



Montana Department of
ENVIRONMENTAL QUALITY

Brian Schweitzer, Governor

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July 9, 2008

Rick Walsh, Manager
Environmental Permitting
NorthWestern Energy
40 East Broadway Street
Butte, MT 59701

Dear Mr. Walsh:

Air Quality Permit #2773-04 is deemed final as of July 9, 2008, by the Department of Environmental Quality (Department). This permit is for Box Elder Field Station 070. 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

Moriah Peck, P.E.
Environmental Engineer
Air Resources Management Bureau
(406) 444-4267

VW:MAP

Enclosure

Montana Department of Environmental Quality
Permitting and Compliance Division

Air Quality Permit #2773-04

NorthWestern Energy
40 East Broadway Street
Butte, Montana 59701

July 9, 2008



MONTANA AIR QUALITY PERMIT

Issued To: NorthWestern Energy
40 East Broadway Street
Butte, Montana 59701

Permit #: 2773-04
Administrative Amendment (AA) Request
Received: 2/7/08
Department Decision on AA: 6/23/08
Permit Final: 7/9/08
AFS #: 041-0003

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to 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 NE¼ of the NE¼ of Section 23, Township 32 North, Range 17 East, in Hill County near Lohman, Montana. This facility is known as the Box Elder Field Station 070. A complete listing of the permitted equipment can be found in Section I.A of the permit analysis.

B. Current Permit Action

On February 7, 2008, the Montana Department of Environmental Quality (Department) received a request for an administrative amendment from NWE for MAQP #2773-03. 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, the permit has been updated to reflect the current permit language and rule references used by the Department.

Section II: Limitations and Conditions

A. Emission Limitations

1. Emissions from the 360-horsepower (hp) White Superior compressor engine shall not exceed the following (ARM 17.8.749):

Oxides of Nitrogen (NO _x)	11.89 pounds per hour (lb/hr)
Carbon Monoxide (CO)	1.43 lb/hr
Volatile Organic Compounds (VOC)	0.16 lb/hr

2. Emissions from the 230-hp Ajax compressor engine shall not exceed the following (ARM 17.8.749):

NO _x	1.52 lb/hr
CO	1.37 lb/hr
VOC	0.56 lb/hr

3. NWE 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).
4. NWE 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).
5. 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).
6. 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.5 (ARM 17.8.749).
7. NWE shall comply with all applicable standards and limitations, and the reporting, recordkeeping, testing, and notification requirements contained in 40 CFR 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, for any applicable combustion engine (ARM 17.8.342 and 40 CFR 63, Subpart ZZZZ).

B. Testing Requirements

1. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
2. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirement

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 shall include, but is not limited to, all sources of emissions identified 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 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 *the addition of a new emissions unit*, 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. 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 NWE 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).

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 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 NWE fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations - Nothing in this 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.* (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 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, failure to pay the annual operation fee by NWE may be grounds for revocation of this permit, as required by that Section and rules adopted thereunder by the Board.
- H. Construction Commencement - Construction must begin within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked (ARM 17.8.762).

Permit Analysis
NorthWestern Energy
Box Elder Field Station 070
Permit #2773-04

I. Introduction/Process Description

A. Permitted Equipment

NorthWestern Energy (NWE) operates a natural gas compressor station that includes the following equipment:

1. One White Superior 360-horsepower (hp) compressor engine
2. One Ajax 230-hp compressor engine
3. One 250-thousand British thermal units per hour (MBtu/hr) BS & B reboiler
4. One 250-MBtu/hr heater
5. One 110-MBtu/hr heater
6. Two 105-MBtu/hr heaters

B. Source Description

The NWE Box Elder Field Station 070 facility is located in the NE¹/₄ of the NE¹/₄ of Section 23, Township 32 North, Range 17 East in Hill County near Lohman, Montana. The facility 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 natural gas fired compressors described above. The heaters provide heat to the various station facilities.

The second purpose of the facility is to "dry" the gas as it is being processed. The gas contains 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 water that is driven off is released to the atmosphere. 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 Box Elder Field Station (MPC – BE) was issued **Montana Air Quality Permit (MAQP) #2773-00** for the operation of their compressor station and associated equipment, located in the NE¹/₄ of the NE¹/₄ of Section 23, Township 32 North, Range 17 East, in Hill County near Lohman, Montana. The station was identified as the Box Elder Field Station 070-1 & 2. The 360-hp White Superior compressor engine was installed in 1970 and the 230-hp Ajax compressor engine was installed in 1977.

Since both of the compressor engines were an existing source (operating at the same location prior to March 16, 1979), a Best Available Control Technology (BACT) determination was not required for either of the compressor engines.

On March 15, 1994, **MAQP #2773-01** was issued to MPC - BE. The permit revised the emission limitation units from grams per brake horsepower hour (grams/bhp-hr) to pounds per hour (lb/hr). The revision provided for operational flexibility to account for 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. Also, to clarify Oxides of Nitrogen (NO_x) mass emission calculations, NO_x emission limitations were identified as NO₂. In addition, the 230-hp Ajax compressor engine was disconnected from service, mothballed on site, and removed from the permit. MAQP #2773-01 replaced MAQP #2773-00.

On March 21, 2001, **MAQP #2773-02** was issued to MPC – BE. The permit added a 230-hp Ajax compressor engine to the Box Elder Field Station. This engine was originally permitted in 1993 under MAQP #2773-00 and removed per MPC - BE's request in 1994 in MAQP #2773-01. In addition, the permit format and rule references were updated. MAQP #2773-02 replaced MAQP #2773-01.

On February 4, 2002, the Montana Power Company (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). The permit action changed the facility name from MPC to NorthWestern. **MAQP #2773-03** replaced MAQP #2773-02.

D. Current Permit Action

On February 7, 2008, the Department received a request for an administrative amendment from NWE for MAQP #2773-03. 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, the permit has been updated to reflect the current permit language and rule references used by the Department. **MAQP #2773-04** replaces MAQP #2773-03.

E. Additional Information

Additional information, such as applicable rules and regulations, BACT/Reasonably Available Control Technology (RACT) 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 complete copies of all applicable rules and regulations or copies where appropriate.

- A. ARM 17.8, Subchapter 1 - General Provisions, including, but not limited to:
1. ARM 17.8.101 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).

NWE shall comply with the 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 that, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

- 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 PM₁₀
 11. ARM 17.8.230 Fluoride in Forage

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 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. (1) This rule requires an opacity limitation of 20% for all fugitive emission sources and that reasonable precaution be taken to control emissions of airborne particulate matter. (2) 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 17.8.309 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, 1972, 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. NWE will consume pipeline-quality natural gas, in the compressor engines and the dehydration unit reboiler, which will meet this limitation.
6. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). This facility is not an NSPS-affected source because it does not meet the definition of a natural gas processing plant as defined in 40 CFR 60, Subpart KKK.
7. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. This source shall comply with the requirements of 40 CFR Part 63, as applicable, including the following subparts:
 - Subpart A – General Provisions apply to all equipment or facilities subject to an NESHAP Subpart as listed below.
 - Subpart HH – National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities applies to this source because the source is an area source of hazardous air pollutants (HAPs). For area sources, the affected source includes each glycol dehydration unit. Because

the glycol dehydration unit emits less than 1 tons 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).

- Subpart HHH – National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities does not apply to this source because the source is not a major source of HAPs based on the Department’s determinations for similar, larger sources using the GRI-GLYCalc Version 4.0 computer program.
- Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines applies to this source because NWE operates a stationary reciprocating internal combustion engine located at an area source of HAPs.

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. A permit application was not required for the current permit action because the action is considered administrative.
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. The air quality 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 that 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 subchapter, 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 NO_x; 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. NWE was not required to submit a permit application for the current permit action because the current action is considered 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. The current permit action is an administrative amendment, and therefore, did not require publication.
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 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 17.8.759 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 or 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 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 because it is not a listed source and does not have the potential to emit more than 250 tons per year of any air 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; or
 - c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of

- 10 microns or less (PM₁₀) in a serious PM₁₀ 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 #2773-04 for NWE, the following conclusions were made:
- The facility's PTE is less than 100 tons/year for any pollutant.
 - The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year of all HAPs.
 - This source is not located in a serious PM₁₀ non-attainment area.
 - This facility is not subject to any current NSPS.
 - This facility is subject to area source provisions of current NESHAP standards (40 CFR 63, Subparts A, HH, AND ZZZZ).
 - This source is not a Title IV affected source nor a solid waste combustion unit.
 - This source is not an EPA designated Title V source.

Based on these facts, the Department determined that NWE will be a minor source of emissions as defined under Title V.

III. BACT Determination

A BACT determination is required for each new or altered source. A BACT analysis was not required for the current permit action because the permit action is considered an administrative permit action.

IV. Emission Inventory

Emission Unit	Air Pollutants (tons/year)					
	PM	PM ₁₀	SO ₂	NO _x	VOC	CO
White Superior Compressor Engine	0.13	0.13	0.00	52.08	0.70	6.26
Ajax Compressor Engine	0.09	0.09	0.00	6.66	2.44	5.99
BS & B Reboiler	0.01	0.01	0.00	0.11	0.01	0.09
Heaters (4)	0.01	0.01	0.00	0.25	0.01	0.21
Totals	0.24	0.24	0.00	59.10	3.16	12.55

360-hp White Superior Compressor Engine

Brake Horsepower: 360 bhp

Hours of operation: 8,760 hr/yr

PM Emissions

Emission Factor: 10 lb/1.0E06 natural gas {2-02-002-02, AFSSCC pg 32}

Control Efficiency: 0.0%

Fuel Consumption: 8,500 btu/hp-hr {Maximum Design}

Calculations: $8,500 \text{ btu/hp-hr} * 0.001 \text{ ft}^3/\text{btu} * 360 \text{ hp} * 8,760 \text{ hr/yr} = 26,805,600 \text{ ft}^3/\text{yr}$
 $26,805,600 \text{ ft}^3/\text{yr} * 10 \text{ lb}/1.0\text{E}06 \text{ ft}^3 \text{ gas} * 1 \text{ ton}/2,000 \text{ lb} = 0.13 \text{ ton/yr}$

PM₁₀ Emissions

Emission Factor: 10 lb/1.0E06 natural gas {2-02-002-02, AFSSCC pg 32}
Control Efficiency: 0.0%
Fuel Consumption: 8,500 btu/hp-hr {Maximum Design}
Calculations: $8,500 \text{ btu/hp-hr} * 0.001 \text{ ft}^3/\text{btu} * 360 \text{ hp} * 8,760 \text{ hr/yr} = 26,805,600 \text{ ft}^3/\text{yr}$
 $26,805,600 \text{ ft}^3/\text{yr} * 10 \text{ lb}/1.0\text{E}06 \text{ ft}^3 \text{ gas} * 1 \text{ ton}/2,000 \text{ lb} = 0.13 \text{ ton/yr}$

NO_x Emissions

Emission factor: 15.00 g/bhp-hr {Manuf
Calculations: $15 \text{ g/bhp-hr} * 360 \text{ bhp} * 1 \text{ lb}/454 \text{ g} = 11.89 \text{ lb/hr}$
 $11.89 \text{ lb/hr} * 8,760 \text{ hr/yr} * 1 \text{ ton}/2,000 \text{ lb} = 52.08 \text{ ton/yr}$

VOC Emissions

Emission factor: 0.20 g/bhp {Manuf
Calculations: $0.20 \text{ g/bhp-hr} * 360 \text{ bhp} * 1 \text{ lb}/454 \text{ g} = 0.16 \text{ lb/hr}$
 $0.16 \text{ lb/hr} * 8,760 \text{ hr/yr} * 1 \text{ ton}/2,000 \text{ lb} = 0.70 \text{ ton/yr}$

CO Emissions

Emission factor: 1.80 g/bhp {Manuf
Calculations: $1.80 \text{ g/bhp-hr} * 360 \text{ bhp} * 1 \text{ lb}/454 \text{ g} = 1.43 \text{ lb/hr}$
 $1.43 \text{ lb/hr} * 8,760 \text{ hr/yr} * 1 \text{ ton}/2,000 \text{ lb} = 6.26 \text{ ton/yr}$

SO₂ Emissions

Emission factor: 5.88E-4 lb/MMbtu {AP-42,
Calculations: $5.88\text{E}-4 \text{ lb}/1.0\text{E}06 \text{ btu} * 454 \text{ g/lb} * 1054.80 \text{ btu/hp-hr} = 0.0003 \text{ g/bhp-hr}$
 $0.0003 \text{ g/bhp-hr} * 360 \text{ bhp} * 0.0022 \text{ lb/g} * 8,760 \text{ hr/yr} * 1 \text{ ton}/2,000 \text{ lb} = 0.001 \text{ ton/yr}$

230-hp Ajax Compressor Engine

Brake Horsepower: 230 bhp
Hours of operation: 8,760 hr/yr

PM Emissions

Emission Factor: 10 lb/1.0E06 natural gas {2-02-002-02, AFSSCC pg 32}
Control Efficiency: 0.0%
Fuel Consumption: 8,500 btu/hp-hr {Maximum Design}
Calculations: $8,500 \text{ btu/hp-hr} * 0.001 \text{ ft}^3/\text{btu} * 230 \text{ hp} * 8,760 \text{ hr/yr} = 17,125,800 \text{ ft}^3/\text{yr}$
 $17,125,800 \text{ ft}^3/\text{yr} * 10 \text{ lb}/1.0\text{E}06 \text{ ft}^3 \text{ gas} * 1 \text{ ton}/2,000 \text{ lb} = 0.09 \text{ ton/yr}$

PM₁₀ Emissions

Emission Factor: 10 lb/1.0E06 natural gas {2-02-002-02, AFSSCC pg 32}
Control Efficiency: 0.0%
Fuel Consumption: 8,500 btu/hp-hr {Maximum Design}
Calculations: $8,500 \text{ btu/hp-hr} * 0.001 \text{ ft}^3/\text{btu} * 230 \text{ hp} * 8,760 \text{ hr/yr} = 17,125,800 \text{ ft}^3/\text{yr}$
 $17,125,800 \text{ ft}^3/\text{yr} * 10 \text{ lb}/1.0\text{E}06 \text{ ft}^3 \text{ gas} * 1 \text{ ton}/2,000 \text{ lb} = 0.09 \text{ ton/yr}$

NO_x Emissions

Emission factor: 3.00 g/bhp-hour {Manuf
Calculations: $3.00 \text{ g/bhp-hour} * 230 \text{ bhp} * 1 \text{ lb}/454 \text{ g} = 1.52 \text{ lb/hr}$
 $1.52 \text{ lb/hr} * 8,760 \text{ hr/yr} * 1 \text{ ton}/2,000 \text{ lb} = 6.66 \text{ ton/yr}$

VOC Emissions

Emission factor: 1.10 g/bhp-hour
Calculations: 1.10 g/bhp-hour * 230 bhp * 1 lb/454 g = 0.56 lb/hr
0.56 lb/hr * 8,760 hr/yr * 1 ton/2,000 lb = 2.44 ton/yr

{Manufa

CO Emissions

Emission factor: 2.70 g/bhp-hour {Manufacturer's
Design}
Calculations: 2.70 g/bhp-hour * 230 bhp * 1 lb/454 g = 1.37 lb/hr
1.37 lb/hr * 8,760.0 hr/yr * 1 ton/2,000 lb = 5.99 ton/yr

SO₂ Emissions

Emission factor: 5.88E-4 lb/MMbtu
Calculations: 5.88E-4 lb/1.0E06 btu * 454 g/lb * 1054.80 btu/hp-hr = 0.0003 g/bhp-hr
0.0003 g/bhp-hr * 230 bhp * 0.0022 lb/g * 8,760 hr/yr * 1 ton/2,000 lb = 0.001 ton/yr

{AP-42,

BS & B Reboiler

Fuel Consumption: 250.00 Mbtu/hr {Information from company}
Hours of operation: 8,760 hr/yr

PM Emissions

Emission Factor: 5.7 lb/1.0E06 ft³ {AP-42, 1.4-2, 7/98}
Control Efficiency: 0.0%
Calculations: 250.00 Mbtu/hr * 1,000 btu/Mbtu * 0.001 ft³/btu * 8,760 hr/yr = 2,190,000 ft³/yr
2,190,000 ft³/yr * 5.7 lb/1.0E06 ft³ natural gas * 1 ton/2,000 lb = 0.01 ton/yr

PM₁₀ Emissions

Emission Factor: 5.7 lb/1.0E06 ft³ {AP-42, 1.4-2, 7/98}
Control Efficiency: 0.0%
Calculations: 250.00 MBtu/hr * 1,000 Btu/Mbtu * 0.001 ft³/Btu * 8,760 hr/yr = 2,190,000 ft³/yr
2,190,000 ft³/yr * 5.7 lb/1.0E06 ft³ natural gas * 1 ton/2,000 lb = 0.01 ton/yr

NO_x Emissions

Emission Factor: 100 lb/1.0E06 ft³ {AP-42, 1.4-1, 7/98}
Control Efficiency: 0.0%
Calculations: 250.00 Mbtu/hr * 1,000 btu/Mbtu * 0.001 ft³/btu * 8,760 hr/yr = 2,190,000 ft³/yr
2,190,000 ft³/yr * 100 lb/1.0E06 ft³ natural gas * 1 ton/2,000 lb = 0.11 ton/yr

VOC Emissions

Emission Factor: 5.5 lb/1.0E06 ft³ {AP-42, 1.4-2, 7/98}
Control Efficiency: 0.0%
Calculations: 250.00 Mbtu/hr * 1,000 btu/Mbtu * 0.001 ft³/Btu * 8,760 hr/yr = 2,190,000 ft³/yr
2,190,000 ft³/yr * 5.5 lb/1.0E06 ft³ natural gas * 1 ton/2,000 lb = 0.01 ton/yr

CO Emissions

Emission Factor: 84 lb/1.0E06 ft³ {AP-42, 1.4-1, 7/98}
Control Efficiency: 0.0%
Calculations: 250.00 Mbtu/hr * 1,000 btu/Mbtu * 0.001 ft³/btu * 8,760 hr/yr = 2,190,000 ft³/yr
2,190,000 ft³/yr * 84 lb/1.0E06 ft³ natural gas * 1 ton/2,000 lb = 0.09 ton/yr

SO₂ Emissions

Emission Factor: 0.6 lb/1.0E06 ft³ {AP-42, 1.4-2, 7/98}
Control Efficiency: 0.0%
Calculations: 250.00 Mbtu/hr * 1,000 btu/Mbtu * 0.001 ft³/btu * 8,760 hr/yr = 2,190,000 ft³/yr
2,190,000 ft³/yr * 0.6 lb/1.0E06 ft³ natural gas * 1 ton/2,000 lb = 0.00 ton/yr

Heaters (4)

Fuel Consumption: 570.00 Mbtu/hr {Information from Company}
Hours of operation: 8,760 hr/yr

PM Emissions

Emission Factor: 5.7 lb/1.0E06 ft³ {AP-42, 1.4-2, 7/98}
Control Efficiency: 0.0%
Calculations: 570.00 Mbtu/hr * 1,000 btu/Mbtu * 0.001 ft³/btu * 8,760 hr/yr = 4,993,200 ft³/yr
4,993,200 ft³/yr * 5.7 lb/1.0E06 ft³ natural gas * 1 ton/2,000 lb = 0.01 ton/yr

PM₁₀ Emissions

Emission Factor: 5.7 lb/1.0E06 ft³ {AP-42, 1.4-2, 7/98}
Control Efficiency: 0.0%
Calculations: 570.00 Mbtu/hr * 1,000 btu/Mbtu * 0.001 ft³/btu * 8,760 hr/yr = 4,993,200 ft³/yr
4,993,200 ft³/yr * 5.7 lb/1.0E06 ft³ natural gas * 1 ton/2,000 lb = 0.01 ton/yr

NO_x Emissions

Emission Factor: 100 lb/1.0E06 ft³ {AP-42, 1.4-1, 7/98}
Control Efficiency: 0.0%
Calculations: 570.00 Mbtu/hr * 1,000 btu/Mbtu * 0.001 ft³/btu * 8,760 hr/yr = 4,993,200 ft³/yr
4,993,200 ft³/yr * 100 lb/1.0E06 ft³ natural gas * 1 ton/2,000 lb = 0.25 ton/yr

VOC Emissions

Emission Factor: 5.5 lb/1.0E06 ft³ {AP-42, 1.4-2, 7/98}
Control Efficiency: 0.0%
Calculations: 570.00 Mbtu/hr * 1,000 btu/Mbtu * 0.001 ft³/btu * 8,760 hr/yr = 4,993,200 ft³/yr
4,993,200 ft³/yr * 5.5 lb/1.0E06 ft³ natural gas * 1 ton/2,000 lb = 0.01 ton/yr

CO Emissions

Emission Factor: 84 lb/1.0E06 ft³ {AP-42, 1.4-1, 7/98}
Control Efficiency: 0.0%
Calculations: 570.00 Mbtu/hr * 1,000 btu/Mbtu * 0.001 ft³/btu * 8,760 hr/yr = 4,993,200 ft³/yr
4,993,200 ft³/yr * 84 lb/1.0E06 ft³ natural gas * 1 ton/2,000 lb = 0.21 ton/yr

SO₂ Emissions

Emission Factor: 0.6 lb/1.0E06 ft³ {AP-42, 1.4-2, 7/98}
Control Efficiency: 0.0%
Calculations: 570.00 Mbtu/hr * 1,000 btu/Mbtu * 0.001 ft³/Btu * 8,760 hr/yr = 4,993,200 ft³/yr
4,993,200 ft³/yr * 0.6 lb/1.0E06 ft³ natural gas * 1 ton/2,000 lb = 0.00 ton/yr

V. Existing Air Quality

The existing air quality of the area is expected to be in compliance with all state and federal requirements. NWE (as MPC) conducted ambient air quality modeling using EPA guideline

models (ISC2 and COMPLEX) for all of the compressor stations in and near Glacier, Toole, Liberty, and Pondera Counties. The meteorological data used in the models was collected at the Great Falls Airport National Weather Service station. The modeling originally submitted by NWE assumed annual emissions of approximately 62.4 tons per year of NO_x and 62.4 tons per year of CO. The potential emissions for the facility are less than the emissions assumed for the modeling exercise; therefore, the modeling analysis conducted for MAQP #2773-00 still demonstrates that the facility will not cause or contribute to a violation or exceedance of any state or federal ambient standard.

VI. Ambient Air Impact Analysis

The Department determined, based on ambient air modeling, that the impacts from this permitting action will be minor. The Department believes it 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

This permitting action will not result in an increase of emissions from the facility and is considered an administrative action; therefore, an Environmental Assessment is not required

Permit Analysis Prepared By: Moriah Peck, P.E.

Date: May 27, 2008