



Montana Department of  
**ENVIRONMENTAL QUALITY**

Brian Schweitzer, Governor

P. O. Box 200901

Helena, MT 59620-0901

(406) 444-2544

Website: [www.deq.mt.gov](http://www.deq.mt.gov)

June 23, 2008

Mr. Bruce McKinley  
NorthWestern Energy  
South Moulton Field Station  
40 East Broadway  
Butte, MT 59701

Dear Mr. McKinley:

Air Quality Permit #2766-03 is deemed final as of June 23, 2008, by the Department of Environmental Quality (Department). This permit is for a natural gas compressor station. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

Vickie Walsh  
Air Permitting Program Supervisor  
Air Resources Management Bureau  
(406) 444-3490

Julie Merkel  
Air Quality Specialist  
Air Resources Management Bureau  
(406) 444-3626

VW:JM  
Enclosure

Montana Department of Environmental Quality  
Permitting and Compliance Division

Air Quality Permit #2766-03

NorthWestern Energy  
South Moulton Field Station  
40 East Broadway  
Butte, MT 59701

July 23, 2008



## Air Quality Permit

Issued To: NorthWestern Energy                      Permit #2766-03  
40 East Broadway                                      Administrative Amendment (AA)  
Butte, MT 59701    Request Received: 02/07/08  
Department Decision on AA: 07/07/08  
Permit Final: 07/23/08  
AFS# 101-0009

An air quality permit, with conditions, is hereby granted to the NorthWestern Energy (NWE) pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and the Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

### Section I: Permitted Facilities

#### A. Plant Location

NWE operates a natural gas compressor station and associated equipment located in the SW<sup>1</sup>/<sub>4</sub>, of the NE<sup>1</sup>/<sub>4</sub>, Section 20, Township 37 North, Range 4 West, in Toole County, Montana. This facility is known as the South Moulton Field, Station 021-1. A list of permitted equipment is contained in Section I.A of the Permit Analysis

#### B. Current Permit Action

On February 7, 2008, the Department of Environmental Quality (Department) received an administrative amendment request from NWE for Permit #2756-04. NWE requested a name change from NorthWestern Corporation (NorthWestern) to NWE.

The current permit action is an administrative amendment pursuant to ARM 17.8.764 and changes the permittee name from NorthWestern to NWE. In addition, rule references were updated to reflect current rule references.

### Section II: Limitations and Conditions

#### A. Operational Requirements:

1. NWE may 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).
2. NWE may 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).
3. NWE 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).
4. NWE 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.3 (ARM 17.8.752).

B. Emission Testing Requirements:

1. The Department may require testing (ARM 17.8.105).
2. All compliance source tests shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

C. Operational Reporting Requirements:

1. NWE 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.

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 for calculating operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. NWE 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 emissions 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).

Section III: General Conditions

- A. Inspection – NWE shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections, 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 all the terms, conditions, and matters stated herein shall be deemed accepted if NWE fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations - Nothing in this subchapter shall be construed as relieving NWE 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 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 Department personnel at the location of the permitted source.
- G. Permit Fees - Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, the continuing validity of this permit is conditional upon the payment by NWE of an annual operation fee, as required by that section and rules adopted thereunder by the Board.

Permit Analysis  
NorthWestern Energy  
Permit #2766-03

I. Introduction/Process Description

NorthWestern Energy (NWE) owns and operates a compressor station and associated equipment, located in the SW<sup>1</sup>/<sub>4</sub>, of the NE<sup>1</sup>/<sub>4</sub>, Section 20, Township 37 North, Range 4 West, in Toole County, Montana.

A. Permitted Equipment

In 1966 a Cooper Bessemer GMX-4 compressor engine was installed at the South Moulton Field, Station 021-1 compressor station and an Ingersoll Rand 6-SVG compressor engine was installed in 1969. In 1993, the Ingersoll Rand 6-SVG compressor engine was disconnected from service and was no longer permitted to operate. The station currently consists of one 250 million British thermal units per hour (MBtu/hr) reboiler, one 12-horsepower (hp) air compressor, and a 220- hp Cooper Bessemer - GMX-4 Compressor Engine.

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 described above.

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.

The gas is treated with a glycol solution, which absorbs the water in the gas stream. The glycol solution is then heated to about 300°F to drive off the water and return the glycol. The heat necessary for this activity is generated by burning natural gas in the dehydrator reboiler. This unit will have a heat input of approximately 250 MBtu/hr. The reboiler is small by industrial standards, having a size approximately equivalent to a typical natural gas-fired small office heating system.

C. Permit History

On June 22, 1993, the Montana Power Company (MPC) was issued **Permit #2766-00** for the operation of their compressor station and associated equipment, located in the SW<sup>1</sup>/<sub>4</sub>, of the NE<sup>1</sup>/<sub>4</sub>, Section 20, Township 37 North, Range 4 West, in Toole County near Cut Bank, Montana. The station was identified as the South Moulton Field, Station 021-1.

A Best Available Control Technology (BACT) determination was not required for the 220-hp Cooper Bessimer GMX-4 compressor engine since it was operating at the same location prior to March 16, 1979.

The BS & B 250 MBtu/hour dehydrator (reboiler) and the Kohler air compressor at the South Moulton Field, Station 021-1&2 were considered minor sources. Based on previous determinations, BACT for these sources was determined to be no control.

On March 15, 1994, MPC was issued **Permit #2766-01**. The modification was requested because the Air Quality Board (AQB) revised the emission limitation units from grams per brake horsepower-hour (g/bhp-hr) to pound per hour (lb/hr). The revision was due to varying parameters such as engine revolutions per minute (RPM), operating load (bhp), ambient air temperature, gas temperature, site, elevation, fuel gas quality, air/fuel ratio (AFR), field gas conditions, etc. Rather than limit the engines to a g/bhp-hr limit, an hourly emission limit allowed some needed operational flexibility.

Also, clarified oxides of nitrogen (NO<sub>x</sub>) mass emission calculations, NO<sub>x</sub> emission limitations were identified as nitrogen dioxide (NO<sub>2</sub>).

The Ingersoll Rand 6-SVG compressor engine was also removed from service -- disconnected from a fuel supply or the pipeline.

On March 5, 2002, MPC notified the Montana Department of Environmental Quality (Department) of a pending merger of MPC with and into Montana Power, L.C.C. (MPC LCC). Due to questions regarding the length of time the new company name would be valid, the Department decided to wait on the name change for the permit. On October 18, 2002, the Department received a request to change the permit from MPC LLC to NorthWestern Corporation (NorthWestern). This permit action changed the name on this permit from MPC to NorthWestern. **Permit #2766-02** replaced Permit #2766-01.

D. Current Permit Action

On February 7, 2008, the Department received an administrative amendment request from NWE for Permit #2756-03. NWE requested a name change from NorthWestern to NWE.

The current permit action is an administrative amendment pursuant to the Administrative Rules of Montana (ARM) 17.8.764 and changes the permittee name from NorthWestern to NWE. In addition, rule references were updated to reflect current rule references. **Permit #2756-03** replaces Permit #2756-02.

E. Additional information

Additional information, such as applicable rules and regulations, 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 ARM and are available upon request from the Department. Upon request, the Department will provide references for location of any applicable rules and regulations or copies where appropriate.

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

1. 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. The Department may require testing.

2. 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).

NWE shall comply with all 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.

3. ARM 17.8.110 Malfunctions. 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.
4. ARM 17.8.111 Circumvention. 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. 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 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
2. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
3. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
4. ARM 17.8.213 Ambient Air Quality Standard for Ozone
5. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate
6. ARM 17.8.223 Ambient Air Quality Standard for PM<sub>10</sub>

NWE 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 into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes. (2) This rule requires that no person may cause or authorize emissions to be discharged into the 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. ARM 17.8.308 Particulate Matter, Airborne. Under this rule, NWE 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 17.8.340 Standard of Performance for New Stationary 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. The New Source Performance Standards (NSPS) are not applicable to this facility.



4. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The owner or operator of any affected source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR Part 63.
  - a. 40 CFR 63, Subpart A – General Provisions apply to all equipment or facilities subject to an NESHAP Subpart as listed below:
  - b. 40 CFR 63, Subpart HH National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities. Owners or operators of oil and natural gas production facilities, as defined and applied in 40 CFR Part 63, shall comply with the standards and provisions of 40 CFR Part 63, Subpart HH. Based on information submitted to the Department, which included a complete Hazardous Air Pollutant (HAP) emission inventory, the NWE gas plant is not a National Emission Standards for Hazardous Air Pollutants (NESHAP) affected source because the gas plant does not meet the definition of a major source of HAPs as defined in 40 CFR Part 63, Subpart HH. In addition, the NWE facility does not utilize a dehydration unit, therefore, would not be subject to the area source provisions of 40 CFR 63, Subpart HH.
  - c. 40 CFR 63, Subpart HHH National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities. Owners or operators of natural gas transmission or storage facilities, as defined and applied in 40 CFR Part 63, shall comply with the standards and provisions of 40 CFR Part 63, Subpart HHH. Based on information submitted to the Department, which included a complete HAP emission inventory, the compressor station does not meet the definition of a major source of HAPs as defined in 40 CFR Part 63, Subpart HHH.

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. NWE shall 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. A permit application was not required for the current permit action because the action is considered an administrative 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 actual 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 (TPY) of any pollutant. NWE has the PTE more than 25 TPY of NO<sub>x</sub>; therefore, a 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. NWE was not required to submit a permit application for the current permit action because this permit action is an administrative amendment. (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. NWE was not required to notify the public of the current permit action because this permit action is an administrative amendment.
  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 required BACT analysis is included 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 NWE 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 17.8.762 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.
11. 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 requirements 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).
12. 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.

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 the Federal Clean Air Act (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 potential to emit is below 250 tons per year of any pollutant.

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 stationary source having:
  - a. PTE > 100 tons/year of any pollutant.
  - b. PTE > 10 tons/year of any one HAP, or 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<sub>10</sub> in a serious PM<sub>10</sub> nonattainment area.

2. ARM 17.8.1204, Air Quality Operating Permit Program Applicability. 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 #2766-03 for NWE Energy, the following conclusions were made:

- a. The facility's PTE is less than 100 tons/year for all criteria pollutants.
- b. The facility's PTE is less than 10 tons/year of any one HAP and less than 25 tons/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 NESHAP standards.
- e. This source is not a Title IV affected source or a solid waste combustion unit.
- f. This source is not an EPA designated Title V source.

Based on these facts, the Department determined that NWE Energy is a minor source of emissions as defined under Title V. Therefore, the facility is not required to obtain a Title V Operating permit.

### III. BACT Determination

A BACT determination is required for each new or altered source. NWE Energy shall install on the new or altered source the maximum air pollution control capability, which is technically practicable and economically feasible, except that BACT shall be utilized. A BACT analysis was not required for the current permit action because the permit action is considered administrative and no new or altered sources are being added.

### IV. Emission Inventory

	Tons/Year					
	TSP	PM <sub>10</sub>	SO <sub>x</sub>	NO <sub>x</sub>	VOC	CO
220 Cooper Bessemer GMX-4	0.08	0.08	0.00	42.49	10.62	3.19
BS & B Reboiler	0.01	0.01	0.00	0.11	0.01	0.02
Kohler Air Compressor	0.00	0.00	0.00	1.73	0.06	0.10
<b>Total</b>	<b>0.1</b>	<b>0.1</b>	<b>0.0</b>	<b>44.3</b>	<b>10.7</b>	<b>3.3</b>

#### Altitude Deration

Altitude of engine: 3890 ft  
 Percent Deration: 90% (From manufacturer curve SC-8)  
 Calculation: 0.90 \* 220 hp = 198 hp  
**220 Cooper Bessemer GMX-4**

Brake Horsepower: 220 hp  
 Hours of operation: 8760 hr/yr

#### TSP Emissions

Emission Factor: 10 lb/10<sup>6</sup> {2-02-002-02, AFSSCC page 32}  
Control Efficiency: 0.0%  
Fuel Consumption: 8500 Btu/hp-hr {Maximum Design}  
Calculations: 8500 Btu/hp-hr \* 0.001 ft<sup>3</sup>/btu \* 220 HP \* 8760 hr/yr = 16381200 ft<sup>3</sup>/yr  
16381200 ft<sup>3</sup>/yr \* 10 lb/10<sup>6</sup> ft<sup>3</sup> gas \* 0.0005 ton/lb = 0.08 ton/yr

#### PM-10 Emissions:

Emission Factor: 10 lb/10<sup>6</sup> {2-02-002-02, AFSSCC page 32}  
Control Efficiency: 0.0%  
Fuel Consumption: 8500 Btu/hp-hr {Maximum Design}  
Calculations: 8500 Btu/hp-hr \* 0.001 ft<sup>3</sup>/btu \* 220 HP \* 8760 hr/yr = 16381200 ft<sup>3</sup>/yr  
16381200 ft<sup>3</sup>/yr \* 10 lb/10<sup>6</sup> ft<sup>3</sup> gas \* 0.0005 ton/lb = 0.08 ton/yr

#### NOx Emissions:

Emission factor: 20.00 gram/bhp-hr {Information from company}  
Calculations: 20 g/bhp-hr \* 220 hp \* 0.002205 lb/g = 9.70 lb/hr  
9.70 lb/hr \* 8760 hr/yr / 2000 = 42.49 ton/yr

#### VOC Emissions:

Emission factor: 5.00 gram/bhp-hr {AP-42, Table 3.2-1}  
Calculations: 5 g/bhp-hr \* 220 hp \* 0.002205 lb/g = 2.43 lb/hr  
2.43 lb/hr \* 8760 hr/yr / 2000 = 10.62 ton/yr

#### CO Emissions:

Emission factor: 1.50 gram/bhp-hr {Information from company}  
Calculations: 1.5 g/bhp-hr \* 220 hp \* 0.002205 lb/g = 0.73 lb/hr  
0.73 lb/hr \* 8760 hr/yr / 2000 = 3.19 ton/yr

#### SOx Emissions:

Emission factor: 0.002 gram/hp-hr {AP-42, Table 3.2-1,9/85}  
Calculations: 0.002 g/hp-hr \* 220 hp \* 0.002205 lb/g \* 8760 hr/yr / 2000 = 0.00 ton/yr

### **BS & B Reboiler**

#### TSP Emissions

Emission Factor: 5 lb/10<sup>6</sup> {AP-42, 1.4-1}  
Control Efficiency: 0.0%  
Fuel Consumption: 250.00 MBtu/hr {Information from company}  
Calculations: 250.00 MBtu/hr \* 1000 Btu/MBtu \* 0.001 ft<sup>3</sup>/Btu \* 8760 hr/yr \* 5 lb/10<sup>6</sup> ft<sup>3</sup> \* 0.0005 ton/yr  
= 0.01 ton/yr

#### PM-10 Emissions:

Emission Factor: 5 lb/10<sup>6</sup> {AP-42, 1.4-1}  
Control Efficiency: 0.0%  
Fuel Consumption: 250.00 MBtu/hr {Information from company}  
Calculations: 250.00 MBtu/hr \* 1000 Btu/MBtu \* 0.001 ft<sup>3</sup>/Btu \* 8760 hr/yr \* 5 lb/10<sup>6</sup> ft<sup>3</sup> \* 0.0005 ton/yr  
= 0.01 ton/yr

NOx Emissions:

Emission Factor: 100 lb/10<sup>6</sup>{AP-42, 1.4-1}  
Control Efficiency: 0.0%  
Fuel Consumption: 250.00 MBtu/hr {Information from company}  
Calculations:  $250.00 \text{ MBtu/hr} * 1000 \text{ Btu/MBtu} * .001 \text{ ft}^3/\text{Btu} * 8760 \text{ hr/yr} * 100 \text{ lb}/10^6 \text{ ft}^3 * 0.0005 \text{ ton/yr}$   
= 0.11 ton/yr

VOC Emissions:

Emission Factor: 8 lb/10<sup>6</sup>{AP-42, 1.4-1}  
Control Efficiency: 0.0%  
Fuel Consumption: 250.00 MBtu/hr {Information from company}  
Calculations:  $250.00 \text{ MBtu/hr} * 1000 \text{ Btu/MBtu} * .001 \text{ ft}^3/\text{Btu} * 8760 \text{ hr/yr} * 8 \text{ lb}/10^6 \text{ ft}^3 * 0.0005 \text{ tons/yr}$   
= 0.01 tons/yr

CO Emissions:

Emission Factor: 20 lbs/10<sup>6</sup>{AP-42, 1.4-1}  
Control Efficiency: 0.0%  
Fuel Consumption: 250.00 MBtu/hr (Information from company)  
Calculations:  $250.00 \text{ MBtu/hr} * 1000 \text{ Btu/MBtu} * .001 \text{ ft}^3/\text{Btu} * 8760 \text{ hr/yr} * 20 \text{ lb}/10^6 \text{ ft}^3 * 0.0005 \text{ ton/yr}$   
= 0.02 ton/yr

SOx Emissions:

Emission Factor: 0.6 lb/10<sup>6</sup>{AP-42, 1.4-1}  
Control Efficiency: 0.0%  
Fuel Consumption: 250.00 MBtu/hr {Information from company}  
Calculations:  $250.00 \text{ MBtu/hr} * 1000 \text{ Btu/MBtu} * .001 \text{ ft}^3/\text{Btu} * 8760 \text{ hr/yr} * 0.6 \text{ lb}/10^6 \text{ ft}^3 * 0.0005 \text{ ton/yr}$   
= 0.00 ton/yr

**Kohler Air Compressor**

Brake Horsepower: 12 BHP  
Hours of operation: 8760 hr/yr

TSP Emissions

Emission Factor: 10 lb/10<sup>6</sup> {2-02-002-02, AFSSCC page 32}  
Control Efficiency: 0.0%  
Fuel Consumption: 8500 Btu/hp-hr {Maximum Design}  
 $8500 \text{ Btu/hp-hr} * 0.001 \text{ ft}^3/\text{btu} * 12 \text{ hp} * 8760 \text{ hr/yr} = 893520 \text{ ft}^3/\text{yr}$   
Calculations:  $893520 \text{ ft}^3/\text{yr} * 10 \text{ lbs}/10^6 \text{ ft}^3 \text{ gas} * 0.0005 \text{ ton/lb} = 0.00 \text{ ton/yr}$

PM-10 Emissions:

Emission Factor: 10 lb/10<sup>6</sup> {2-02-002-02, AFSSCC page 32}  
Control Efficiency: 0.0%  
Fuel Consumption: 8500 Btu/hp-hr {Maximum Design}  
 $8500 \text{ Btu/hp-hr} * 0.001 \text{ ft}^3/\text{btu} * 12 \text{ hp} * 8760 \text{ hr/yr} = 893520 \text{ ft}^3/\text{yr}$   
Calculations:  $893520 \text{ ft}^3/\text{yr} * 10 \text{ lb}/10^6 \text{ ft}^3 \text{ gas} * 0.0005 \text{ ton/lb} = 0.00 \text{ ton/yr}$

NOx Emissions:

Emission factor: 15.00 gram/bhp-hr {Information from Company}  
Calculations:  $15 \text{ gram/bhp-hr} * 12 \text{ bhp} * 0.002205 \text{ lb/gram} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} =$   
1.73 ton/yr

VOC Emissions:

Emission factor: 0.52 gram/bhp-hr{Information from Company}

Calculations:  $0.52 \text{ gram/bhp-hr} * 12 \text{ bhp} * 0.002205 \text{ lb/gram} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.06 \text{ ton/yr}$

CO Emissions:

Emission factor: 0.86 gram/bhp-hr{Information from Company}

Calculations:  $0.9 \text{ gram/bhp-hr} * 12.0 \text{ bhp} * 0.002205 \text{ lb/gram} * 8760.0 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.10 \text{ ton/yr}$

SOx Emissions:

Emission factor: 0.002 gram/hp-hr{AP-42, Table 3.2-1}

Calculations:  $0.002 \text{ gram/hp-hr} * 12 \text{ bhp} * 0.002205 \text{ lb/gram} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.00 \text{ ton/yr}$

V. Existing Air Quality and Monitoring Requirements

The existing air quality of the area is expected to be in compliance with all state and federal requirements. NWE previously 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 for South Moulton Field, Station 021-1 & 2 assumed approximately 93.1 tons per year of NO<sub>x</sub> and 93.1 tons per year of carbon monoxide (CO). This modeling did not show violations of the annual or hourly ambient standards. The modeling analysis demonstrated that this facility would not cause a violation or exceedance of any state or federal ambient standard. Air modeling was not required for the current permit action because the change reflects an administrative change. However the potential emissions from this facility will be less than the levels that were originally modeled; therefore, the facility would be expected to remain in compliance with the state or federal ambient standards.

VI. Taking or Damaging Implication Analysis

As required by 2-10-101 through 2-10-105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

VII. Environmental Assessment

This permitting action is considered an administrative action; therefore, an Environmental Assessment is not required.

Permit Analysis Prepared By: Julie Merkel

Date: April 24, 2008