June 12, 2015

NorthWestern Energy
Cobb Storage Field, Station 017
40 East Broadway
Butte, MT 59701

Dear Mr. Whelchel:

The Department of Environmental Quality (Department) has made its decision on the Montana Air Quality Permit application for NorthWestern Energy. The application was given permit number 2783-10. The Department's decision may be appealed to the Board of Environmental Quality (Board). This project is considered an Energy Development Project and as such the appeal period is 30 days (15 days beyond the date the permit goes final). A request for hearing must be filed by July 13, 2015. This permit shall become final on June 27, 2015, unless the Board orders a stay on the permit.

Procedures for Appeal: Any person jointly or severally adversely affected by the final action may request a hearing before the Board. Any appeal must be filed before the final date stated above. The request for a hearing shall contain an affidavit setting forth the grounds for the request. Any hearing will be held under the provisions of the Montana Administrative Procedures Act. Submit requests for a hearing in triplicate to: Chairman, Board of Environmental Review, P.O. Box 200901, Helena, Montana 59620.

Conditions: See attached

For the Department,

Julie A. Merkel
Permitting Services Section Supervisor
Air Quality Bureau
(406) 444-3626

Craig Henrikson, P.E.
Environmental Engineer
Air Quality Bureau
(406) 444-6711

JM:CH
Enclosure

Montana Air Quality Permit

Issued To: NorthWestern Energy Cobb Storage Field, Station 017 40 East Broadway Butte, MT 59701	Permit #2783-10 Application Complete: April 9, 2015 Preliminary Decision: May 11, 2015 Department's Decision: June 12, 2015 Permit Final: AFS#: 035-0009

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to NorthWestern Energy (NorthWestern) pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8. 740, *et seq*., as amended, for the following:

Section I: Permitted Facilities

A. Plant Location

NorthWestern owns and operates a natural gas compressor station and associated equipment located in the North west ¼ of the Northwest ¼ of Section 15, Township 35 North, Range 5 West in Glacier County, Montana. The facility is known as the Cobb Storage Field, Station 017 (or Station W). A complete list of the permitted equipment can be found in Section I.A of the Permit Analysis.

B. Current Permit Action

On April 9, 2015, the Department of Environmental Quality (Department) received a request from NorthWestern to add two Caterpillar 1340 horsepower (hp) lean burn engines, the addition of a natural gas line heater up to 4 MMBtu/hr and implementation of a combined oxides of nitrogen (NO_x) annual emission limit for the existing six engines plus the two new lean burn engines. The annual NO_x limit would apply to the 1,100 hp White Superior Engine, the two 1,400 hp Solar Saturn Turbines, the three 1,450 hp Solar Saturn Turbines and the two new 1,340 hp lean burn engines. Implementing an annual NO_x limit for these engines will keep the permit below 100 tons per year (TPY) and below Title V permitting thresholds.

The current permit action incorporates the requested changes as well as updates the permit format and language to reflect current Department practices.

Section II: Conditions and Limitations

A. Emission Limitations

1. Emissions from each of the three 1,400-hp Solar Saturn turbines shall not exceed the following (ARM 17.8.752):

Oxides of Nitrogen (NO_x)[1]	9.26 pounds per hour (lb/hr)
Carbon Monoxide (CO)	9.26 lb/hr
Volatile Organic Compounds (VOC)	0.86 lb/hr

[1] NO_x reported as NO_2.

2. Emissions from each of the two 1,450-hp Solar Saturn turbines shall not exceed the following (ARM 17.8.752):

NO_x[1] 9.26 lb/hr
CO 9.26 lb/hr
VOC 0.86 lb/hr

3. Emissions from the 1,100-hp White Superior compressor engine shall not exceed the following (ARM 17.8.749):

NO_x[1] 36.46 lb/hr
CO 7.28 lb/hr
VOC 1.21 lb/hr

4. Emissions from two 1,340-hp lean burn engines shall be controlled with an oxidation catalyst and an air-to-fuel (AFR) controller capable of maintaining the required emission limits in Sections II.A.5 and II.A.6 through all load and speed changes at which the engine may be operated (ARM 17.8.752).

5. The following gram per brake horsepower-hour (g/bhp-hr) emissions limit for the two 1,340-hp lean burn engines shall be met at all operating load conditions. (ARM 17.8.752):

<u>Emission Factors (lean-burn engine)</u>
NO_x 2.0 g/bhp-hr
CO 0.04 g/bhp-hr
VOC 0.12 g/bhp-hr

6. The pound per hour (lb/hr) emission limits for the two 1,340-hp lean burn engines shall be determined using the following equation and pollutant specific g/bhp-hr emission factors from Sections II.A.5 (ARM 17.8.749):

<u>Equation</u>

Emission Limit (lb/hr) = Emission Factor (g/bhp-hr) * maximum rated design capacity of engine (bhp) * 0.002205 lb/g

NO_x[1] 5.91 lb/hr
CO 0.12 lb/hr
VOC 0.35 lb/hr

7. The total annual NO_x emissions from the 1,100 hp White Superior Engine, the two 1,400 hp Solar Saturn Turbines, the three 1,450 hp Solar Saturn Turbines, and the two 1,340-hp lean burn engines shall not exceed 95 TPY based on a rolling 12-calendar-month total (ARM 17.8.749 and ARM 17.8.1204).

8. NorthWestern shall operate and maintain the condenser on the Glycol Dehydrator unit to minimize VOC and Hazardous Air Pollutant (HAP) emissions. (ARM 17.8.749).

9. NorthWestern shall only compress and combust pipeline quality natural gas (ARM 17.8.749).

10. NorthWestern shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed on or before November 23, 1968, that exhibit an opacity of 40% or greater averaged over 6 consecutive minutes (ARM 17.8.304).

11. NorthWestern shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).

12. NorthWestern shall not cause or authorize emissions to be discharged into the atmosphere from haul roads, access roads, parking lots, or the general plant property without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).

13. NorthWestern shall treat all unpaved portions of the access roads, parking lots, and general plant area with water and/or chemical dust suppressant, as necessary, to maintain compliance with the reasonable precautions limitation in Section II.A.14 (ARM 17.8.749).

14. NorthWestern shall comply with any applicable standards, limitations, reporting, recordkeeping, and notification requirements contained in Title 40, Code of Federal Regulations 40 CFR 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (ARM 17.8.342 and 40 CFR 63, Subpart ZZZZ).

B. Testing Requirements

1. Each proposed new 1,340-hp lean-burn engine shall be initially tested for nitrogen oxides (NO_x) and carbon monoxide (CO), concurrently, and then every 4 years thereafter (or according to another testing/monitoring schedule as may be approved by the Department), to demonstrate compliance with emissions limits in Section II.A.5 and II.A.6. The initial source test shall be conducted within 180 days of the initial startup date of each unit (ARM 17.8.105 and ARM 17.8.749).

2. The existing 1,100 hp White Superior Engine, the two 1,400 hp Solar Saturn Turbines, and the three 1,450 hp Solar Saturn Turbines shall be initially tested for nitrogen oxides (NOx) and carbon monoxide (CO), concurrently, to demonstrate compliance with emissions limits in Section II.A.1, II.A.2 and II.A.3, and then every 4 years thereafter (or according to another testing/monitoring schedule as may be approved by the Department). If Northwestern has tested any of these six engines within the two years prior to issuance of MAQP #2783-10, those test results may be substituted for the initial test. Otherwise, Northwestern shall test these engines within two years of permit issuance of MAQP #2783-10.

3. All compliance source tests shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

4. The Department may require testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. NorthWestern shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis. For reporting purposes, the sources shall be identified using the source numbers contained in Section I.A of the Permit Analysis.

   Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. NorthWestern shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

3. All records compiled in accordance with this permit must be maintained by NorthWestern as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

4. NorthWestern shall document, by month, the total hours of operation of the five Solar Saturn turbines (three 1,400-hp and two 1,450-hp). By the 25th day of each month, NorthWestern shall total the total hours of operation of the five Solar Saturn turbines (three 1,400-hp and two 1,450-hp) for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.7. Emissions shall be totaled by multiplying the run hours by the average NO_x emission rate achieved during the most recent emissions compliance test. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

5. NorthWestern shall document, by month, the hours of operation of the 1,100-hp White Superior engine. By the 25th day of each month, NorthWestern shall total the hours of operation of the 1,100-hp White Superior engine for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.7. Emissions shall be totaled by multiplying the run hours by the average NO_x emission rate achieved during the most recent emissions compliance test. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

6. NorthWestern shall document, by month, the hours of operation of each new 1,340-hp lean burn engine. By the 25th day of each month, NorthWestern shall total the hours of operation of each 1,340-hp lean burn engine for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.7. Emissions shall be totaled by multiplying the run hours by the average NO_x emission rate achieved during the most recent emissions compliance test. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

7. NorthWestern shall annually certify that its emissions are less than those that would require the source to obtain an air quality operating permit as required by ARM 17.8.1204(3)(b). The annual certification shall comply with the certification requirements of ARM 17.8.1207. The annual certification shall be submitted along with the annual emissions inventory information (ARM 17.8.749 and ARM 17.8.1204).

D. Notification

Northwestern shall provide the Department with written notification of the actual start-up date of each new 1,340-hp lean burn engine within 15 days after the actual start-up date. The notification shall include the engine model and maximum rated design capacity (ARM 17.8.749).

Section III: General Conditions

A. Inspection – NorthWestern shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if NorthWestern fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving NorthWestern of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).

D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties, or other enforcement action as specified in Section 75-2-401, *et seq*., MCA.

E. Appeals – Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.

F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the Department at the location of the source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by NorthWestern may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Duration of Permit – Construction or installation must begin or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

Montana Air Quality Permit (MAQP) Analysis
NorthWestern Energy
MAQP #2783-10

I. Introduction/Process Description

A. Permitted Equipment

NorthWestern Energy (NorthWestern) owns and operates a natural gas compressor station and associated equipment located in the Northwest ¼ of the Northwest ¼ of Section 15, Township 35 North, Range 5 West in Glacier County, Montana. The facility is known as the Cobb Storage Field, Station 017 (or Station W). The facility includes, but is not limited to, the following equipment:

Source #	Title V I.D. #	NorthWestern Internal I.D.	Year Installed	Make	Model	Size
03	EU03	Engine #03	1965	Solar	Saturn	1,400-hp
04	EU04	Engine #04	1969	Solar	Saturn	1,400-hp
05	EU05	Engine #05	1979	White Superior	8GTL/MW62	1,100-hp
06	EU06	Engine #06	1994	Solar	Saturn	1,400-hp
07	EU07	Engine #07	2000	Solar	Saturn	1,450-hp
08	EU08	Engine #08	2000	Solar	Saturn	1,450-hp
09	IEU01	Standby Reboiler	----------	BS & B	----------	0.5 MMBtu/hr
10	IEU02	Boiler	----------	Teledyne-Laars	----------	0.85 MMBtu/hr
11	IEU03	Reboiler	1994	Enertek	3486	0.6 MMBtu/hr
12	IEU04	Building Heaters	----------	----------	----------	< 1 MMBtu/hr
13	IEU05	Process Valves	----------	----------	----------	----------
14	IEU06	In Plant Traffic	----------	----------	----------	----------
15	IEU07	Emergency Generator	2001	Onan Cummins	100GGHD	158-hp
16	IEU08	Methanol Tank	----------	----------	----------	1,000-gallon
17	EU09	Dehydrator Tanks (2)	----------	----------	----------	1,000/500 gallon
18	EU10	Dehydrator Vent	----------	----------	----------	----------
19	EU11	Engine 1	Proposed	Caterpillar		1,340 hp
20	EU12	Engine 2	Proposed	Caterpillar		1,340 hp
21	IEU09	Line Heater	Proposed			4 MMBtu/hr

- Horsepower – hp
- Million British thermal unit per hour – MMBtu/hr

B. Source Description

The complex has two primary purposes. The first is to pump the field gas up to the required pressure in the natural gas transmission system. Compression of the gas is accomplished using the compressor engines and the turbines described above. Three engine heaters provide heat to the various station facilities.

The second purpose of the complex is to "dry" the gas as it is being processed. The gas contains some moisture, which must be removed from the system prior to being sent into the transmission system. This is accomplished with a dehydrator, also commonly called a reboiler or glycol unit.

Pipeline quality natural gas is injected into the Cobb Storage Field during low use periods, primarily the summer. The gas is retrieved from storage during high use periods, primarily the winter. During storage, the gas takes in some moisture and other material from the geologic formation. When the gas is retrieved, moisture and impurities are removed and the gas is brought up to pipeline pressure before being pumped into the main line for market.

In preparation for storage, natural gas is piped from NorthWestern's Main Line #1 Station to the Cobb Storage Field Station where it is sent through a "scrubber." In the scrubber, water and other liquid constituents (e.g. heavy ends, butane, C5+) drop out of the gas stream. The scrubbed gas is then injected into the formation for storage.

When consumer demand is great enough, natural gas is retrieved from storage. From the formation, the gas is routed through a scrubber to remove water and other liquid constituents that have been taken up during storage. The gas is then compressed to a pressure ranging from 550 to 650 pounds per square inch (psi) using natural gas fired engine or turbine driven compressors. The Cobb Storage Field Station uses both reciprocating internal combustion engines (RICE) and combustion turbines (CT) for compression activities.

After the gas has been compressed, it is dehydrated by a triethylene glycol (TEG) dehydrator. In the dehydrator, wet gas flows through two contactor towers where it bubbles through a "lean" TEG solution that absorbs moisture. The wet or "rich" TEG flows from the towers to either a 0.5-million British thermal unit per hour (MMBtu/hr) reboiler or a 0.6-MMBtu/hr reboiler. Typically, the 0.5-MMBtu/hr reboiler is used as a backup to the 0.6-MMBtu/hr reboiler. Whichever reboiler is in use, the TEG is heated to approximately 300 to 350 degrees Fahrenheit (°F), driving off the water and making the glycol "lean" again.

Each reboiler is associated with a condenser/storage tank that receives vapors from the reboiler, or still vent. As these vapors leave the reboiler, they condense in the piping and tank and produce a mixture of water and natural gas liquids. This process mitigates potential atmospheric emissions.

C. Permit History

On July 21, 1993, the Department of Environmental Quality (Department) issued **Permit #2783-00** to Montana Power Company (MPC) for the operation of their compressor station and associated equipment located in the Northwest ¼ of the Northwest ¼ of Section 15, Township 35 North, Range 5 West in Glacier County, near Cut Bank, Montana. The station was identified as the Cobb Storage Field, Station 017-1 through 6.

On February 9, 1994, the Department issued **Permit #2783-01** to MPC. This modification revised the emission limitations from a gram per brake horsepower-hour (g/Bhp-hr) limit to a pound per hour (lb/hr) limit. In addition, to clarify nitrogen oxides (NO_x) mass emission calculations, NO_x emission limitations were identified as nitrogen dioxide (NO_2). Furthermore, a 90-day testing extension was granted to MPC. Permit #2783-01 replaced Permit #2783-00.

On September 16, 1994, the Department issued **Permit #2783-02** to MPC. This permit action increased the capacity on two of the Solar Saturn turbines (units #3 and #4) from 1,100-Horsepower (hp) to 1,400-hp and added a third 1,400-hp Solar Saturn turbine (unit #6). In addition, the 1,100-hp White Superior carbon monoxide (CO) mass emission rates were increased to 7.28 lb/hr. The increase was necessary because the previous CO limits were based on manufacturer data under specific, ideal conditions that are not consistently present at the Cobb Storage Field. The Cobb Storage Field operations were also limited to 6,132 hours per year (hr/yr) in order to limit the facility's potential emissions below the Prevention of Significant Deterioration (PSD) thresholds. Also, the Rite Leating 0.76-MMBtu/hr boiler was replaced with a Teledyne-Laars 0.85-MMBtu/hr boiler. Permit #2783-02 replaced Permit #2783-01.

On July 24, 1997, the Department issued **Permit #2783-03** to MPC. This permit action included 40 CFR 60, Subpart GG as a condition of the permit because it was determined to be applicable to the facility. The modification contained exemptions from the monitoring requirements of 40 CFR 60, Subpart GG based on the requirement of MPC to compress and combust only pipeline quality natural gas at the Cobb Storage station. The modification also updated the rule references in the permit. Permit #2783-03 replaced Permit #2783-02.

On August 28, 1997, the Department issued **Permit #2783-04** to MPC. MPC requested that the permit be modified to correctly identify the two 240-hp Ingersoll Rand engines as 300-hp Ingersoll Rand engines. The original application and permit had identified the engines as 240-hp engines. MPC discovered the mistake and requested that the permit be modified to reflect the correct engine size. Permit #2783-04 replaced Permit #2783-03.

On July 23, 2000, the Department issued **Permit #2783-05** to MPC. MPC had requested an alteration to Permit #2783-04 that included the installation of two new 1,400-hp Solar Saturn turbine compressors. MPC requested a limitation on all of the compressors at the site to stay below the threshold that would require a PSD permit. Separate limitations were assigned to each of the three different types of compressors. Also, the Department reviewed the applicability of 40 CFR 60, Subpart GG and determined that Subpart GG is not applicable to this facility. As a result of the determination, the limitation of 150 part per million (ppm) on the 1,400-hp compressors and the monitoring requirements were removed from the permit. Permit #2783-05 replaced Permit #2783-04.

On November 23, 2002, the Department issued **Permit #2783-06** to NorthWestern. The Department received a letter on October 18, 2002, dated October 15, 2002, from NorthWestern informing the Department that the name change from MPC to NorthWestern was complete. NorthWestern requested that the Department modify the permit to reflect the name change. In addition, NorthWestern requested that the Department modify the permit analysis to be consistent with the equipment, equipment size, and equipment descriptions for the operating permit. In addition, NorthWestern requested that the Department modify the permit to correctly identify the two Solar Saturn turbines that were permitted in July 2000, as 1,450-hp. Permit Application #2783-05 and Permit #2783-05 incorrectly identified the two Solar Saturn turbines as 1,400-hp. Permit #2783-06 incorporated NorthWestern's requests into the permit. Permit #2783-06 replaced Permit #2783-05.

On October 30, 2003, the Department received an administrative amendment request from NorthWestern for Permit #2783-06. NorthWestern requested that the every 4-year testing requirements for each of the two 1,450-hp Solar Saturn turbines and each of the three 1,400-hp Solar Saturn turbines be removed from the permit because NorthWestern's Title V Operating Permit #OP2783-02, as issued as final on September 16, 2003, requires at least annual testing on each of the five turbines.

On December 23, 2003, the Department issued **Permit #2783-07** to NorthWestern. On October 30, 2003, the Department received an administrative amendment request from NorthWestern to remove the every 4-year testing requirements for each of the five turbines from the MAQP because Operating Permit #OP2783-02 required at least annual testing on each of the five turbines. In addition, the permit format, language, and rule references were updated to reflect the Department's current permit format, language, and rule references. Permit #2783-07 replaced Permit #2783-06.

On April 17, 2008, the Department issued **Permit #2783-08**. On February 7, 2008, the Department received a request from NorthWestern to change the name on Permit #2783-07 from NorthWestern Corporation to NorthWestern. The permit action incorporated the requested name change as well as updated the permit format and language to reflect the Department's current permit format and language. Permit #2783-08 replaced Permit #2783-07.

On November 12, 2013, the Department received a request from NorthWestern to remove emitting units, reduce hours of operation limits and include an enforceable permit condition to require a condenser as control equipment on the glycol dehydrator. These changes reduced the potential to emit (PTE) for the facility to below Title V levels and allowed NorthWestern to request that Operating Permit #OP2783-05 be revoked. This permit action incorporated the requested changes as well as updated the permit format and language to reflect the Department's current permit format and language. **MAQP #2783-09** replaced MAQP #2783-08.

D. Current Permit Action

On April 9, 2015, the Department received a request from NorthWestern to add two Caterpillar 1340-hp lean burn engines, the addition of a natural gas line heater up to 4 MMBtu/hr and implementation of a combined NO_x annual emission limit (95 tons per year) for the existing six engines plus the two new lean burn engines. The annual NO_x limit would apply to the 1,100 hp White Superior Engine, the two 1,400 hp Solar Saturn Turbines, the three 1,450 hp Solar Saturn Turbines and the two new 1,340 hp lean burn engines. Implementing an annual NO_x limit for these engines will keep the permit below 100 tons per year and below Title V permitting thresholds. **MAQP #2783-10** replaces MAQP #2783-09.

E. Response to Public Comments

NorthWestern requests revisions to the BACT emission rates in order to accurately represent the technological capabilities of the proposed engines. Catalyst and engine manufacturer emission rates provided to MDEQ in the permit application (Appendix C) provided an outdated and incorrect NO_x emission factor. The correct

emission rate of the engines is 2.0 grams/bhp-hr, as represented in the revised manufacturer specification sheet (Attachment 1). The following specific corrections are requested:

Section II Conditions and Limitations, Condition 5 on page 2 of the permit. Please replace "NO_x 1.5 g/bhp-hr" with "2.0 g/bhp-hr".

Section II Conditions and Limitations, Condition 6 on page 2 of the permit. Please replace "NO_x 4.43 lb/hr" with "NOx 5.91 lb/hr".

Section III BACT Determination, NOx Emissions on page 12 of the MAQP Permit Analysis. Please replace "A BACT limit of 1.5 g/bhp-hr is proposed as BACT" with "A BACT limit of 2.0 g/bhp-hr is proposed as BACT".

The Department has approved and made each of the above changes.

F. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department. Upon request, the Department will provide references for the location of complete copies of all applicable rules or regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including, but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment including instruments and sensing devices, and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source, or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

NorthWestern shall comply with requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant which would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner that a public nuisance is created.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}

NorthWestern must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. (1) This rule requires that no person may cause or authorize emissions to be discharged to an outdoor atmosphere from any source installed on or before November 23, 1968, that exhibit an opacity of 40% or greater averaged over 6 consecutive minutes. (2) This rule requires that no person may cause or authorize emissions to be discharged to an outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. Under this rule, NorthWestern shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. (4) Commencing July 1, 1971, no person shall burn liquid or solid fuels containing sulfur in excess of 1 pound of sulfur per million Btu fired. (5) Commencing July 1, 1971, no person shall burn any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel calculated as hydrogen sulfide at standard conditions. NorthWestern will burn natural gas in the fuel burning equipment, which will meet this limitation.

6. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. The owner and operator of any stationary source or modification, as defined and applied in 40 CFR Part 60, shall comply with the standards and provisions of 40 CFR Part 60. Subpart GG (Standards of Performance for Stationary Gas Turbines) does not apply to the turbines at this facility because the turbines are less than 10.7 GJ/hr. Also, Subpart KKK (Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants) is not applicable to this facility.

7. ARM 17.8.342 ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR Part 63, as applicable, including the following subparts:

   - Subpart HH – National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities.
   - Subpart HHH – National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities
   - Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines.

   Based on the information submitted by NorthWestern, the facility is not subject to the provisions of 40 CFR 63 Subpart HHH because the facility is not a major source of HAPs. NorthWestern is considered an area source of HAPs and therefore subject to 40 CFR 63, Subpart HH. For area sources, the affected source includes each glycol dehydration unit. Because the glycol dehydration unit emits less than 1 ton per year (TPY) of benzene, however, it is exempt from the control requirements listed in 40 CFR 63, Subpart HH. Records of the determinations applicable to this exemption must be maintained as required in 40 CFR 63.774(d)(1).

D. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. NorthWestern submitted the appropriate permit application fee for the current permit action.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department. This operation fee is based on the actual or estimated amount of air pollutants emitted during the previous calendar year.

   An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions which pro-rate the required fee amount.

E. ARM 17.8, Subchapter 7 – Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit alteration to construct, alter or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year of any pollutant. NorthWestern has a PTE greater than 25 tons per year of NO_x, CO, and VOC; therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration or use of a source. NorthWestern submitted

the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. NorthWestern submitted an affidavit of publication of public notice for the April 8, 2015, issue of the *Great Falls Tribune*, a newspaper of general circulation in Great Falls in Cascade County, as proof of compliance with the public notice requirements.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The BACT analysis is discussed in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving NorthWestern of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

F. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications -- Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source since this facility is not a listed source and the facility's PTE is less than 250 tons per year of any pollutant (excluding fugitive emissions).

G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:

a. PTE > 100 tons/year of any pollutant;

b. PTE > 10 tons/year of any one HAP, PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule;

c. PTE > 70 tons/year of PM_{10} in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #2783-10 for NorthWestern, the following conclusions were made:

   a. The facility's PTE is less than 100 tons/year for NO_x and CO.

   b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons per year of all HAPs.

   c. This source is not located in a serious PM_{10} nonattainment area.

   d. This facility is not subject to any current NSPS.

   e. This facility is subject to a current NESHAP standards (considered an area source subject to 40 CFR 63, Subparts HH and ZZZZ).

   f. This source is not a Title IV affected source, nor a solid waste combustion unit.

   g. This source is not an EPA designated Title V source.

   h. As allowed by ARM 17.8.1204(3), the Department may exempt a source from the requirement to obtain an air quality operating permit by establishing federally enforceable limitations which limit that source's potential to emit.

      i. In applying for an exemption under this section, the owner or operator of the source shall certify to the Department that the source's potential to emit, does not require the source to obtain an air quality operating permit.

      ii. Any source that obtains a federally enforceable limit on potential to emit shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit.

   NorthWestern has taken federally enforceable permit limits to keep potential emissions below major source permitting thresholds. Therefore, the facility is not a major source and, thus a Title V operating permit is not required.

   The Department determined that the annual reporting requirements contained in the permit are sufficient to satisfy this requirement

3. ARM 17.8.1207 Certification of Truth, Accuracy, and Completeness.

   NorthWestern shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit as required by ARM 17.8.1204 (3)(b). The annual certification shall comply with requirements of ARM 17.8.1207. The annual certification shall be submitted along with the annual emission inventory information.

III. BACT Determination

A BACT determination is required for each new or modified source. NorthWestern shall install on the new or modified source the maximum air pollution control capability which is technically practicable and economically feasible, except that BACT shall be utilized. The proposed lean burn engines for the Cobb site are being moved from an existing compressor station site, so only BACT options specific to lean burn engines are provided.

Compressor Engines

The primary criteria pollutants from natural gas-fired reciprocating engines are NO_x, CO, and VOCs. The formation of nitrogen oxides is exponentially related to combustion temperature in the engine cylinder. The other pollutants, CO and VOC species, are primarily the result of incomplete combustion. Particulate matter (PM) emissions include trace amounts of metals, non-combustible inorganic material, and condensable, semi-volatile organics which result from volatized lubricating oil, engine wear, or from products of incomplete combustion. Sulfur oxides (SO_x) are very low since sulfur compounds are removed from natural gas at processing plants.

NO_x Emissions

Two technologies are available for lean burn engines including learn burn engines with selective catalytic reduction and air-fuel-ratio controllers, and learn burn engines with no control. Learn burn engines are designed to operate with no add-on controls and are able to produce low NO_x emissions. The lean burn engines use a pre-combustion chamber to enclose and ignite a rich mixture of air and fuel. The resulting ignition front fires into the larger main cylinder that contains a much leaner fuel mixture. Staging the combustion in this fashion, results in a lower peak flame temperature. This results in less generation of NO_x but also results in excess oxygen and increased CO levels.

Selective catalytic reduction (SCR) injects either liquid anhydrous ammonia or aqueous ammonium hydroxide into the exhaust gas stream prior to the gas stream reaching the catalyst. NO_x is converted to nitrogen gas within the catalyst which is typically made from noble metals, base metal oxides such as vanadium and titanium, and zeolite-based material. The reaction is dependent upon the proper injection rate and on the temperature of the exhaust stream. Unreacted ammonia will pass through the catalyst and under certain conditions can create visual plumes that form due to salt formation. Compressor station engines are required to operate over a wide range of operating conditions, and control of injection rates can be difficult to optimize NO_x reduction without excess ammonia passing through the catalyst. Therefore, SCR was eliminated due to the difficulties in properly controlling ammonia injection. This leaves lean burn engine with no controls as the remaining feasible control option for NO_x and the recommended BACT alternative. A BACT limit of 2.0 g/bhp-hr is proposed as BACT. The proposed NO_x BACT conforms to previous BACT determinations made by the Department for lean burn, natural gas-fired compressor engines.

CO Emissions

CO emissions from lean burn engines are controlled with either lean burn engines without controls or lean burn engines with catalytic oxidation and air-fuel-ratio controllers. As discussed in the NO_x BACT analysis, lean burn engines while good at minimizing NO_x

emissions result in high CO emissions. Catalytic oxidation is a post combustion technology that has been applied to oxidize CO emissions from lean burn engines. In a catalytic oxidation system, CO passes over a catalyst and the CO is oxidized to CO_2. Oxidation efficiencies up to 90 percent can be achieved and is compatible with lean burn technology as there is available oxygen to support oxidation of CO to CO_2. Stabilizing the control of the engine using an air-to-fuel controller allows suitable control in combination with the oxidation catalyst. For the new lean burn engines, catalytic oxidation and an air-fuel-ratio controller is recommended as BACT for CO. A BACT limit of 0.04 g/bhp-hr is proposed as BACT. The proposed CO BACT conforms to previous BACT determinations made by the Department for lean burn, natural gas-fired compressor engines.

VOC Emissions

Minimizing VOC emissions is well suited with lean burn engines which use natural gas and good combustion practices to prevent excessive residual VOCs. For the new learn burn engines, the oxidation catalyst also selected to control CO will provide effective VOC control with a proposed limit of 0.12 g-bhp-hr. The proposed VOC BACT conforms to previous BACT determinations made by the Department for lean burn, natural gas-fired compressor engines.

PM_{10} and SO_2 BACT

All PM emitted is considered to be particulate matter with an aerodynamic diameter of 1 micron or less (AP-42 Table 3.2-3). The Department is not aware of any BACT determinations that have required controls for $PM_{10}/PM_{2.5}$, or SO_2 emissions from natural gas fired compressor engines. NorthWestern proposed no additional controls, and burning pipeline quality natural gas as BACT for $PM_{10}/PM_{2.5}$ and SO_2 emissions from the proposed compressor engines. Due to the relatively small amount of $PM_{10}/PM_{2.5}$, and SO_2 emissions from the proposed engines, and the cost of adding additional control, any add-on controls would be cost prohibitive. Therefore, the Department determined no additional controls and burning pipeline quality natural gas would constitute BACT for $PM_{10}/PM_{2.5}$ and SO_2 emissions for the proposed compressor engines. The proposed $PM_{10}/PM_{2.5}$ and SO_2 BACT conforms to previous BACT determinations made by the Department for lean burn, natural gas-fired compressor engines.

Proper Operation

Proper engine operation is achieved when the equipment is maintained per the manufacturer's recommended maintenance practices. Routine maintenance prevents catastrophic failures and limits the likelihood of equipment failures and emissions exceedances. BACT for these lean-burn engines includes following a maintenance schedule for the proposed engine and keeping records of completed maintenance.

Natural Gas-Fired Line Heater

The proposed natural gas line heater has a maximum heat input rating of 4.0 MMBtu/hr with a maximum single unit criteria pollutant emission rate of 0.34 lb/hr of CO and 0.40 lb/hr of NO_x. Based on the small size of the heater, limited operating hours and the minimal emissions generated, no add-on control technology would be economically feasible. Emissions of all criteria pollutants will be minimized through the combustion of natural gas and by following good combustion practices for these units.

The combustion of pipeline quality natural gas and following good combustion practices is proposed as BACT for the natural gas line heater associated with this project. The proposed BACT confirms to previous BACT determinations made by the Department for similar sized natural gas heaters.

IV. Emission Inventory

Emissions Tons/Year						
Emission Unit #	**Emission Unit Description**	**PM_{10}**	**NO_x**	**CO**	**VOC**	**SO_2**
03	1,400-hp Solar Saturn Turbine	0.29	*	11.11	1.03	0.05
04	1,400-hp Solar Saturn Turbine	0.29	*	11.11	1.03	0.05
05	1,100-hp White Superior Engine	0.12	*	7.28	1.21	0.01
06	1,400-hp Solar Saturn Turbine	0.29	*	11.11	1.03	0.05
07	1,450-hp Solar Saturn Turbine	0.29	*	11.11	1.03	0.05
08	1,450-hp Solar Saturn Turbine	0.29	*	11.11	1.03	0.05
09	BS & B Reboiler	0.00	0.01	0.01	0.00	0.00
10	Teledyne-Laars Boiler	0.03	0.37	0.31	0.02	0.00
11	Enertek Reboiler	0.02	0.26	0.22	0.01	0.00
12	Building Heaters	0.03	0.44	0.37	0.02	0.00
13	Process Valves (Fugitive)	0.00	0.00	0.00	1.97	0.00
14	In Plant Vehicle Traffic	1.23	0.00	0.00	0.00	0.00
15	Onan Cummins Emergency Generator	0.00	0.60	1.73	0.08	0.00
16	1,000-gallon Methanol Tank	0.00	0.00	0.00	0.00	0.00
17	1,000/500-gallon Dehydrator Tanks (2)	0.00	0.00	0.00	19.60	0.00
18	Dehydrator Still Vent	0.00	0.00	0.00	9.19	0.00
19	1,340-hp Lean Burn Engine	0.49	*	0.50	1.51	0.03
20	1,340-hp Lean Burn Engine	0.49	*	0.50	1.51	0.03
21	4 MMBtu/hr Line Heater	0.06	0.8	0.67	0.04	0
Totals		3.9	97.5	67.2	40.3	0.33

- A complete emission inventory is on file with the Department.
- *The eight engines have been limited to a 95 ton per year 12-month rolling NOx limit combined.

V. Existing Air Quality

The existing air quality of the area is expected to be in compliance with all state and federal requirements. Previously, NorthWestern (as MPC) conducted ambient air quality modeling for all compressor stations in and near Glacier, Toole, Liberty, and Pondera Counties using two EPA guideline models (ISC2 and COMPLEX). The meteorological data used was taken from the Great Falls Airport National Weather Service station. The modeling submitted assumed approximately 255.1 tons per year of NO_x and 255.1 tons per year of CO. This modeling did not show violations of the annual or hourly ambient standards. The modeling analysis demonstrated that this facility would not cause or contribute to a violation or exceedance of any state or federal ambient standard. In addition, because the current NO_x and CO emissions are below the NO_x and CO emissions assumed for the modeling, the Department expects this facility to continue to operate in compliance with all applicable ambient air quality standards.

VI. Ambient Air Impact Analysis

The Department determined that there will be no negative impacts from this permitting action because the limits established in this permit are protective of air quality. Therefore, the Department believes this action will not cause or contribute to a violation of any ambient air quality standard.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted the following private property taking and damaging assessment.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

Based on this analysis, the Department determined there are no taking or damaging implications associated with this permit action.

VIII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

Analysis Prepared By: Craig Henrikson
Date: April 17, 2015

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air Resources Management Bureau
P.O. Box 200901, Helena, MT 59620
(406) 444-3490

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To*:* Northwestern Energy
40 East Broadway
Butte, MT 59701

Montana Air Quality Permit Number: 2783-10

Preliminary Determination Issued: 05/11/15
Department Decision Issued: 6/12/15
Permit Final:

1. *Legal Description of Site*: Northwestern Energy (Northwestern) submitted an application to modify their existing Montana Air Quality Permit (MAQP) located at NW1/4NE1/4 Section 15, Township 35 North, Range 5 West in Glacier County, Montana. The compressor station is located approximately 13 miles north of Cut Bank along Hay Lake Road.

2. *Description of Project*: The permit application is for two new Caterpillar 1340 horsepower (hp) lean burn engines, the addition of a natural gas line heater up to 4 MMBtu/hr and implementation of a combined NO_x annual emission limit for the existing six engines plus the two new lean burn engines

3. *Objectives of Project*: The object of the project would be to add compressor engines which would operate in parallel with the existing engines while taking an emission limit to prevent exceeding the Title V threshold where a Title V Air Quality Permit would be required.

4. *Alternatives Considered*: In addition to the proposed action, the Department of Environmental Quality (Department) considered the "no- action" alternative. The "no-action" alternative would deny issuance of the MAQP to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because conditions in the permit should establish and demonstrate compliance. Therefore, the "no-action" alternative was eliminated from further consideration.

5. *A Listing of Mitigation, Stipulations, and Other Controls*: A listing of the enforceable permit conditions and a permit analysis, including a Best Available Control Technology (BACT) analysis, is included in this permit action.

6. *Regulatory Effects on Private Property*: The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined the permit conditions would be reasonably necessary to ensure compliance with applicable requirements and to demonstrate compliance with those requirements and would not unduly restrict private property rights.

7. *The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The "no action alternative" was discussed previously.*

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Terrestrial and Aquatic Life and Habitats			X			Yes
B	Water Quality, Quantity, and Distribution			X			Yes
C	Geology and Soil Quality, Stability and Moisture			X			Yes
D	Vegetation Cover, Quantity, and Quality			X			Yes
E	Aesthetics			X			Yes
F	Air Quality			X			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources				X		Yes
H	Demands on Environmental Resource of Water, Air and Energy			X			Yes
I	Historical and Archaeological Sites			X			Yes
J	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The following comments have been prepared by the Department.

A. Terrestrial and Aquatic Life and Habitats

The operation of the new lean burn engines, natural gas line heater and combined annual NO_x limit would have minor impacts upon the terrestrial and aquatic life and habitats in areas where the facility may operate. Although air pollutant deposition would occur in the areas where the equipment would operate, the size and nature of the operation, dispersion characteristics of pollutants, and conditions placed in MAQP #2783-10 would result in minor impacts as the site is an existing compressor station. Therefore, the operation of the equipment would present minor impacts on terrestrial and aquatic life is present in the area of operation.

B. Water Quality, Quantity, and Distribution

Although there would be a potential increase in air emissions in the area where the new lean burn engines and natural gas line heater would operate, there would only be minor impacts on water quality, quantity, and distribution because of the nature, size, operational requirements, and conditions placed in MAQP #2783-10 for the facility. Further, as described in Section 7.F. of this EA, the Department determined that any impacts from deposition of pollutants would be minor. In addition, any accidental spills or leaks from equipment would be required to be handled according to the appropriate environmental regulations in an effort to minimize any potential adverse impact on the immediate and surrounding area. Overall, the operation of the equipment would have minor impacts to water quality, quantity, and distribution in the area of operations.

C. Geology and Soil Quality, Stability, and Moisture

As a result of the operation of the lean burn engines and natural gas line heater, there would be minor impacts to the geology and soil quality, stability, and moisture near the equipment's operational area because of the ground disturbance and deposition of pollutants from the facility. As explained in Section 7.F. of this EA, the facility's size, operational requirements, nature of the current operation, and conditions placed in MAQP #2783-10 would minimize the impacts from deposition.

D. Vegetation Cover, Quantity, and Quality

The operation of the lean burn engines and natural gas line heater would result in minor impacts to the vegetative cover, quantity, and quality, because the proposed operation would result in some ground disturbance. As explained in Section 7.F. of this EA, the Department determined that, due to the nature of the operation, conditions placed in MAQP #2783-10, and dispersion characteristics of the emissions, any impacts from deposition would not be expected. In addition, because the water usage would be limited to use in particulate control (as described in Section 7.B. of this EA) and presence at the existing site (as described in Section 7.C. of this EA), corresponding vegetative impacts from water and soil disturbance would be minor.

E. Aesthetics

The facility would be visible and may create additional noise at the site. MAQP #2783-10 would include conditions to control emissions (including visible emissions) from the equipment and the surrounding work area. The proposed project site is at an existing industrial site and therefore, any aesthetic impact would be minor.

F. Air Quality

Air quality impacts from the operation of the lean burn engines and natural gas line heater would be minor because emissions from the facility would be relatively small when controls are applied to the equipment. Dispersion and deposition of pollutants would occur from the operation of the lean burn engines and natural gas line heater; however, the Department determined that any air quality impacts from the pollutants would be minor due to dispersion characteristics (from factors such as wind speed and wind direction) and conditions placed in MAQP #2783-10.

MAQP #2783-10 would include conditions limiting opacity from the lean burn engines and natural gas line heater and would require that reasonable precautions be taken to control emissions from haul roads, access roads, parking lots, or the general work area. In addition, the permit would also limit total emissions from the facility and any additional equipment operated at the same site to 250 tons per year or less. Further, because the facility has less than 100 tons per year of potential emissions for any pollutant generated, the Department determined that the facility is a minor source of emissions as defined under Title V.

G. Unique Endangered, Fragile, or Limited Environmental Resources

Issuance of this permit may result in a minor increase in emissions to the atmosphere from the facility. However, as explained in Section 7.F. of this EA, because of the nature of the modification, and conditions placed in MAQP #2783-10, any impacts to unique endangered, fragile, or limited environmental resources from the deposition of pollutants would not be expected given the location of the proposed changes at the existing industrial site.

H. Demands on Environmental Resource of Water, Air, and Energy

Water would be used on particulate emissions at equipment transfer points, haul roads, access roads, parking lots, or the general plant property, as necessary, to control dust at the facility. The equipment would consume energy from fuel, a non-renewable resource. However, the compressor station is part of a natural gas transmission system and any impacts on the demands of the environmental resources of water, air, and energy would be minor.

I. Historical and Archaeological Sites

Given the site is an existing industrial facility, impacts to historical or archaeological sites are unlikely but possible. There will be a small amount of ground disturbance associated with the proposed changes. Therefore, it is unlikely that the project would affect any historic or archaeological site and due to the small area of ground disturbance, the impact would be minor.

J. Cumulative and Secondary Impacts

The operation of the lean burn engines and natural gas line heater would cause minor effects to the physical and biological environment because the facility may have minor emission increases. However, any new operations would have to apply for and receive the appropriate permits in addition to this air quality permit prior to operation. The permits would address the environmental impacts associated with the operations at the proposed site.

The facility operation would be limited by MAQP #2783-10 to total emissions of 250 tons/year or less from non-fugitive facility operations and any other additional equipment used at any given site.

8. *The following table summarizes the potential economic and social effects of the proposed project on the human environment. The "no action" alternative was discussed previously.*

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Social Structures and Mores				X		Yes
B	Cultural Uniqueness and Diversity				X		Yes
C	Local and State Tax Base and Tax Revenue			X			Yes
D	Agricultural or Industrial Production				X		Yes
E	Human Health			X			Yes
F	Access to and Quality of Recreational and Wilderness Activities				X		Yes
G	Quantity and Distribution of Employment				X		Yes
H	Distribution of Population				X		Yes
I	Demands for Government Services			X			Yes
J	Industrial and Commercial Activity				X		Yes
K	Locally Adopted Environmental Plans and Goals					X	Yes
L	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores

The operation of the new lean burn engines and natural gas line heater would not likely alter or disrupt any local lifestyles or communities (social structures and mores) in the area of operation because of the nature of the facility operation and use at an existing site.

B. Cultural Uniqueness and Diversity

The operation of the new lean burn engines and natural gas line heater would have no impact on the cultural uniqueness and diversity because the equipment operations would be at an existing site.

C. Local and State Tax Base and Tax Revenue

The proposed operation of the new lean burn engines and natural gas line heater would have minor impact on local and state tax base and tax revenue as the operation is very small in size. Some new temporary jobs may be created during the installation of the new engines.

D. Agricultural or Industrial Production

No impact on agricultural or industrial production would occur as the site is existing.

E. Human Health

MAQP #2783-10 would incorporate conditions to ensure that the modified facility would be operated in compliance with all applicable rules and standards. These rules and standards are designed to be protective of human health. As described in Section 7.F. of this EA, the Department determined that any impacts from deposition of pollutants would be minor due to dispersion characteristics and conditions placed in MAQP #2783-10. The air emissions from this facility would be minimized by opacity limitations on the compressor station and the surrounding area of operation.

F. Access to and Quality of Recreational and Wilderness Activities

This plant will be located at an existing site, and therefore does not impact access to recreational and wilderness activities.

G. Quantity and Distribution of Employment

Given the site currently exists and the relatively minor proposed changes at the facility, it is not expected that the activities from the operations of two new engines and related equipment would significantly affect the quantity and distribution of employment in any given area. No new permanent jobs are expected with the proposed changes.

H. Distribution of Population

Given the minor proposed changes, it is not expected that the activities from the new engines would disrupt the normal population distribution of any given area. No secondary activities are identified to move to the current proposed area as a result of the current project.

I. Demands of Government Services

Government services may be required for acquiring the appropriate permits and ensuring compliance with the permits that are issued; however, the government services required would be minor.

J. Industrial and Commercial Activity

The operation of the two new engines would represent only a minor increase in the industrial activity in any given area. No additional industrial or commercial activities are identified from the operation of the modified facility and secondary activities are not expected from the limited operation facility. Therefore, no industrial and commercial activity resulting from the current permit action is expected.

K. Locally Adopted Environmental Plans and Goals

The Department is unaware of any locally adopted environmental plans or goals at any given site that the facility may be operated at under MAQP #2783-10.

L. Cumulative and Secondary Impacts

Overall, the cumulative and secondary social and economic impacts from this project would be minor because the proposed changes do not constitute any fundamental changes in operation. No new businesses are expected to be drawn to the area as a result of the new engines. In addition, any social and economic impacts that are created would be minor because of the relatively small size and nature of the operation.

Recommendation: No Environmental Impact Statement (EIS) is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: Because the proposed changes would occur at an existing compressor station, potential emission increases are less than a few tons per year and because the facility must use reasonable precautions to control emissions, any impacts created would be minor impacts.

Other groups or agencies contacted or which may have overlapping jurisdiction: *Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program*

Individuals or groups contributing to this EA: *Department of Environmental Quality – Air Quality Bureau.*

EA Prepared by: Craig Henrikson
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