DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

Permit Application Analysis
AP-14806, A0000683 & A0000684

August 31, 2015

NAME OF FIRM:	Wexpro Company
FACILITY NAMES:	Dry Piney Central Facility Dry Piney 20 Dry Piney 18
FACILITY LOCATIONS:	**Dry Piney Central Facility:** NW¼ of Section 12, T27N, R114W Sublette County, Wyoming **Dry Piney 20:** NW¼SE¼ of Section 4, T27N, R114W Sublette County, Wyoming **Dry Piney 18:** NW¼SW¼ of Section 10, T27N, R114W Sublette County, Wyoming
TYPE OF OPERATION:	Oil and Natural Gas Production
RESPONSIBLE OFFICIAL:	Tom Bradley, Environmental Coordinator
MAILING ADDRESS:	P.O. Box 45360 Salt Lake City, UT 84145
TELEPHONE NUMBER:	(801) 324-3062
REVIEWING ENGINEERS:	Alicia Boltz, Air Quality Engineer Heather Bleile, Air Quality Engineer

1. PURPOSE OF APPLICATION

On April 23, 2013 and March 16, 2015, the Division of Air Quality received applications from Wexpro Company to modify operations at the Dry Piney Central Facility, Dry Piney 20 and Dry Piney 18.

Wexpro Company requests to modify the Dry Piney Central Facility to document equipment changes, such as reductions in burner sizes and removal of a methanol storage tank. The Dry Piney Central Facility is located in the NW1/4 of Section 12, T27N, R114W, approximately six (6) miles northwest of Calpet, in Sublette County, Wyoming.

Wexpro Company requests to modify the Dry Piney 20 with the replacement of one (1) existing 254 hp Caterpillar G398SITA genset engine with one (1) 425 hp (site rated) Caterpillar G3412TA natural gas genset engine and limiting the operating hours to 7,100 hours per year for the Caterpillar G3412TA engine. Wexpro Company also requests to include the existing thermoelectric generator and fugitive sources with this permitting action. The Dry Piney 20 is located in the NW1/4SE1/4 of Section 4, T27N, R114W, approximately thirteen (13) miles northwest of LaBarge, in Sublette County, Wyoming.

Wexpro Company requests to modify the Dry Piney 18 by modifying the hp rating as 295 hp (site rated), installing a new NSCR, and limiting the operating hours to 7,000 hours per year for the existing Waukehsa F2895GU engine. Wexpro Company also requests to include the existing thermoelectric generator and fugitive sources with this permitting action. The Dry Piney 18 is located in the NW1/4SW1/4 of Section 10, T27N, R114W, approximately thirteen (13) miles northwest of LaBarge, in Sublette County, Wyoming.

Updated information was received from Wexpro Company on June 10, 2015, on July 7, 2015, and on August 7, 2015.

2. PROCESS DESCRIPTION

Dry Piney Central Facility:
This facility receives production from two (2) wells, the Dry Piney Unit 18 and Dry Piney Unit 20.

Dry Piney 20:
The commingled fluid stream (containing natural gas, condensate and produced water) is pumped from the well by use of an electric submersible pump. The comingled stream flows from the well location to a separate central facility for separation and processing.

The electric submersible pump (ESP) will be powered by the use of one (1) 425 hp natural gas engine-driven genset. The engine will be controlled by use of a non-selective catalytic reduction (NSCR) catalyst and air-fuel ratio controller (AFRC).

An electric chemical pump exists on site to pump methanol into the well to prevent freezing. There are fugitive emissions at this location due to potential leaks from valves and connections on the production equipment. A thermoelectric generator is located at the wellhead for cathodic protection.

Dry Piney 18:
The commingled fluid stream (containing natural gas, condensate and produced water) is pumped from the well by use of an electric submersible pump. The comingled stream flows from the well location to a separate central facility for separation and processing.

The electric submersible pump will be powered by the use of one (1) 295 hp natural gas engine-driven genset. The engine will be controlled by use of a non-selective catalytic reduction (NSCR) catalyst and air-fuel ratio controller (AFRC).

An electric chemical pump exists on site to pump methanol into the well to prevent freezing. There are fugitive emissions at this location due to potential leaks from valves and connections on the production equipment. A thermoelectric generator is located at the wellhead for cathodic protection.

3. PERMIT HISTORY

Dry Piney Central Facility:
On December 17, 2010, Air Quality Permit MD-10941 was issued to modify the Dry Piney Central Facility. A smokeless combustion device was required to control volatile organic compound (VOC) and hazardous air pollutant (HAP) emissions associated with the heater treater overhead gas used as a gas blanket in the 3,000 bbl produced water tank. This permit superseded Air Quality Permit CT-4822.

On March 10, 2008, Air Quality Waiver wv-7420 was issued for the installation of one (1) 254 hp White Superior 8G-825 spare genset. This engine is no longer operational and has been removed.

On August 14, 2007, Air Quality Permit CT-4822 was issued to modify the Dry Piney Central Facility with the redesign/reconstruction of the facility with a smokeless combustion device to control VOC and HAP emissions associated with the treater overheads gas that is used as a gas blanket in the 3,000 bbl water tank.

Dry Piney 20:
On July 20, 2010, Air Quality Permit CT-3336A was issued to revise the Preventative Maintenance Plan for the 254 hp Caterpillar G398SITA generator engine. This permit superseded Air Quality Permit CT-3336.

On June 24, 2004, Air Quality Permit CT-3336 was issued to permit one (1) 254 hp Caterpillar G398SITA genset engine.

Dry Piney 18:
On July 20, 2010, Air Quality Permit CT-3335A was issued to revise the Preventative Maintenance Plan for the 254 hp Waukesha F2895GU generator engine. This permit superseded Air Quality Permit CT-3335.

On June 24, 2003, Air Quality Permit CT-3335 was issued to permit one (1) 254 hp Waukesha F2895GU genset engine.

4. ESTIMATED EMISSIONS

Dry Piney Central Facility:
Air Quality Permit MD-10941 listed three (3) 6’ x 20’ heater treaters with 1.8 MMBtu/hr heaters (one spare treater), five (5) 0.5 MMBtu/hr tank heaters and one (1) 0.25 MMBtu/hr tank heater. However, Wexpro Company has installed: one (1) 1.8 MMBtu/hr heater treater, two (2) 0.375 MMBtu/hr heater treaters, five (5) 0.5 MMBtu/hr tank heaters, and one (1) 0.25 MMBtu/hr tank heater. NO_x and CO emissions for the natural gas fired heaters are based on AP-42 emission factors for fuel boilers and heaters, 4,380 annual operating hours for the tank heaters and 2,920 annual operating hours for the heater treater heaters. Total estimated emissions for the one (1) 1.8 MMBtu/hr heater treater, two (2) 0.375 MMBtu/hr heater treaters, five (5) 0.5 MMBtu/hr tank heaters, and one (1) 0.25 MMBtu/hr tank heater are 1.1 tpy NO_x, 0.9 tpy CO, <0.1 tpy VOC, <0.01 tpy of HAPs, and 0.08 tpy of PM.

Dry Piney Central Facility Equipment List

- one (1) heater treater w/ 1.8 MMBtu/hr heater
- two (2) heater treaters w/ 0.375 MMBtu/hr heaters
- five (5) 0.5 MMBtu/hr tank heaters
- one (1) 0.25 MMBtu/hr tank heater
- four (4) 400-bbl production tanks
- two (2) 400-bbl produced water drain tanks
- one (1) 3000-bbl bbl produced water tank
- one (1) 750-bbl produced water skim tank
- one (1) 130-bbl glycol tank
- one (1) pneumatic water circulation pump
- two (2) smokeless combustion devices w/ continuous pilot monitoring systems (heater treater gas control)

Estimated emissions from each source at the Dry Piney Central Facility are shown in the following table:

Table 1: Dry Piney Central Facility Emissions (tpy)						
Source	NO_x	CO	VOC	SO_2	PM_{10}	HAPs
Permitted Emissions (MD-10941)						
Production Equipment	3.0	1.7	22.2	--	--	1.5
Total Permitted Emissions	**3.0**	**1.7**	**22.2**	**--**	**--**	**1.5**
Proposed Emissions						
(2) 1.8 MMBtu/hr heaters (remove)	-0.5	-0.4	<0.1	--	--	<0.1
(2) 0.375 MMBtu/hr heaters (added) [1]	0.1	0.1	<0.1	--	--	<0.1
Change in Emissions	**-0.4**	**-0.3**	**0.0**	**--**	**--**	**0.0**
Total Facility Emissions	**2.6**	**1.4**	**22.2**	**--**	**--**	**1.5**

Dry Piney 20:
The Caterpillar G3412TA engine is field gas fired. 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 engine.

Engine emission factors and emissions, and estimated emissions from each source at the Dry Piney 20 facility are shown in the following tables:

Table 2: Engine Emission Factors (g/hp-hr)						
Engine	hp	Controls	NO_x	CO	VOC	Formaldehyde
Caterpillar G3412TA	425	NSCR/AFRC	0.5	1.0	0.3	0.05

Table 3: Dry Piney 20 Engine Emissions								
Engine	NO_x		CO		VOC		Formaldehyde [1]	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Caterpillar G3412TA [2]	0.5	1.7	0.9	3.3	0.3	1.0	0.05	0.17

[1] Formaldehyde is the only significant HAP emitted from the engine.
[2] Ton per year emissions are based on 7,100 hours of operations per year.

Table 4: Dry Piney 20 Emissions (tpy)							
IMPACT ID	Source	NO_x	CO	VOC	SO_2	PM_{10}	HAPs
Permitted Emissions (CT-3336A)							
--	Caterpillar G398SITA	2.5	2.5	1.0	--	--	0.15
Total Permitted Emissions		**2.5**	**2.5**	**1.0**	**--**	**--**	**0.15**
Proposed Emissions							
--	Caterpillar G398SITA (remove)	-2.5	-2.5	-1.0	--	--	-0.15
ENG001	425 hp Caterpillar G3412TA (install) [1]	1.7	3.3	1.0	<0.1	0.10	0.17
EGU001	Thermoelectric Generator	<0.1	<0.1	<0.1	--	--	--
FUG001	Fugitives	--	--	1.3	--	--	0.11
Change in Emissions		**-0.8**	**0.8**	**1.3**	**<0.1**	**0.10**	**0.13**
Total Facility Emissions		**1.7**	**3.3**	**2.3**	**<0.1**	**0.10**	**0.28**

[1] Ton per year emissions are based on 7,100 hours of operations per year.

Dry Piney 18:
The Waukesha F2895GU engine is field gas fired. 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 engine.

Engine emission factors and emissions, and estimated emissions from each source at the Dry Piney 18 facility are shown in the following tables:

Table 5: Engine Emission Factors (g/hp-hr)						
Engine	hp	Controls	NO_x	CO	VOC	Formaldehyde
Permitted (CT-3335A)						
Waukesha F2895GU	254	NSCR/AFRC	1.0	1.0	0.2	0.05
Proposed						
Waukesha F2895GU	295	NSCR/AFRC	0.5	1.0	0.3	0.05

Table 6: Dry Piney 18 Engine Emissions								
Engine	NO_x		CO		VOC		Formaldehyde [1]	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Permitted (CT-3335A)								
Waukesha F2895GU	0.6	2.5	0.6	2.5	0.1	0.5	0.03	0.12
Proposed								
Waukesha F2895GU [2]	0.3	1.1	0.7	2.3	0.2	0.7	0.03	0.11

[1] Formaldehyde is the only significant HAP emitted from the engine.
[2] Ton per year emissions are based on 7,000 hours of operations per year.

Table 7: Dry Piney 18 Emissions (tpy)							
IMPACT ID	Source	NO_x	CO	VOC	SO_2	PM_{10}	HAPs
Permitted Emissions (CT-3335A)							
ENG001	Waukesha F2895GU	2.5	2.5	0.5	--	--	0.12
Total Permitted Emissions		**2.5**	**2.5**	**0.5**	**--**	**--**	**0.12**
Proposed Emissions							
ENG001	Waukesha F2895GU (remove)	-2.5	-2.5	-0.5	--	--	-0.12
ENG001	295 hp Waukesha F2895GU (modify) [1]	1.1	2.3	0.7	<0.1	0.10	0.11
EGU001	Thermoelectric Generator	<0.1	<0.1	<0.1	--	--	--
FUG001	Fugitives	--	--	1.2	--	--	0.11
Change in Emissions		**-1.4**	**-0.2**	**1.4**	**<0.1**	**0.10**	**0.10**
Total Facility Emissions		**1.1**	**2.3**	**1.9**	**<0.1**	**0.10**	**0.22**

[1] Ton per year emissions are based on 7,000 hours of operations per year.

5. BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

In accordance with Chapter 6, Section 2(c), a best available control technology (BACT) analysis is required for NO_x, CO, VOC, and HAPs because the proposed project results in a physical change in, or change in the method of operation of, an affected facility which increases the amount of any air pollutant.

Dry Piney 20:
The Caterpillar G3412TA engine will be controlled to the levels listed in Table 2. This rich burn engine will be equipped with an air/fuel ratio controller (AFRC) and a NSCR catalyst, which not only controls NO_x but also aids in the destruction of formaldehyde and other HAPs. The Division considers a NSCR catalyst with an AFRC as representing BACT for this type of rich burn engine.

With the finalization of 40 CFR part 60, subpart JJJJ, the Division is establishing VOC limits as part of the BACT analysis. Given the engine is equipped with a NSCR catalyst, the Division considers the VOC limits to represent BACT.

Dry Piney 18:
The Waukesha F2895GU engine will be controlled to the levels listed in Table 5. This rich burn engine will be equipped with an air/fuel ratio controller (AFRC) and a NSCR catalyst, which not only controls NO_x but also aids in the destruction of formaldehyde and other HAPs. The Division considers a NSCR catalyst with an AFRC as representing BACT for this type of rich burn engine.

With the finalization of 40 CFR part 60, subpart JJJJ, the Division is establishing VOC limits as part of the BACT analysis. Given the engine is equipped with a NSCR catalyst, the Division considers the VOC limits to represent BACT.

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 "the 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.

Dry Piney Central Facility:
Air Quality Waiver wv-7420 was issued on March 10, 2008, for the installation of one (1) 254 hp White Superior 8G-825 spare genset at the Dry Piney Oil Operations located in the NW¼ of Section 12, T27N, R114W. Wexpro Company believes this source should have been included in the historical baseline emissions estimates for the Dry Piney Central Facility as it was operational within the baseline estimation period. This engine has since been removed and is no longer operational. Wexpro Company seeks to gain NO_x emissions credits for the removal of this engine.

The Division contacted Wexpro Company to verify the startup date of the engine. Wexpro started the engine up on February 28, 2008, and the waiver was issued on March 10, 2008. Since the engine was started up prior to being permitted, Wexpro was not in compliance with the permitting requirements for generator engines. The Division does not grant offset credits for equipment installed out of compliance with permitting requirements. Therefore, no offset credits will be granted for the engine removal.

Air Quality Permit MD-10941 listed three (3) 6' x 20' heater treaters with 1.8 MMBtu/hr heaters (one spare treater), five (5) 0.5 MMBtu/hr tank heaters and one (1) 0.25 MMBtu/hr tank heater. However, Wexpro Company installed: one (1) 1.8 MMBtu/hr heater treater, two (2) 0.375 MMBtu/hr heater treaters, five (5) 0.5 MMBtu/hr tank heaters, and one (1) 0.25 MMBtu/hr tank heater. As a result, Wexpro Company is claiming the emissions credits for these emission reductions.

Dry Piney 20:

Wexpro Company proposes to replace the one (1) existing 254 hp Caterpillar G398SITA genset engine at the Dry Piney 20 with one (1) 425 hp (site rated) Caterpillar G3412TA natural gas genset engine. Wexpro Company calculated baseline emissions using the average of the actual operations and actual emissions from 2006 and 2007.

Table 8: Dry Piney 20 Engine Emission (tpy)		
254 hp Caterpillar G398SITA genset engine	NO_x	VOC
2006 & 2007 Average	**0.7**	**0.9**

Dry Piney 18:
Wexpro Company proposes to modify the hp rating as 295 hp (site rated), install a new NSCR, and limit the operating hours to 7,000 hours per year for the existing Waukehsa F2895GU engine at the Dry Piney 18. As a result, Wexpro Company is claiming emissions credits for this emissions reduction. Wexpro Company calculated baseline emissions using the average of the actual operations and actual emissions from 2006 and 2007.

Table 9: Dry Piney 18 Engine Emission (tpy)		
254 hp Waukehsa F2895GU engine	NO_x	VOC
2006 & 2007 Average	**1.5**	**0.4**

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 Wexpro Company to use as part of their demonstration as Appendix A. Table 10 lists the proposed emission reductions:

Table 10: Proposed Emission Reduction		
Source	NO_x	VOC
	tpy	tpy
Dry Piney Central Facility		
Nine (9) various heaters	1.1	0.0
Baseline Emissions	1.5	0.0
Change in Emissions	**-0.4**	**0.0**
Offset Factor	1.1	1.5
Offset Required	**-0.4**	**0.0**
Dry Piney 20		
425 hp Caterpillar G3412TA engine	1.7	1.0
Baseline Emissions	0.7	0.9
Change in Emissions	**1.0**	**0.1**
Offset Factor	1.1	1.5
Offset Required	**1.1**	**0.2**
Dry Piney 18		
295 hp Waukehsa F2895GU engine	1.1	0.7
Baseline Emissions	1.5	0.4
Change in Emissions	**-0.4**	**0.3**
Offset Factor	1.1	1.5
Offset Required	**-0.4**	**0.5**
TOTAL		
Total Offset Required (14806, A0000683 & A0000684)	**0.3**	**0.7**
Banked Offsets	-0.3	-20.4
Total	**0.0**	**-19.7**

As shown, permitting actions to date, including this application, have resulted in a decrease in VOC emissions of 19.7 tpy and a decrease in NO_x emissions of 0.0 tpy for future applications. Therefore, Wexpro Company has met the offset requirements for NO_x and VOC. Based on the Demonstration of Wexpro Company, 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

The facility is not a "major source" as defined by Chapter 6, Section 3 of the Wyoming Air Quality Standards and Regulations (WAQSR). Therefore, Wexpro Company shall obtain an operating permit in accordance with Chapter 6, Section 2 of the WAQSR for each facility.

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

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 Dry Piney 20 and Dry Piney 18 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 - *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.*

9. CHAPTER 6, SECTION 13 – NON-ATTAINMENT PERMIT REQUIREMENTS

The Dry Piney Central Facility, Dry Piney 20 and Dry Piney 18 are located in an area that has been designated as non-attainment for ozone. Since the facilities are a minor source (less than 100 tpy of NO_x and VOC based on a "Marginal" classification for the area) this permitting action is not subject to the non-attainment permitting requirements of Chapter 6, Section 13 of the WAQSR.

10. PREVENTION OF SIGNIFICANT DETERIORATION (PSD)

The Dry Piney Central Facility, Dry Piney 20 and Dry Piney 18 are not a "major stationary source" as defined by Chapter 6, Section 4 of the WAQSR. Therefore, the Dry Piney Central Facility, Dry Piney 20 and Dry Piney 18 are not subject to PSD review under Chapter 6, Section 4.

11. NEW SOURCE PERFORMANCE STANDARDS (NSPS)

The engines at the Dry Piney 20 and Dry Piney 18 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 engine.

40 CFR part 60, subpart OOOO - *Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution* applies to any new, modified or reconstructed emission source installed after August 23, 2011 at facilities. The affected emission sources include centrifugal and reciprocating compressors, continuous bleed pneumatic controllers, and storage vessels. The affected emission sources at the Dry Piney Central Facility, Dry Piney 20 and Dry Piney 18 are subject to all applicable requirements of 40 CFR part 60, subpart OOOO based on the installation/modification date.

12. PROPOSED PERMIT CONDITIONS

The Division proposes to issue Air Quality Permits to Wexpro Company for the Dry Piney Central Facility, Dry Piney 20 and Dry Piney 18 with the following conditions:

Conditions applicable to all operations at the Dry Piney Central Facility:

1. 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 installed for the purpose of investigating actual or potential sources of air pollution and for determining compliance or non-compliance with any rule, regulation, standard, permit or order.

2. 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 a condition of this permit.

3. A permit to operate in accordance with Chapter 6, Section 2(a)(iii) of the WAQSR is required after a 120-day start-up period in order to operate this facility.

4. All notifications, reports, and correspondence required by 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. Submissions may also be done electronically through https://airimpact.wyo.gov to satisfy requirements of this permit.

5. All records required under this permit shall be kept for a period of at least five (5) years and shall be made available to the Division upon request.

6. Effective upon permit issuance, this permit shall supersede Air Quality Permit MD-10941 and Air Quality Waiver wv-7420 for the Dry Piney Central Facility.

7. Periodic training on the proper operation of equipment, systems and devices used to contain, control, eliminate or reduce pollution shall be provided to company personnel whose primary job is to regularly ensure that facility production equipment is functional. The training shall provide these personnel with the ability to recognize, correct and report all instances of malfunctioning equipment, systems and devices associated with air pollution control. These equipment, systems and devices include, but are not limited to combustion units, reboiler overheads condensers, hydrocarbons liquids storage tanks, drip tanks, vent lines, connectors, fittings, valves, relief valves, hatches and any other appurtenance employed to, or involved with, eliminating, reducing, containing or collecting vapors and transporting them to a pollution control system or device.

8. Trained personnel shall perform, at a minimum, a quarterly site evaluation of the operation of the air pollution control equipment, systems and devices under condition seven (7). The first quarterly site evaluation shall be conducted within the second quarter after issuance of this permit.

9. At least one of the quarterly evaluations per calendar year under Condition 8 shall include an evaluation of the facility for leaks from the equipment, systems and devices under Condition 7 using an optical gas imaging instrument. Monitoring utilizing the no detectable emissions test methods and procedures in 40 CFR §60.5416(b)(1) through (8) may be utilized to satisfy the requirements of this condition for the equipment, systems, and devices under Condition 7 in lieu of using an optical gas imaging instrument.

10. An annual preventative maintenance program shall be instituted to inspect and replace equipment, systems and devices under Condition 7 as necessary to ensure their proper operation.

11. Results of all inspections, evaluations and periodic monitoring shall be documented and maintained for review by the Division upon request. Digital files of any optical gas imaging instrument evaluations need not be maintained.

12. All overheads gas from the heater treaters shall be routed to the 3000-bbl water tank and the 750-bbl produced water skim tank and then to the combustion devices. The combustion devices shall reduce the mass content of VOCs in the overhead gas routed to it by at least ninety-eight percent (98%) by weight.

13. The presence of the combustion device(s) pilot flames shall be monitored using thermocouples and continuous recording devices or any other equivalent devices to detect and record the presence of the flames. Records shall be maintained noting periods during active well site operation when any of the pilot flames are not present. The records shall contain a description of the reason(s) for absence of the pilot flames and steps taken to return the pilot flames to proper operation.

14. The combustion devices 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.

15. Emission control equipment, including the VOC and HAP emission control system or device, all vent lines, connections, fittings, valves, relief valves, hatches or any other appurtenance employed to contain and collect vapors and transport them to the emission control system or device, shall be maintained and operated during any time the well is producing such that the emissions are controlled at all times. Records shall be maintained noting dates and durations of times during such operation when any VOC or HAP emissions control system or device or the associated containment and collection equipment is not functioning to control emissions as required by this permit.

Conditions applicable to all operations at the Dry Piney 20:

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 a permit to operate, in accordance with Chapter 6, Section 2(a)(iii) of the WAQSR, is required after a 120 day start-up period in order to operate this facility.

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. Submissions may also be done electronically through https://airimpact.wyo.gov to satisfy requirements of this permit.

5. That written notification of the actual date of initial start-up for the Caterpillar G3412TA engine is required fifteen (15) days after start-up in accordance with Chapter 6, Section 2(i)(ii) of the WAQSR. Such notification shall be submitted on a complete Engine Installation/Removal form.

The form can be downloaded from the Air Quality website http://deq.wyoming.gov/aqd or obtained from the Air Quality Division.

6. 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.

7. 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.

8. That performance tests be conducted, in accordance with Chapter 6, Section 2(j) of the WAQSR, within thirty (30) days of achieving a maximum design rate but not later than ninety (90) days following initial start-up, and a written report of the results be submitted. The operator shall provide fifteen (15) days prior notice of the test date. If a maximum design rate is not achieved within ninety (90) days of start-up, the Administrator may require testing be done at the rate achieved and again when a maximum rate is achieved.

9. Initial performance tests, as required by Condition 8 of this permit, shall be conducted on the following source:

   i. Caterpillar G3412TA engine:

      NO_x, CO, and VOC Emissions: Testing shall follow 40 CFR part 60, subpart JJJJ §60.4244, except that §60.8 only applies to an engine subject to 40 CFR part 60, subpart JJJJ. For the initial performance test, testing shall not consist of Method 19 or ASTM Methods.

   A test protocol shall be submitted for review and approval prior to testing. Engine horsepower, inlet temperature to the catalyst, pressure drop across the catalyst and other operating conditions shall be recorded during each test run and submitted with the test report. Results shall be submitted to this Division within forty-five (45) days of completion.

10. That emissions from the Caterpillar G3412TA engine shall be limited to the values in the following table:

Engine	NO_x			CO			VOC		
	g/hp-hr	lb/hr	tpy	g/hp-hr	lb/hr	tpy	g/hp-hr	lb/hr	tpy
Caterpillar G3412TA	0.5	0.5	1.7	1.0	0.9	3.3	0.3	0.3	1.0

11. Upon completion of the modification authorized by this permit, the engine configuration for the Dry Piney 20 shall be limited to one (1) engine consisting of the following:

    ENG001: Caterpillar G3412TA equipped with an AFRC and a NSCR catalyst.

12. That Wexpro Company shall follow the testing requirements as follows for the Caterpillar G3412TA:

    i. That every twelve (12) calendar months, the Caterpillar G3412TA shall be tested to verify compliance with the NO_x, CO, and VOC limits set forth in this permit. Periodic tests 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. 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 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.

13. That Wexpro Company shall follow the monitoring and maintenance requirements as follows for the Caterpillar G3412TA engine equipped with a NSCR 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.

            NSCR Catalyst: 750 °F to 1250 °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.

14. 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 13.

15. The Caterpillar G3412TA shall be limited to 7,100 hours of annual operation. Wexpro Company shall install and maintain a non-resettable hour meter to demonstrate compliance with the hours limit in this condition. Documentation of the hours of operation shall be maintained for a period of at least five (5) years and made available to the Division upon request.

16. That Wexpro Company shall comply with all applicable requirements of 40 CFR part 60, subpart JJJJ.

17. That Wexpro Company shall comply with all applicable requirements of 40 CFR part 63, subpart ZZZZ.

18. That Wexpro Company shall comply with all applicable requirements of 40 CFR part 60, subpart OOOO.

19. Effective upon start-up of the Caterpillar G3412TA engine, this permit shall supersede Air Quality Permit CT-3336A for the Dry Piney 20.

Conditions applicable to all operations at the Dry Piney 18:

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 a permit to operate, in accordance with Chapter 6, Section 2(a)(iii) of the WAQSR, is required after a 120 day start-up period in order to operate this facility.

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. Submissions may also be done electronically through https://airimpact.wyo.gov to satisfy requirements of this permit.

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.

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 performance tests be conducted, in accordance with Chapter 6, Section 2(j) of the WAQSR, within thirty (30) days of achieving a maximum design rate but not later than ninety (90) days following initial start-up after installation of the NSCR and AFRC, and a written report of the results be submitted. The operator shall provide fifteen (15) days prior notice of the test date. If a maximum design rate is not achieved within ninety (90) days of start-up, the Administrator may require testing be done at the rate achieved and again when a maximum rate is achieved.

8. Initial performance tests, as required by Condition 7 of this permit, shall be conducted on the following source within ninety (90) days of permit issuance:

   ii. Waukehsa F2895GU engine:

   <u>NO_x, CO, and VOC Emissions</u>: Testing shall follow 40 CFR part 60, subpart JJJJ §60.4244, except that §60.8 only applies to an engine subject to 40 CFR part 60, subpart JJJJ.

   A test protocol shall be submitted for review and approval prior to testing. Engine horsepower, inlet temperature to the catalyst, pressure drop across the catalyst and other operating conditions shall be recorded during each test run and submitted with the test report. Results shall be submitted to this Division within forty-five (45) days of completion.

9. That emissions from the Waukehsa F2895GU engine shall be limited to the values in the following table:

Engine	**NO_x**			**CO**			**VOC**		
	g/hp-hr	**lb/hr**	**tpy**	**g/hp-hr**	**lb/hr**	**tpy**	**g/hp-hr**	**lb/hr**	**tpy**
Waukehsa F2895GU engine	0.5	0.3	1.1	1.0	0.7	2.3	0.3	0.2	0.7

10. Upon completion of the modification authorized by this permit, the engine configuration for the Dry Piney 18 shall be limited to one (1) engine consisting of the following:

    ENG001: Waukehsa F2895GU engine equipped with an AFRC and a NSCR catalyst.

11. That Wexpro Company shall follow the testing requirements as follows for the Waukehsa F2895GU:

    i. That every twelve (12) calendar months, the Waukehsa F2895GU engine shall be tested to verify compliance with the NO_x, CO, and VOC limits set forth in this permit. Periodic tests 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. 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 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.

12. That Wexpro Company shall follow the monitoring and maintenance requirements as follows for the Waukehsa F2895GU engine equipped with a NSCR 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.

NSCR Catalyst: 750 °F to 1250 °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.

iii. 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.

13. 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 12.

14. The Waukehsa F2895GU engine shall be limited to 7,000 hours of annual operation. Wexpro Company shall install and maintain a non-resettable hour meter to demonstrate compliance with the hours limit in this condition. Documentation of the hours of operation shall be maintained for a period of at least five (5) years and made available to the Division upon request.

15. That Wexpro Company shall comply with all applicable requirements of 40 CFR part 60, subpart JJJJ.

16. That Wexpro Company shall comply with all applicable requirements of 40 CFR part 63, subpart ZZZZ.

17. That Wexpro Company shall comply with all applicable requirements of 40 CFR part 60, subpart OOOO.

18. Effective upon installation of the new NSCR, this permit shall supersede Air Quality Permit CT-3335A for the Dry Piney 18.

Appendix A

Offset Spreadsheet

Wexpro Company - Offset Spreadsheet

AppNum	Company	Facility	PermitNumber	PermitDate	CurrentVOC	CurrentNOx	BaseVOC	BaseNOx	DeltaVOC	DeltaNOx	OffsetVOC	OffsetNOx	DemoComments	AppStatus	OffsetCompany
9228	Wexpro Company	Dry Piney Unit Well 20	wv-9228	4/13/2010	1.1	0.7	0	0	1.1	0.7	1.7	0.8	Engine replacement - Increase HP	Waiver Issued	Wexpro
10853	Wexpro Company	Dry Piney Unit 20	wv-10853	7/16/2010	0.6	1.5	1.7	2.2	-1.1	-0.7	-1.7	-0.8	Note: engine authorized with wv-9228 will not be installed. Rescinded waiver in letter dated 7/16/10. This engine was offset in wv-9228 and Wexpro is being credited these emissions.	Waiver Issued	Wexpro
11168	Wexpro Company	Johnson Ridge 12	wv-11168	11/1/2010	3.8	0.3	3.8	0.3	0	0	0	0	no change in emissions	Waiver Issued	Wexpro
11169	Wexpro Company	Johnson Ridge S89-17	wv-11169	11/1/2010	9.1	1	9.1	1	0	0	0	0	no change in emissions	Waiver Issued	Wexpro
11170	Wexpro Company	Johnson Ridge S90-17	wv-11170	11/1/2010	6.5	1	6.5	1	0	0	0	0	no change in emissions	Waiver Issued	Wexpro
11171	Wexpro Company	Dry Piney Unit 29	wv-11171	11/2/2010	0.7	0.4	0.7	0.4	0	0	0	0	no change in emissions	Waiver Issued	Wexpro
11172	Wexpro Company	Dry Piney Unit 32	wv-11172	11/2/2010	4	0.7	4	0.7	0	0	0	0	no change in emissions	Waiver Issued	Wexpro
10941	Wexpro Company	Dry Piney Central Facility	MD-10941	12/17/2010	22.2	3	21.2	3.3	1	-0.3	1.5	-0.3		Permit Issued	Wexpro
11396	Wexpro Company	Dry Piney 35	wv-11396	1/11/2011	14.9	0.8	30.4	0.8	-15.5	0	-15.5	0	replace Kimray 4015 pump with crippled 2015 pump	Waiver Issued	Wexpro
9145	QEP Energy Company	Mesa 10-16 Pad	MD-9866	4/19/2011									offset information is under AP-9866 tracking log	Permit Issued	Wexpro
12501	Wexpro Company	Dry Piney Unit 17	wv-12501	11/21/2011	0	0	0	0	0	0	0	0	facility in operation since 1999, no offsets required	Waiver Issued	Wexpro
12504	Wexpro Company	Dry Piney Unit 26	wv-12504	11/21/2011	0	0	0	0	0	0	0	0	facility in operation since 1999, no offsets required	Waiver Issued	Wexpro
12513	Wexpro Company	Dry Piney Unit 6	wv-12513	11/23/2011	0	0	0	0	0	0	0	0	grandfathered facility, offsets not required	Waiver Issued	Wexpro
12514	Wexpro Company	Johnson Ridge 7	wv-12514	11/23/2011	0	0	0	0	0	0	0	0	existing source, no offsets required	Waiver Issued	Wexpro
12515	Wexpro Company	Johnson Ridge 6	wv-12515	11/23/2011	0	0	0	0	0	0	0	0	existing source, no offsets required	Waiver Issued	Wexpro
12516	Wexpro Company	Johnson Ridge 4	wv-12516	11/23/2011	0	0	0	0	0	0	0	0	grandfathered facility, offsets not required	Waiver Issued	Wexpro
12517	Wexpro Company	Johnson Ridge 2	wv-12517	11/23/2011	0	0	0	0	0	0	0	0	grandfathered facility, no offsets required	Waiver Issued	Wexpro
9183	Wexpro Company	Johnson Ridge 7	wv-12514	11/23/2011									offsets evaluated under AP-12514	Waiver Issued	Wexpro
12507	Wexpro Company	Dry Piney Unit 22 BR	wv-12507	11/28/2011	0	0	0	0	0	0	0	0	grandfathered facility, offsets not required	Waiver Issued	Wexpro
12508	Wexpro Company	Dry Piney Unit 1	wv-12508	11/28/2011	0	0	0	0	0	0	0	0	grandfathered facility, offsets not required	Waiver Issued	Wexpro
12509	Wexpro Company	Dry Piney Unit 9	wv-12509	11/28/2011	0	0	0	0	0	0	0	0	grandfathered facility, offsets not required	Waiver Issued	Wexpro
12510	Wexpro Company	Dry Piney Unit 11	wv-12510	11/28/2011	0	0	0	0	0	0	0	0	grandfathered facility, offsets not required	Waiver Issued	Wexpro
12511	Wexpro Company	Dry Piney Unit 10	wv-12511	11/29/2011	0	0	0	0	0	0	0	0	grandfathered facility, offsets not required	Waiver Issued	Wexpro
12512	Wexpro Company	Dry Piney Unit 14	wv-12512	11/29/2011	0	0	0	0	0	0	0	0	grandfathered facility, offsets not required	Waiver Issued	Wexpro
12495	Wexpro Company	Dry Piney Unit 3	wv-12495	1/11/2012	2.7	0	9.1	0	-6.4	0	-6.4	0	removed dehydration unit from service	Waiver Issued	Wexpro
12500	Wexpro Company	Dry Piney Unit 13	wv-12500	1/11/2012	0	0	0	0	0	0	0	0	grandfathered facility, offsets not required	Waiver Issued	Wexpro
12505	Wexpro Company	Dry Piney Unit 23 BR	wv-12505	1/11/2012	0	0	0	0	0	0	0	0	grandfathered facility, offsets not required	Waiver Issued	Wexpro
12506	Wexpro Company	Dry Piney Unit 8	wv-12506	1/11/2012	0	0	0	0	0	0	0	0	grandfathered facility, no offsets required	Waiver Issued	Wexpro
15200	Wexpro Company	Dry Piney Area - Multiple Wells	multiple	8/12/2013									This waiver is for equipment that was existing prior to the baseline period; therefore, offsets are not required.	Waiver Issued	Wexpro
14806	Wexpro Company	Dry Piney Central Facility			0	1.1	0	1.5	0	-0.4	0	-0.4	claiming the emissions credits for emissions reduction due to smaller heaters being installed.	Active Application	Wexpro
A0000683	Wexpro Company	Dry Piney 20			1	1.7	0.9	0.7	0.1	1	0.2	1.1	replace the one (1) existing 254 hp Caterpillar G398SITA genset engine with one (1) 425 hp (site rated) Caterpillar G3412TA natural gas genset engine.	Active Application	Wexpro
A0000684	Wexpro Company	Dry Piney 18			0.7	1.1	0.4	1.5	0.3	-0.4	0.5	-0.4	modify the hp rating as 295 hp, install a new NSCR, and limit the operating hours to 8,424 hours per year for the existing Waukehsa F2895GU engine.	Active Application	Wexpro
								SUM	-20.5	-0.1	-19.7	0			