Wyoming

TYPE OF OPERATION: Compressor Station

RESPONSIBLE OFFICIAL: Daniel Pring, Senior Environmental Air Engineer

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REVIEWING ENGINEER: Nathan Henschel, Air Quality Modeler

1. PURPOSE OF APPLICATION

On June 15, 2015, Tesoro Logistics-Rockies on behalf of QEPM Gathering I, LLC (QEPM) submitted an application to the Division to modify the emission factors, operating hours, and maximum horsepower (hp) for the two (2) Caterpillar G3608SITA engines and the four (4) Caterpillar G3616SITA engines at the Pinedale Complex. QEPM also proposes to replace the existing high pressure flare (F2) with a new flare. The Pinedale Complex is located in the NW¼ of Section 2, T31N, R109W, approximately six (6) miles southwest of Boulder, in Sublette County, Wyoming.

A map of the compressor station location is attached as Appendix A.

2. PERMIT HISTORY

On November 8, 2012, Air Quality Permit MD-11378A was issued to QEP Field Services Company's (QEP) to modify Air Quality Permit MD-11378 (Corrected) for the Pinedale Complex. QEP proposed to remove several conditions related to two (2) existing 60,000 gallon separators that were previously identified as storage tanks. QEP also proposed language revisions to clarify that the electric recompressor was not considered a vapor recovery unit, but a process unit. This permit superseded all previous Chapter 6 Section 2 Permits and Waivers for the Pinedale Complex.

3. PROCESS DESCRIPTION

The Pinedale Complex consists of two (2) contiguous and adjacent facilities, the Pinedale Compressor Station (aka the Gobblers Knob Compressor Station) and the Pinedale Liquids Facility, both owned by QEPM Gathering I, LLC (formerly QEP Field Services Company), and operated by Tesoro Logistics GP, LLC.

3.1 Pinedale Compressor Station

The compressor station receives gas from field gathering lines and from the Vapor Recovery Unit (VRU) at the liquids facility and VRU from the two (2) 60,000 bbl storage tanks (CT1 and CT2). After slug catcher processing, the gas is directed to two (2) Caterpillar G3608SITA compressor engines, four (4) Caterpillar G3616SITA compressor engines, and one (1) Solar Titan 130 turbine and delivered to a sales line. The condensate from the inlet scrubber and the water and condensate from the slug catcher are collected in two (2) low pressure (200 psi) 60,000 gal condensate storage tanks (CT1 and CT2). Condensate is routed to a sales line, and water is routed to two (2) 400 bbl water and condensate storage tanks (ST1-ST2). Condensate from the compressor engines fuel gas scrubbers is also routed to the two (2) 400 bbl water and condensate storage tanks (ST1-ST2). There will only be truck loadout from the two (2) 400 bbl water and condensate storage tanks (ST1-ST2).

3.2 Pinedale Liquids Facility

3.2.1 Condensate Stabilization

The liquids facility receives condensate via the inlet condensate line. The condensate passes through a low pressure separator where water is separated and piped to the water disposal system. Hydrocarbon light ends from the low pressure separator are recompressed by a 200 hp electric motor and routed to the Pinedale Compressor Station suction header. The condensate is then routed to the condensate stabilizer system where it is heated to remove the light ends before entering the 6,000 bbl atmospheric condensate storage tank (ST3). Hydrocarbon light ends driven off by the stabilizer are recompressed by the 200 hp electric motor and routed to the Pinedale Compressor Station suction header. An 8.5 MMBtu/hr boiler is used to heat ethylene glycol, which serves as the heat transfer medium for the stabilizer system. ST3 also receives condensate from field production facilities directly via tank trucks. Additionally, unstabilized condensate from the low pressure separator may be atmospherically stabilized in ST3 at times when the stabilizer system is not operating. The condensate is pumped from ST3 into the sales pipeline. Emissions from ST3 are routed to the low pressure flare (F1).

3.2.2 Water Disposal System

Produced water enters the facility through the field gathering system pipeline. The water is routed to two (2) 1,000 bbl water tanks (ST4 and ST5). Condensate contained in the water in these tanks physically separates from the water and is atmospherically stabilized; the condensate is then piped to ST3. Water separated in the low pressure separator is also piped to ST4 and ST5. Emissions from ST4 and ST5 are routed to F1. The water in ST4 and ST5 is pumped to a third party disposal facility via a water pipeline.

4. ESTIMATED EMISSIONS

4.1 Engines

The major pollutants emitted from gas combustion include nitrogen oxides (NO_x) with some carbon monoxide (CO) from incomplete combustion. Volatile organic compounds (VOCs) including some hazardous air pollutants (HAPs) will also be emitted from the engines. QEPM proposes to increase the horsepower and decrease the NO_x and VOC emission rates for the two (2) installed Caterpillar G3608SITA engines (E1-E2) and the four (4) installed Caterpillar G3616SITA engines (E3-E6). QEPM also proposes to increase the number of hours of annual operation for the four (4) Caterpillar G3616SITA engines (E3-E6) engines. All of the engines are field gas fired. Emission factors and proposed emissions for the engines are shown in the following tables.

Table 1: Engine Emission Factors (g/hp-hr)							
ID	Engine	hp	Controls	NO _x	CO	VOC	Formaldehyde
Permitted							
E1-E2	Caterpillar G3608SITA	1,860	Lean Burn w/ Oxidation Catalyst	0.7	0.3	0.8	0.06
E3-E6	Caterpillar G3616SITA	3,720	Lean Burn w/ Oxidation Catalyst	0.7	0.25	0.7	0.045
Proposed							
E1-E2	Caterpillar G3608SITA	2,157	Lean Burn w/ Oxidation Catalyst	0.5	0.3	0.6	0.06
E3-E6	Caterpillar G3616SITA	3,797	Lean Burn w/ Oxidation Catalyst	0.5	0.25	0.5	0.045

Table 2: Engine Emissions									
ID	Engine	NO _x		CO		VOC		HAP ¹	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Permitted									
E1-E2	Caterpillar G3608SITA	2.9	12.6	1.2	5.4	3.3	14.4	0.27	1.20
E3-E6	Caterpillar G3616SITA ²	5.7	16.7	2.1	6.0	5.7	16.7	0.37	1.08
Proposed									
E1-E2	Caterpillar G3608SITA	2.4	10.4	1.4	6.3	2.9	12.5	0.29	1.25
E3-E6	Caterpillar G3616SITA ³	4.2	17.5	2.1	8.8	4.2	17.5	0.38	1.58

¹ Formaldehyde is the only significant HAP emitted from the engine.

² Ton per year emissions are based on 23,312 combined hours of annual operation divided between the four (4) engines (E3-E6).

³ Ton per year emissions are based on 33,500 combined hours of annual operation divided between the four (4) engines (E3-E6).

4.2 Flare

QEPM proposes to replace the existing 0.17 MMBtu/hr emergency flare (F2) with a 0.14 MMBtu/hr emergency flare equipped with two (2) pilot flames. Estimated emissions from this flare are 0.1 tpy of NO_x and CO.

The following two (2) tables show the permitted and proposed emissions for the Pinedale Complex.

Table 3: Pinedale Complex Permitted Emissions (MD-11378A)													
ID	Source	NO _x		CO		VOC		SO ₂		PM		HAPs ¹	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
E1	Caterpillar G3608SITA	2.9	12.6	1.2	5.4	3.3	14.4	--	--	--	--	0.27	1.20
E2	Caterpillar G3608SITA	2.9	12.6	1.2	5.4	3.3	14.4	--	--	--	--	0.27	1.20
E3	Caterpillar G3616SITA	5.7	66.8 ⁵	2.1	23.9 ⁵	5.7	66.8 ⁵	--	--	--	--	0.37	4.31 ⁵
E4	Caterpillar G3616SITA	5.7		2.1		5.7		--	--	--	--	0.37	
E5	Caterpillar G3616SITA	5.7		2.1		5.7		--	--	--	--	0.37	
E6	Caterpillar G3616SITA	5.7		2.1		5.7		--	--	--	--	0.37	
ST1-ST2	400 bbl Water/Condensate Tanks	--		--		--		--	0.7	3.1	--	--	
H1	0.25 MMBtu/hr Heater	<0.1	0.1	--	--	--	--	--	--	--	--	--	--
H2	0.25 MMBtu/hr Heater	<0.1	0.1	--	--	--	--	--	--	--	--	--	--
Fug1	Fugitive Emissions ⁶	--	--	--	--	0.7	3.3	--	--	--	--	<0.01	0.01
EGEN1	Cummins KTA50-G9 ²	33.7	8.4	41.6	10.4	4.9	1.2	4.5	1.1	1.9	0.5	0.01	0.03
H3	8.5 MMBtu/hr EG heater	0.9	3.7	0.7	3.1	<0.1	0.2	-	-	--	--	0.01	0.06
H4	2 MMBtu/hr Bypass heater	0.2	0.8	0.2	0.7	<0.1	<0.1	--	--	--	--	<0.01	0.02
H5	0.5 MMBtu/hr Produced water heater	<0.1	0.2	<0.1	0.2	<0.1	<0.1	-	-	--	--	--	--
H6	0.5 MMBtu/hr Produced water heater	<0.1	0.2	<0.1	0.2	<0.1	<0.1	-	-	--	--	--	--
F1	0.17 MMBtu/hr Low Pressure Flare	0.1	0.4	0.2	0.7	<0.1	<0.1	--	--	<0.1	<0.1	<0.01	<0.01
F2	0.17 MMBtu/hr Emergency Flare	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--	--	--	--
ST3, ST4, ST5	One 6,000 bbl condensate tank & two 1,000 bbl water tanks	--	--	--	--	0.4	1.6	--	--	--	--	0.02	0.07
Tur1	15,949 hp Solar Titan 130	7.0	30.8	0.4	1.6	1.0	4.3	<0.1	<0.1	0.8	3.5	0.03	0.13
TS	Turbine Seal Emissions ³	--	--	--	--	2.0	8.6	--	--	--	--	0.1	0.43
EGEN2	Caterpillar C27ACERT ²	11.1	2.8	5.5	1.4	<0.1	<0.1	1.9	0.5	<0.1	<0.1	0.01	0.03
F3	0.17 MMBtu/hr Emergency Flare	<0.1	<0.1	<0.1	<0.1	--	--	--	--	--	--	--	--
Fug2	Fugitive Emissions ⁴	--	--	--	--	4.4	19.1	--	--	--	--	0.01	0.05
CT1-CT2	60,000 gal Storage Tanks	Insignificant due to VRU											
Change in Emissions		81.6	139.5	59.4	53.0	43.5	137.0	6.4	1.6	2.7	4.0	2.24	7.66

¹ Formaldehyde is the most significant HAP emitted from the engines.

² Emissions based on 500 hours of operation per year.

³ Fugitive emissions associated with the turbine seals.

⁴ Fugitive emissions from sources located at the Pinedale Liquids Facility.

⁵ Emissions are based on 23,312 combined hours of annual operation for engines E3-E6.

⁶ Includes compressor station equipment leaks, engine startups & blowdowns, emergency shutdowns, pigging blowdowns, and truck loadouts from sources located at the Pinedale Complex.

Table 4: Pinedale Complex Proposed Emissions

IMPACT ID	ID	Source	NO _x		CO		VOC		SO ₂		PM		HAPs ¹	
			lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
ENG001	E1	Caterpillar G3608SITA	2.4	10.4	1.4	6.3	2.9	12.5	--	--	--	--	0.29	1.25
ENG002	E2	Caterpillar G3608SITA	2.4	10.4	1.4	6.3	2.9	12.5	--	--	--	--	0.29	1.25
ENG003	E3	Caterpillar G3616SITA	4.2	70.1 ⁵	2.1	35.1 ⁵	4.2	70.1 ⁵	--	--	--	--	0.38	6.31 ⁵
ENG004	E4	Caterpillar G3616SITA	4.2		2.1		4.2		--	--	--	--	0.37	
ENG005	E5	Caterpillar G3616SITA	4.2		2.1		4.2		--	--	--	--	0.37	
ENG006	E6	Caterpillar G3616SITA	4.2		2.1		4.2		--	--	--	--	0.37	
TNK001-TNK002	ST1-ST2	400 bbl Water/Condensate Tanks	--		--		--		--	0.7	3.1	--	--	
HET001	H1	0.25 MMBtu/hr Heater	<0.1	0.1	--	--	--	--	--	--	--	--	--	--
HET002	H2	0.25 MMBtu/hr Heater	<0.1	0.1	--	--	--	--	--	--	--	--	--	--
FUG001	Fug1	Fugitive Emissions ⁶	--	--	--	--	0.7	3.3	--	--	--	--	<0.01	0.01
ENG008	EGEN1	Cummins KTA50-G9 ²	33.7	8.4	41.6	10.4	4.9	1.2	4.5	1.1	1.9	0.5	0.01	0.03
HET003	H3	8.5 MMBtu/hr EG heater	0.9	3.7	0.7	3.1	<0.1	0.2	-	-	--	--	0.01	0.06
HET004	H4	2 MMBtu/hr Bypass heater	0.2	0.8	0.2	0.7	<0.1	<0.1	--	--	--	--	<0.01	0.02
HET005	H5	0.5 MMBtu/hr Produced water heater	<0.1	0.2	<0.1	0.2	<0.1	<0.1	-	-	--	--	--	--
HET006	H6	0.5 MMBtu/hr Produced water heater	<0.1	0.2	<0.1	0.2	<0.1	<0.1	-	-	--	--	--	--
FLR001	F1	0.17 MMBtu/hr Low Pressure Flare	0.1	0.4	0.2	0.7	<0.1	<0.1	--	--	<0.1	<0.1	<0.01	<0.01
FLR002	F2	0.14 MMBtu/hr High Pressure Emergency Flare	<0.1	0.1	<0.1	0.1	<0.1	<0.1	--	--	--	--	--	--
TNK003-TNK005	ST3, ST4, ST5	One 6,000 bbl condensate tank & two 1,000 bbl water tanks	--	--	--	--	0.4	1.6	--	--	--	--	0.02	0.07
ENG007	Tur1	15,949 hp Solar Titan 130	7.0	30.8	0.4	1.6	1.0	4.3	<0.1	<0.1	0.8	3.5	0.03	0.13
FUG003	TS	Turbine Seal Emissions ³	--	--	--	--	2.0	8.6	--	--	--	--	0.1	0.43
ENG009	EGEN2	Caterpillar C27ACERT ²	11.1	2.8	5.5	1.4	<0.1	<0.1	1.9	0.5	<0.1	<0.1	0.01	0.03
FLR003	F3	0.17 MMBtu/hr Emergency Flare	<0.1	<0.1	<0.1	<0.1	--	--	--	--	--	--	--	--
FUG002	Fug2	Fugitive Emissions ⁴	--	--	--	--	4.4	19.1	--	--	--	--	0.01	0.05
TNK006-TNK007	CT1-CT2	60,000 gal Storage Tanks	Insignificant due to VRU											
Change in Emissions			-7.0	-1.0	0.4	13.1	-6.8	-0.5	0.0	0.0	0.0	0.0	0.05	2.10
Total Permitted Emissions			74.6	138.5	59.8	66.1	36.7	136.5	6.4	1.6	2.7	4.0	2.29	9.76

¹ Formaldehyde is the most significant HAP emitted from the engines.

² Emissions based on 500 hours of operation per year.

³ Fugitive emissions associated with the turbine seals.

⁴ Fugitive emissions from sources located at the Pinedale Liquids Facility.

⁵ Emissions are based on 33,500 combined hours of annual operation for engines E3-E6

⁶ Includes compressor station equipment leaks, engine startups & blowdowns, emergency shutdowns, pigging blowdowns, and truck loadouts from sources located at the Pinedale Complex.

5. BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

Per the requirements of Chapter 6 Section 2 of the Wyoming Air Quality Standards and Regulations (WAQSR), all facilities must demonstrate the use of BACT.

5.1 NO_x and VOC

As the emission factors for the Caterpillar G3608SITA engines and the Caterpillar G3616SITA engines decreased, no BACT review for these pollutants was required with this modification.

5.2. CO and Formaldehyde (HAPs) Emissions

The Caterpillar G3608SITA engines (E1-E2) and the Caterpillar G3616SITA engines (E3-E6) engines will be equipped with an oxidation catalyst which aids in the destruction of CO, VOC and formaldehyde. The Division considers the installation of an oxidation catalyst meeting emission rates as listed in Table 1 as representing BACT for these engine types.

In comparison with emission limits under 40 CFR part 63, subpart ZZZZ, the lean burn engines would be expected to meet a formaldehyde emission rate of approximately 0.12 g/hp-hr (14 ppmvd @ 15% O₂) as can be seen in the table below.

Table 5: Potential Formaldehyde Emission Rates (tpy)				
ID	Source	Uncontrolled	MACT	BACT
E1	Caterpillar G3608SITA	7.18	2.50	1.25
E2	Caterpillar G3608SITA	7.18	2.50	1.25
E3-E6	Caterpillar G3616SITA ¹	56.09	16.83	6.31
Totals		70.45	21.83	8.81

¹ Based on 33,500 combined hours of annual operation for engines E3-E6

The Division will establish formaldehyde emission limits for the Caterpillar G3608SITA engines (E1-E2) and the Caterpillar G3616SITA engines (E3-E6) engines to ensure the facility remains a minor source of formaldehyde. The formaldehyde emission limits will be on a pound per hour basis, based on BACT thresholds as listed in Table 1. To ensure compliance with emission limits, the Division considers following the operating limitations for lean burn engines as described in the MACT standard as representing BACT. The operating limitations consist of monitoring the inlet catalyst temperature and pressure drop across the catalyst.

6. CHAPTER 6, SECTION 2(c)(ii) DEMONSTRATION

Under the Wyoming Air Quality Standards and Regulations (WAQSR), applicants for permits are required to demonstrate to the Administrator of the Air Quality Division (AQD), that “[t]he proposed facility will not prevent the attainment or maintenance of any ambient air quality standard.” [WAQSR Chapter 6, Section 2(c)(ii)].

Options for the Chapter 6, Section 2(c)(ii) Demonstration include:

- a. Ambient ozone modeling for any application requesting increases in VOCs and/or NO_x emissions.
- b. Emission reductions for VOCs and/or NO_x emissions.
- c. Applicants may propose alternate innovative Demonstrations to the AQD.

A Chapter 6, Section 2(c)(ii) demonstration in accordance with the Division’s Interim Policy has been conducted. Emission offset requirements, if applicable, have been applied to this permitting action at a ratio of 1.5:1.0 for VOCs and 1.1:1.0 for NO_x.

QEPM has chosen to offset VOC and NO_x emissions by using emission offsets banked from previous reductions. On December 8, 2014 and as part of this action, QEP Energy Company agreed to transfer emission offset credits from QEP’s “bank” to QEPM effective immediately. A total of 102.1 tons of NO_x and 5.4 tons of VOC credits were removed from QEP’s bank and added to QEPM’s bank of available credits.

The Division is not tracking emissions offsets on an application by application basis. To ensure offsets are not being double counted and credits are available for future applications, the Division has developed a spreadsheet to track all permitting actions since April 1, 2008. This spreadsheet has been provided to QEPM to use as part of their demonstration.

Table 6: Demonstration of Proposed Emission Reduction		
Source	NO _x	VOC
	tpy	tpy
Current Permitted Emissions	139.5	137.0
Emissions Resulting After Modification	138.5	136.5
Proposed Total Emissions Increase	-	-
Offset Factor	1.1	1.5
Offset Required	-	-
Banked Emissions from Previous Reductions	-102.1	-5.4
Net Change	-1.0	-0.5
Total Banked Emissions	-103.1	-5.9

Attached to this analysis as Appendix B is QEPM’s demonstration spreadsheet. As shown, permitting actions to date, including this application, have resulted in a decrease in VOC emissions of 102.6 tpy and a decrease in NO_x emissions of 6.5 tpy. Therefore, QEPM has met the offset requirements for NO_x and VOC. The Division is satisfied that the proposed permitting actions will not prevent the attainment or maintenance of any ambient air quality standard as required by WAQSR Chapter 6, Section 2(c)(ii).

7. CHAPTER 6, SECTION 3 APPLICABILITY

Based on the proposed modification to the Pinedale Complex, QEPM will need to modify their operating permit. Therefore, QEPM shall modify their operating permit in accordance with Chapter 6, Section 3 of the Wyoming Air Quality Standards and Regulations (WAQSR).

8. NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (MACT)

The facility is not a major source of HAPs with formaldehyde limits (see BACT analysis) as defined by the WAQSR, as emissions are less than 10 tpy of any individual HAP, or 25 tpy of any combination of HAPs. EPA's current promulgated NESHAP rules under 40 CFR part 63, subpart ZZZZ apply to major sources of HAP emissions, as well as area sources of HAP emissions. Since the compressor station has the potential to emit less than 10 tpy of any individual HAP, or 25 tpy of any combination of HAPs, the facility is considered an area source of HAPs, and engines at this facility will be subject to all applicable requirements of 40 CFR part 63, subpart ZZZZ, based on the construction date.

9. PREVENTION OF SIGNIFICANT DETERIORATION (PSD)

No air pollutant is emitted at a rate of 250 tpy or more. Therefore, the compressor station is not a "major emitting facility" as defined in Chapter 6, Section 4 of the WAQSR, and a PSD analysis is not required.

10. NEW SOURCE PERFORMANCE STANDARDS (NSPS)

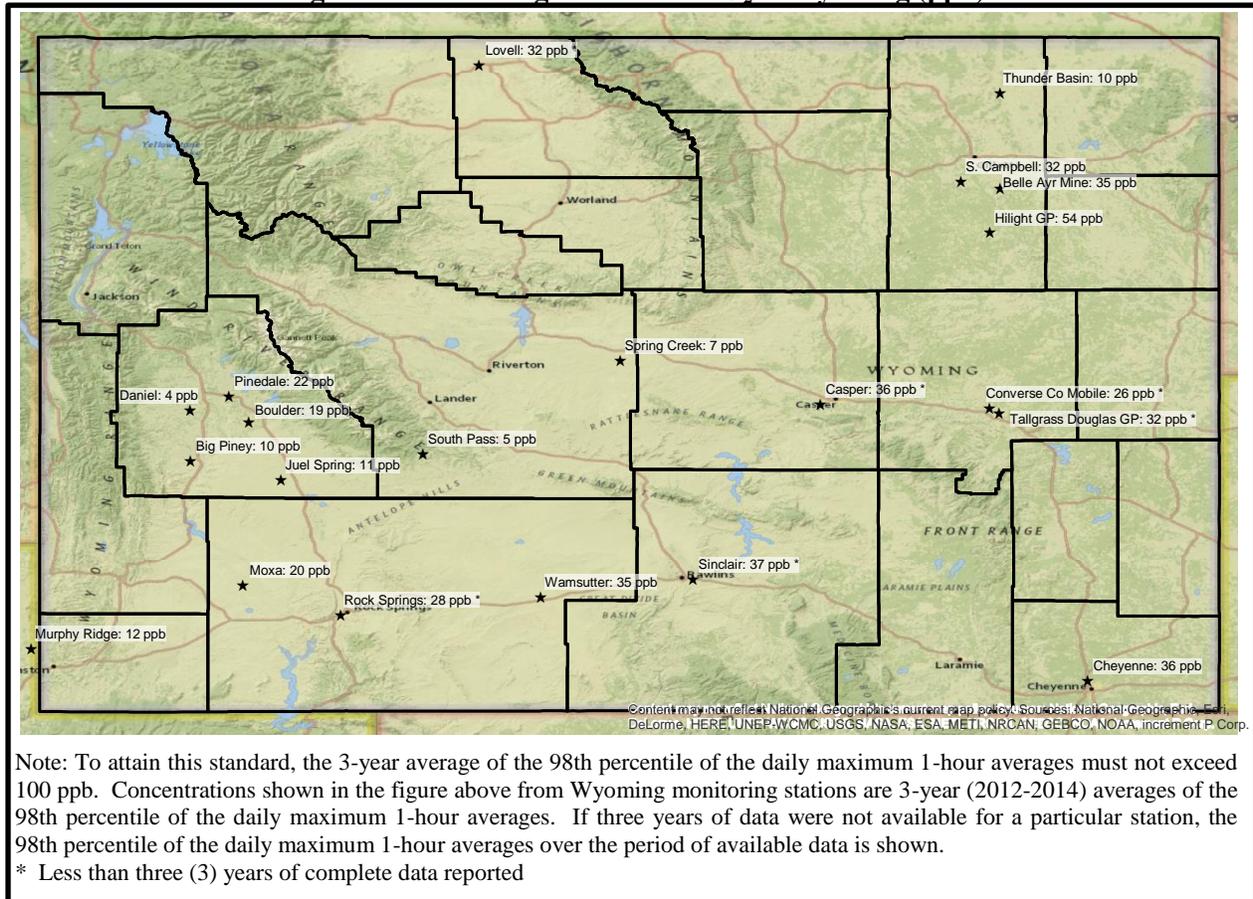
The engines at this facility are subject to applicable requirements of 40 CFR part 60, subpart JJJJ - *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines* based on the manufacture date of the engines.

11. AMBIENT AIR QUALITY

The Division did not require modeling for this proposed modification. As the project creates an overall NO_x reduction for the Pinedale Complex from what was modeled for Air Quality Permit MD-7332. MD-7332 accounted for a total NO_x emission rate of 138.8 tpy. The modeling analysis for Permit MD-7332 indicated that the model predicted annual concentration of NO₂ (17.1 µg/m³) was below the applicable ambient air quality standard. With this application, NO_x emissions at the Pinedale Complex will decrease to 138.5 tpy. Therefore, the Division expects that NO₂ concentrations will remain below the annual ambient air quality standard for NO₂.

Statewide monitoring of NO₂ on the basis of a 1-hour averaging period indicates that the 1-hour NAAQS of 100 ppb is not threatened at any of twenty-one (21) monitoring sites through 2014 (see Figure 1 below). Several of the Wyoming monitors are located in areas of concentrated industrial development. County-wide NO_x emissions in Sweetwater County were an estimated 38,280 tons in 2011. Multiple monitors are also located in Campbell County (estimated 44,420 tons of NO_x in 2011), Converse County (estimated 19,280 tons in 2011) and Sublette County (estimated 4,970 tons NO_x in 2011). Based on the current statewide 1-hour NO₂ monitoring and the minor-source NO_x emissions total from the Pinedale Complex, the Division is satisfied that the operation of the Pinedale Complex will not prevent the attainment or maintenance of the 1-hour NAAQS for NO₂.

Figure 1: Monitoring for 1-Hour NO₂ in Wyoming (ppb)



12. PROPOSED PERMIT CONDITIONS

The Division proposes to issue an Air Quality Permit to QEPM Gathering I, LLC to modify the Pinedale Complex with the following conditions:

1. That authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution and for determining compliance or non-compliance with any rules, standards, permits or orders.
2. That all substantive commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.
3. That QEPM Gathering I, LLC shall file a complete application to modify their Operating Permit within twelve (12) months of commencing operation, in accordance with Chapter 6, Section 3(c)(i)(B) of the WAQSR. Where an existing operating permit would prohibit such construction or change in operation, the owner or operator must obtain a permit revision before commencing operation.

4. That all notifications, reports and correspondences associated with this permit shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25th Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 510 Meadowview Drive, Lander, WY 82520.
5. That upon shutdown and removal of an engine from the facility, written notification is required within fifteen (15) days of removal. Such notification shall be submitted on a complete Engine Installation/Removal form. The form can be downloaded from the Air Quality website <http://deq.state.wy.us/aqd> or obtained from the Air Quality Division.
6. Unless engine replacement is specifically authorized for a unit in this permit, once an engine is removed from the facility, an engine cannot be installed and operated in its place unless authorized by an appropriate permit modification.
7. That emissions from each engine shall be limited as follows:

Engine	ID	NO _x			CO			VOC			Formaldehyde	
		g/hp-hr	lb/hr	tpy	g/hp-hr	lb/hr	tpy	g/hp-hr	lb/hr	tpy	lb/hr	tpy
Caterpillar G3608SITA	E1	0.5	2.4	10.4	0.3	1.4	6.3	0.6	2.9	12.5	0.29	1.25
Caterpillar G3608SITA	E2	0.5	2.4	10.4	0.3	1.4	6.3	0.6	2.9	12.5	0.29	1.25
Caterpillar G3616SITA	E3	0.5	4.2	70.1 ⁵	0.25	2.1	35.1 ⁵	0.5	4.2	70.1 ⁵	0.38	6.31 ⁵
Caterpillar G3616SITA	E4	0.5	4.2		0.25	2.1		0.5	4.2		0.37	
Caterpillar G3616SITA	E5	0.5	4.2		0.25	2.1		0.5	4.2		0.37	
Caterpillar G3616SITA	E6	0.5	4.2		0.25	2.1		0.5	4.2		0.37	

¹ Combined limits for engines E3-E6, which are limited to a cumulative 33,500 hours of annual operation.

8. That QEPM Gathering I, LLC shall follow the testing requirements as follows for engines E1-E6:
 - i. That every twelve (12) calendar months, or more frequently as specified by the Administrator, the engines E1-E6 shall be tested to verify compliance with the NO_x, CO, VOC, and formaldehyde limits set forth in this permit. Periodic tests for each engine are required within twelve (12) calendar months after completion of the initial performance test or the last periodic test. Testing for NO_x, CO and VOCs shall follow 40 CFR part 60, subpart JJJJ §60.4244, except that §60.8 only applies to engines subject to 40 CFR part 60, subpart JJJJ. Testing for formaldehyde shall follow EPA reference methods and a Division-approved formaldehyde test method. Formaldehyde emissions in terms of lb/hr shall be calculated using the methodology in Sections 10.1.1.1 and 10.1.1.2 of the State of Wyoming’s Portable Analyzer Protocol. For engines E1-E6 testing of NO_x, CO, VOC, and formaldehyde shall be conducted concurrently. Notification of the test date shall be provided to the Division fifteen (15) days prior to testing. Results of the tests shall be submitted to the Division within forty-five (45) days of completing the tests.

- ii. The Air Quality Division shall be notified within twenty-four (24) hours of any engine, generator, or turbine, where the testing/monitoring required by (i) of this condition shows operation outside the permitted emission limits. By no later than seven (7) calendar days of such testing/monitoring event, the owner or operator shall repair and retest/monitor the affected engine to demonstrate that the engine has been returned to operation within the permitted emission limits. Compliance with this permit condition regarding repair and retesting/monitoring shall not be deemed to limit the authority of the Air Quality Division to cite the owner or operator for an exceedance of the permitted emission limits for any testing/monitoring required by (i) of this condition which shows noncompliance.
9. That QEPM Gathering I, LLC shall follow the monitoring and maintenance requirements as follows for the engines E1-E6 equipped with an oxidation catalyst:
 - i. Operate and maintain the engine, air pollution control equipment, and monitoring equipment according to good air pollution control practices at all times, including startup, shutdown, and malfunction.
 - ii. Install a thermocouple to measure the inlet catalyst temperature.
 - a. The inlet temperature shall be recorded at least monthly. If the temperature is outside of the range listed below, corrective action shall be taken.

Oxidation Catalyst: 450 °F to 1350 °F
 - iii. Install a device to measure the pressure drop across the catalyst.
 - a. The pressure drop across the catalyst shall be recorded at least monthly. If the pressure changes by more than two (2) inches of water at one-hundred percent (100%) load, plus or minus ten percent (10%), from the pressure drop as determined below, corrective action shall be taken.
 1. During the initial performance test required by this permit, the reference pressure drop shall be established. When the catalyst is replaced, the reference pressure drop shall be reestablished during the subsequent periodic testing required by this permit.
 - iv. Records of catalyst inlet temperature, pressure drop, and any maintenance or corrective actions shall be kept and maintained for a period of five (5) years and shall be made available to the Division upon request.
10. Compliance with 40 CFR part 63, subpart ZZZZ §63.6605 and §63.6640 can be used in lieu of the monitoring and maintenance requirements in Condition 10.
11. That QEPM Gathering I, LLC shall limit the Caterpillar G3616SITA engines (E3-E6) to operate no more than 33,500 cumulative hours per year. Each engine shall be equipped with a non-resettable hour meter, and the hours of operation for each of the engines shall be recorded and reported to the Division on an annual basis.

12. The flares shall be designed, constructed, operated and maintained to be smokeless per Chapter 3, Section 6 (b)(i) of the WAQSR, with no visible emissions except for periods not to exceed a total of five (5) minutes during any two (2) consecutive hours as determined by 40 CFR part 60, appendix A, Method 22.
13. The presence of the pilot flames for the flares shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. The equipment controlled by the flare shall not operate if there is no flare pilot flame detected.
14. QEPM Gathering I, LLC shall comply with all applicable requirements of 40 CFR part 60, subpart JJJJ.
15. QEPM Gathering I, LLC shall comply with all applicable requirements of 40 CFR part 63, subpart ZZZZ.
16. All records required by this permit shall be kept for a period of at least five (5) years and shall be made available to the Division upon request.
17. The conditions of this permit shall supersede Conditions 7, 11(i), and 14-16 of Air Quality Permit MD-11378A and become effective upon permit issuance. All other conditions of Air Quality Permit MD-11378A shall remain in effect.

Appendix A
Facility Location

R109W

R108W

T32N

T32N

T31N

T31N

R109W

R108W

Boulder

Gaging Sta

353

187

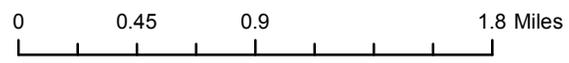
New Fork

Pinedale Complex

2137

T 32 N

T 31 N



QEPM Gathering I, LLC
Pinedale Complex
NW¼ of Section 2, T31N, R109W
Sublette County, Wyoming



Appendix B

Offset Spreadsheet

AppNum	Company	Facility	PermitNumber	PermitDate	Current VOC	CurrentN Ox	Base VOC	Base NOx	Delta VOC	Delta NOx	Offset VOC	OffsetN Ox	DemoComments
7332	QEPM Gathering	Pinedale Compressor Station	MD-7332	7/31/2008	117.9	138.8	128.4	139.5	-10.5	-0.7	-10.5	-0.7	Permit Actions: MD-7332 Notes: turbine installation
8682	QEPM Gathering	Pinedale Complex	MD-8682	7/16/2010	108.3	139.2	113	139.2	-4.7	0	-4.7	0	Note: routing condensate to sales line instead of truck loadout
10895	QEPM Gathering	Pinedale Complex	MD-10895	10/22/2010	1.1	0.3	0	0	1.1	0.3	1.7	0.3	(ST3) to two (2) 1,000 bbl water tanks (ST4 & ST5) and one (1) 6,000 bbl condensate tank (ST3)
11378	QEPM Gathering	Pinedale Complex	MD-11378	3/2/2011	137	139.5	114.1	139.5	22.9	0	34.4	0	revising the VOC emission rate of four (4) 3,720 hp Caterpillar G3616SITA engines to 0.7 g/hp-hr
13885	QEPM Gathering	Pinedale Complex	MD-11378A	11/8/2012	137	139.5	137	139.5	0	0	0	0	remove Conditions 21, 22, 24, 25 and revise Condition 23. There is no change in NOx or VOC emissions, no offsets required.
15150	QEPM Gathering	Dry Piney Compressor Station	MD-15150	10/7/2013	3.3	2.3	24.3	100.3	-21	-98	-21	-98	Ingersoll Rand 12-SVGA compressor engine with one (1) 483 hp Waukesha H24GSI compressor engine
16176	QEPM Gathering	Pinedale Complex	wv-16176	4/18/2014	0	0	0	0	0	0	0	0	offsets not required as the engines are temporary sources
16347	QEPM Gathering	Stewart Point 16-18 CDP	CT-4062A	8/12/2014	0	0	0	0	0	0	0	0	offsets not required for emergency equipment
A0000318	QEPM Gathering	Mesa 8-17 PAD			3.6	2.7	7.2	4.7	-3.6	-2	-3.6	-2	dehydration unit removal
A0000319	QEPM Gathering	Mesa 11-7 PAD			1.7	2.5	3.4	4.2	-1.7	-1.7	-1.7	-1.7	dehydration unit removal
A0000729	QEPM Gathering	Mesa 12-8 PAD (Dehy)	P0017807		0.4	0.7	0.4	0.7	0	0	0	0	no change in equipment or emissions
A0000730	QEPM Gathering	Mesa 7-7 PAD (Dehy)			4.7	2.8	4.7	2.8	0	0	0	0	no equipment changes and no emission changes

AppNum	Company	Facility	PermitNumber	PermitDate	Current VOC	CurrentN Ox	Base VOC	Base NOx	Delta VOC	Delta NOx	Offset VOC	OffsetN Ox	DemoComments
A0000731	QEPM Gathering I	Mesa 5-8 PAD (Dehy)			1.5	2.4	1.5	2.4	0	0	0	0	no change in equipment or emissions
A0000732	QEPM Gathering I	Mesa 4-8 (Dehy)	P0017806		4.9	0.1	4.9	0.1	0	0	0	0	no change in equipment or emissions
A0000733	QEPM Gathering I	Mesa 12-16 PAD (Dehy)			1	1.5	1	1.5	0	0	0	0	no change in equipment or emissions
A0000734	QEPM Gathering I	Mesa 15-16 PAD (Dehy)			2.3	1.4	2.3	1.4	0	0	0	0	no change in equipment or emissions
A0000735	QEPM Gathering I	Mesa 13-5V (Dehy)			10.8	0.1	10.8	0.1	0	0	0	0	no change in equipment or emissions
A0000736	QEPM Gathering I	Mesa 11-16 PAD (Dehy)			2.2	0.7	2.2	0.7	0	0	0	0	no change in equipment or emissions
A0000737	QEPM Gathering I	Mesa 1 PAD (Dehy)			2.1	0.5	2.1	0.5	0	0	0	0	no change in equipment or emissions
A0000740	QEPM Gathering I	Mesa 9-8 PAD (Dehy)			3.1	2.8	3.1	2.8	0	0	0	0	no change in equipment or emissions
A0000741	QEPM Gathering I	Mesa 14-16 PAD (Dehy)			1.8	0.4	1.8	0.4	0	0	0	0	no change in equipment or emissions
A0000742	QEPM Gathering I	Stewart Point 1-30 PAD (Dehy)			1.8	0.4	1.8	0.4	0	0	0	0	no change in equipment or emissions
A0000743	QEPM Gathering I	Stewart Point 7-20 PAD (Dehy)			5.7	2.8	5.7	2.8	0	0	0	0	no change in equipment or emissions
A0000744	QEPM Gathering I	Mesa 13-16 PAD (Dehy)			0.4	0.9	0.4	0.9	0	0	0	0	no change in equipment or emissions

AppNum	Company	Facility	PermitNumber	PermitDate	Current VOC	CurrentN Ox	Base VOC	Base NOx	Delta VOC	Delta NOx	Offset VOC	OffsetN Ox	DemoComments
A0000745	QEPM Gathering	Mesa 6-16 PAD (Dehy)			1.5	2.6	1.5	2.6	0	0	0	0	no change in equipment or emissions
A0000746	QEPM Gathering	Mesa 15-9 PAD (Dehy)			1.3	1.5	1.3	1.5	0	0	0	0	no change in equipment or emissions
A0000747	QEPM Gathering	Mesa 6-7 PAD (Dehy)			3.4	2.7	3.4	2.7	0	0	0	0	no change in equipment or emissions
A0000748	QEPM Gathering	Mesa 3-21 PAD (Dehy)			1.3	2.3	1.3	2.3	0	0	0	0	no change in equipment or emissions
A0000749	QEPM Gathering	Stewart Point 14-20 PAD (Dehy)			4.1	1.8	4.1	1.8	0	0	0	0	no change in equipment or emissions
A0000750	QEPM Gathering	Stewart Point 5-20 PAD (Dehy)			3.6	2.5	3.6	2.5	0	0	0	0	no change in equipment or emissions
A0000751	QEPM Gathering	Mesa 9-16 PAD (Dehy)			1.8	2.7	1.8	2.7	0	0	0	0	no change in equipment or emissions
A0000752	QEPM Gathering	Mesa 15-6 PAD (Dehy)			2.1	0.6	2.1	0.6	0	0	0	0	no change in equipment or emissions
A0000753	QEPM Gathering	Mesa 10-16 PAD (Dehy)			2	1.6	2	1.6	0	0	0	0	no change in equipment or emissions
A0001198	QEPM Gathering	Pinedale Complex			136.5	138.5	137	139.5	-0.5	-1	-0.5	-1	
								SUM	-18	-103.1	-5.9	-103.1	