

AIR QUALITY PERMIT

Issued to: Bear Paw Energy, Inc. Permit #2982-02
North Compressor Station Administrative Amendment (AA)
P.O. Box 580 Request Received: 1/28/08
Baker, Montana 59313 Department's Decision on AA: 4/01/08
Permit Final: 4/17/08
AFS Number: 025-0011

An air quality permit, with conditions, is hereby granted to Bear Paw Energy, Inc., (BPE) 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

BPE operates a natural gas compressor station and associated equipment located in Section 4, Township 9 North, Range 58 East in Fallon County, Montana. The facility is known as the North Compressor Station, and its purpose is to compress and dry field gas that flows to the Baker Gas Plant, located 15 miles south of the compressor station. A list of permitted equipment is located in the Permit Analysis section of this permit.

B. Current Permit Action

On January 28, 2008, the Department of Environmental Quality (Department) received a letter from BPE requesting language changes to allow for greater operational flexibility. Specifically, the letter requested conditions pertaining to the natural gas compressor engine be written in a "de minimis friendly" manner. The current permit action updates the permit to reflect current permit language and format.

SECTION II: Conditions and Limitations

A. Emission Limitations:

1. BPE shall not operate more than one natural gas compressor engine at any given time, and any engine operated shall be a rich-burn compressor engine with a maximum rated design capacity not to exceed 600 brake horsepower (bhp) equipped with a non-selective catalytic reduction (NSCR) unit and an air to fuel ratio (AFR) controller (ARM 17.8.749 and 752).
2. The pound per hour (lb/hr) emission limits for each engine shall be determined using the following equations and pollutant specific grams per brake horsepower-hour (g/bhp-hr) emission factors (ARM 17.8.752):

Equation

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

Rich-Burn Emission Factors (600 bhp)

Nitrogen oxides (NO _x)	2.0 g/bhp-hr
Carbon monoxide (CO)	2.0 g/bhp-hr
Volatile organic compounds (VOC)	1.0 g/bhp-hr

3. BPE shall operate all equipment to provide the maximum air pollution control for which it was designed (ARM 17.8.752).
4. BPE 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. BPE 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 (ARM 17.8.308).
6. BPE shall treat all unpaved portions of the haul roads, access roads, parking lots, or 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. The flare stack shall be used only for equipment blowdown when a shut down is required at the North Compressor Station, or for emergency use at the North Compressor Station. In the event that repairs are required or an emergency arises, BPE shall route all the VOC and Hydrogen Sulfide (H₂S) vents at the plant to the emergency flare (ARM 17.8.752).
8. BPE shall limit the hours of operation of the emergency flare to 1,800 hours during any rolling 12-month period. This will result in emissions from the emergency flare of less than 41.4 tons of sulfur oxides (SO_x) and 45.8 tons of CO during any rolling 12-month time period. Any calculations used to establish SO_x and CO emissions shall be approved by the Department and shall be based on the most recent AP-42 factors, unless otherwise allowed by the Department (ARM 17.8.749 and ARM 17.8.1204).
9. BPE shall install a flash tank to operate as part of the glycol dehydration system. The flash tank shall operate at sufficient pressure to keep the flash off gases within the process and not allow any VOC emissions (ARM 17.8.752).
10. BPE shall maintain the glycol recirculation rate at an optimal Triethylene Glycol (TEG)-to-water ratio to minimize VOC emissions (ARM 17.8.749).
11. The condensate loading at the North Compressor Station shall be operated under a vapor balance system. All condensate loading to tank trucks shall be conducted using bottom loading. Vapor flash resulting from loadout operations shall be returned to the condensate storage tank to maintain vapor balanced emissions control. Upon completion of the loadout, all lines used for loading shall be purged of VOC vapors. These VOC vapors shall be recycled for compression (ARM 17.8.752).

B. Testing Requirements

1. The compressor engine shall be initially tested for NO_x and CO, concurrently, and the results submitted to the Department in order to demonstrate compliance with the emission limitations contained in Section II.A.2 within 180 days of startup. After the initial source test, additional testing shall continue on an every four-year basis or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105 and ARM 17.8.749).
2. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

3. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

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

2. BPE 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 startup 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(l)(d) (ARM 17.8.745).
3. All records compiled in accordance with this permit must be maintained by BPE 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. BPE shall document, by month, the hours of operation for the emergency flare. By the 25th day of each month, BPE shall total the hours of operation for the emergency flare for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.7. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).
5. BPE 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 the certification requirements of ARM 17.8.1207. The annual certification shall be submitted along with the annual emission inventory information (ARM 17.8.749 and ARM 17.8.1204).

SECTION III: General Conditions

- A. Inspection – BPE 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 BPE fails to appeal as indicated below.

- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving BPE 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 BPE 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 three 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
Bear Paw Energy, Inc.
Baker North Compressor Station
Fallon County, MT
Permit #2982-02

I. Introduction/Process Description

Bear Paw Energy, Inc. (BPE) owns and operates a natural gas compressor and dehydration station known as the North Compressor Station. The facility is located on Anticline Road in Section 4, Township 9 North, Range 58 East, in Fallon County, near Baker, Montana.

A. Permitted Equipment

The North Compressor Station consists of the following equipment:

- One natural gas rich-burn compressor engine with with an non-selective catalytic reduction (NSCR) unit, an air to fuel ratio (AFR) controller, (up to 600 brake horsepower (bhp));
- One triethylene glycol (TEG) dehydration reboiler unit (up to 200,000 British thermal units per hour (Btu/hr));
- One flash tank;
- One Utility Safety Emergency Flare Pilot (up to 3.7 million Btu per hour (MMBtu/hr));
- One Utility Safety Emergency Flare (up to 3.2 million standard cubic feet per day (MMscfd)); and
- Miscellaneous support equipment and materials.

B. Source Description

The Baker North Compressor Station serves two primary purposes that include compressing and dehydrating gas that flows to the BPE Baker Gas Plant located 15 miles south of the compressor station. The gas contains moisture that 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 designed maximum throughput of the compressor station is 3.2 MMscfd, but approximately 2.7 MMscfd of produced gas will enter the suction of the three-stage compressor at 30-50 psig. The compressor will compress the gas to approximately 650 psig at the third-stage discharge. The third-stage discharge will be cooled to approximately 120°F and the resulting liquids collected for truck transfer. The scrubber's liquids collected for truck transfer will be held in a tank with a gas line recycled to the first-stage discharge. The cooled third-stage discharge gas flows to the TEG dehydration skid.

By contacting the water-saturated gas with the TEG, also known as lean glycol, the gas stream is "dried" by removing the water to approximately 4 to 5 pounds per million standard cubic feet (lbs/MMscf), which results in a 20°F dewpoint for the gas. The TEG-to-water ratio (how many gallons of TEG are required to absorb 1 pound of water) varies between 2 and 5 gallons of TEG per pound of water; the industry accepted rule-of-thumb is 3 gallons of TEG per pound of water removed. Emissions are related to the glycol recirculation rate.

The dried gas flows through the pipeline to the BPE Baker Gas plant. The rich glycol stream, laden with moisture, methane, and Volatile Organic Compound (VOC), will pass through a flash tank to remove up to 50% of the VOC as "flash off gas". This collected flash off gas is

reintroduced into the station inlet. The rich glycol stream is then processed in the TEG regenerator, also known as the reboiler, to remove the absorbed water, remaining methane and VOC. The glycol returns to the absorber as lean glycol. The TEG regenerator off gas will be directly emitted from the still vent.

The 25-foot flare stack provides emergency pressure relief and blowdown capability for the North Compressor Station down time. In order to maintain potential emissions below major source thresholds, use of the emergency flare is limited to 1,800 hours per year.

C. Permit History

On April 1, 1997, BPE submitted an application for **Permit #2982-00** to construct a new facility, the Baker North Compressor Station. The permit application was not deemed to be complete until July 15, 1997, and the final air quality preconstruction Permit #2982-00 was issued on September 3, 1997.

On February 15, 2000, the Department of Environmental Quality (Department) received, from TransMontaigne, Inc., a notification of an error contained in the permit in the legal description of BPE's North Compressor Station. Permit #2982-00 incorrectly identified the location of the compressor station as being in Section 3. The correct legal description for BPE's North Compressor Station is SW NW Section 4, Township 9 North, Range 58E, Fallon County, Montana. The permit action was an administrative action. **Permit #2982-01** replaced Permit #2982-00.

On June 19, 2003, BPE submitted an application for Permit #2982-02 to replace the existing vapor recovery unit (VRU) control system with a flare, for the dehydration still vent gases. On October 10, 2003, the Department issued a deficiency letter that requested a Best Available Control Technology (BACT) analysis. BPE sent a letter on December 17, 2003, requesting additional time, but since no information was forthcoming the permit application was considered withdrawn.

On August 15, 2005, the Department received from BPE a permit application for the proposed replacement of the VRU by a continuous flare, to control VOC emissions from the reboiler still vent. The application also requested operational restrictions of 1,800 hours per year for the facility's existing Emergency Flare, to allow the facility to operate as a synthetic minor source.

The Department determined the application was incomplete and requested more information on August 29, 2005. BPE provided a response on September 30, 2005. After review, it was determined that additional information was required and the Department requested this information on October 13, 2005. On December 9, 2005, the Department received the BACT analysis for the proposed project. BPE's December submittal concluded that it was economically infeasible to install a flare, and revised their proposal to reflect the removal of the VRU and installation of a flash tank. **Permit #2982-02** replaced Permit #2982-01.

D. Current Permit Action

On January 28, 2008, the Department received a letter from BPE requesting language changes to allow for greater operational flexibility. Specifically, the letter requested conditions pertaining to the natural gas compressor engine be written in a "de minimis friendly" manner. The current permit action updates the permit to reflect current permit language and format. **Permit #2982-03** replaces Permit #2982-02.

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 Administrative Rules of Montana (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).

BPE 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 four 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 of 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 the following:

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

BPE 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. 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. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, BPE 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 one 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. BPE will consume pipeline-quality natural gas, which will meet this limitation.
6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.
7. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS). The BPE North Compressor Station is not an NSPS-affected source because it does not meet the definition of a natural gas processing plant defined in 40 CFR 60.
8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. A major Hazardous Air Pollutant (HAP) 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 BPE, the North Compressor Station facility is not subject to the provisions of 40 CFR 63 Subparts HHH and ZZZZ, because the facility is not a major source of HAPs. The North Compressor Station facility is, however, 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 one 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. BPE was not required to submit an application fee since the permitting action is 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 prorate 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) more than 25 tons per year of any pollutant. BPE's North Compressor Station has the potential to emit nitrogen oxides (NO_x), sulfur oxides (SO_x), carbon monoxide (CO), and VOC at greater than 25 tons per year; 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. BPE was not required to submit a permit application because the current permit action is administrative. (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. BPE was not required to submit an affidavit of publication of public notice since the current permit action is administrative.
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 BPE 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 17.8.760 Additional Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.
12. 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 one year after the permit is issued.
13. 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).

14. 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.
15. 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 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 below 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; 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 #2982-03 for the BPE North Compressor Station, the following conclusions were made:
 - a. The facility's PTE is less than 100 tons/year for any pollutant.
 - b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year for all HAPs.

- c. This source is not located in a serious PM₁₀ nonattainment area.
- d. This facility is not subject to any current NSPS.
- e. This facility is not subject to any current National Emission Standards for Hazardous Air Pollutants (NESHAP) standards.
- f. This source is not a Title IV affected source, nor a solid waste combustion unit.
- g. This source is not an Environmental Protection Agency (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.

BPE has taken federally enforceable permit limits to keep potential SO_x and CO emissions below major source permitting thresholds by limiting the emergency flare hours to less than 1,800 hours per rolling 12-months. 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.

BPE 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.

BPE is not subject to the Title V Operating Permit Program because a federally enforceable limitation has been established to limit BPE's PTE below the major source threshold. Based on these facts, BPE will be a minor source of emissions, as defined under the Title V Operating Permit Program.

III. BACT Determination

A BACT determination is required for each new or altered source. BPE 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 current permit action is considered an administrative permit action.

IV. Emission Inventory

The following table presents the annual potential to emit in tons per year for BPE's North Compressor Station. The PTE for the Dehydration Unit takes into account the VOC emission reductions realized by using a flash tank with zero emissions. Since BPE has taken a restriction of 1,800 hours per year for the emergency flare, the emissions from combusting up to 0.13 MMscf/hr (3.2 MMscfd) of natural gas released from emergency situations have been reduced accordingly.

Emission Inventory – Permit #2982-03 BPE North Compressor Station

Source	Tons per Year				
	PM-10	NOx	VOC	CO	SOx
600 HP Caterpillar Engine G398TA	0.17	11.61	5.79	11.61	0.01
Dehydrator Regenerator Heater (0.2 MMBtu/hr)	0.0067	0.088	0.0048	0.07	0.0005
Dehydration Unit – Regenerator Still vent	0.00	0.00	20.61	0.00	0.00
Flash Tank	0.00	0.00	0.00	0.00	0.00
Fugitive VOC Emissions	0.00	0.00	0.75	0.00	0.00
Liquid Condensate Loading	0.00	0.00	1.68	0.00	0.00
Utility “Emergency” Flare - Pilot	0.12	1.6	0.088	1.34	1.46
Utility “Emergency” Flare – Product Combustion (Restricted to 1,800 hrs/yr)	0.91	8.16	16.80	44.40	39.89
TOTAL EMISSIONS	1.21	21.46	45.72	57.42	41.36

600 bhp Natural Gas-Fired, Rich-burn Engine

Brake Horsepower: 600 bhp
 Fuel Consumption: 4.09 MMBtu/hr
 Hours of operation: 8760 hr/yr

PM₁₀ Emissions

Emission Factor: 9.50E-03 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
 Calculations: 4.09 MMBtu/hr * 9.50E-03 lb/MMBtu = 0.0388 lb/hr
 0.0388 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.17 ton/yr

NO_x Emissions

Emission factor: 2.00 gram/bhp-hour (BACT Determination)
 Calculations: 2.00 gram/bhp-hour * 600 bhp * 0.002205 lbs/gram = 2.65 lb/hr
 2.65 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 11.61 ton/yr

VOC Emissions

Emission factor: 1.00 gram/bhp-hour (BACT Determination)
 Calculations: 1.00 gram/bhp-hour * 600 bhp * 0.002205 lbs/gram = 1.323 lb/hr
 1.323 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 5.79 ton/yr

CO Emissions

Emission factor: 2.00 gram/bhp-hour (BACT Determination)
 Calculations: 2.00 gram/bhp-hour * 600 bhp * 0.002205 lbs/gram = 2.65 lb/hr
 2.65 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 11.61 ton/yr

SO₂ Emission

Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
 Calculations: 4.09 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.0024 lb/hr
 0.0024 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.01 ton/yr

Dehydration Unit

Dehydration Regenerator Heater (0.20 MMBtu/hr)

Fuel Consumption: 0.2 MMBtu/hr
 0.2 MMBtu/hr / 1000 MMBtu/MMscf = 0.0002 MMscf/hr

PM-10 Emissions:

Emission Factor: 7.6 lb/MMscf gas {AP-42, 1.4-1, 7/98}
Fuel Consumption: 0.0002MMscf/hr {Information from company}
Calculations: 7.6 lb/MMscf gas* 0.0002MMscf gas/hr* 0.0005 ton/lb *8760 hr/yr = 0.0067 ton/yr

NOx Emissions:

Emission Factor: 100 lb/MMscf gas {AP-42, 1.4-2, 7/98}
Fuel Consumption: 0.0002MMscf/hr {Information from company}
Calculations: 100 lb/MMscf gas* 0.0002MMscf gas/hr* 0.0005 ton/lb *8760 hr/yr = 0.088 ton/yr

VOC Emissions:

Emission Factor: 5.50 lb/MMscf {AP-42, 1.4-3, 7/98}
Fuel Consumption: 0.0002MMscf/hr {Information from company}
Calculations: 5.5 lb/MMscf gas* 0.0002MMscf gas/hr* 0.0005 ton/lb *8760 hr/yr = 0.0048 ton/yr

CO Emissions:

Emission Factor: 84 lb/MMscf {AP-42, 1.4-3, 7/98}
Fuel Consumption: 0.0002MMscf/hr {Information from company}
Calculations: 84lb/MMscf gas* 0.0002MMscf gas/hr* 0.0005 ton/lb *8760 hr/yr = 0.073 ton/yr

SOx Emissions:

Emission Factor: 0.6 lb/MMscf {AP-42, 1.4-3, 7/98}
Fuel Consumption: 0.0002MMscf/hr {Information from company}
Calculations: 0.6 lb/MMscf gas* 0.0002MMscf gas/hr* 0.0005 ton/lb *8760 hr/yr = 0.0005 ton/yr

Dehydrator Still Vent Emissions

VOC emissions from the Dehydrator Unit were calculated using the GRI-GLYCalc, Version 4.0 program. For detailed input parameters, refer to the permit application.

Hours of operation: 8760 hr/yr
Max Dry Gas Flow Rate: 3.2 MMscf/day (max design)
Glycol Recirculation Rate: 1.5 gallons per minute

Dehydrator Regenerator Still Vent – no control
Emission Factor: 4.71 lb/hr (GRI-GLYCalc, Version 4.0)

Calculations: 4.71 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 20.61 ton/yr

Flash Tank

Zero emissions – flash off gas re-introduced into process

Guvud Utility (“Emergency”) Flare

Flare - Pilot

Pilot burner: 0.0036 scf/hr {Permit #2982-00}

PM-10 Emissions:

Emission Factor: 7.6 lb/MMSCF {AP-42, 1.4-1, 7/98}
Calculations: 7.6 lb/MMSCF * 0.0036 MMSCF/hr * 8760 hr/yr * 0.0005 ton/lb = 0.12 ton/yr

NOx Emissions:

Emission Factor: 100 lb/MMscf gas {AP-42, 1.4-2, 7/98}
Calculations: 100 lb/MMscf gas * 0.0036 MMscf/hr * 0.0005 ton/lb *8760 hr/yr = 1.6 ton/yr

VOC Emissions:

Emission Factor: 5.5 lb/MMSCF {AP-42, 1.4-1, 7/98}
Fuel Consumption: 5.5 * lb/MMSCF * 0.0036 MMSCF/hr * 8760 hr/yr * 0.0005 ton/lb = 0.088 ton/yr

CO Emissions:

Emission Factor: 84 lb/MMSCF {AP-42, 1.4-1, 7/93}
Fuel Consumption: 84 * lb/MMSCF * 0.0036 MMSCF/hr * 8760 hr/yr * 0.0005 ton/lb = 1.34 ton/yr

SOx Emissions:

544.00 ppm H2S
544 ppm H2S (1 grn/100 scf *16 ppm) = 0.0049 lbs H2S x 64.06 lbs SO2 = .00913 lbs SO2
(7000 grain/1 lb) 100 scf 34.08 lb H2S 100 scf

Emission Factor: 91.3 lb SO2/MMSCF
91.3 lb SO2/MMSCF * 0.003653 MMSCF/hr * 8760 hr/yr * 0.0005 ton/lb = 1.46 ton/yr

Flare - Product

Combustion of Natural Gas Product (Emergency Release from facility)

Fuel (Product) Consumption: 3.2 MMscf/day (=0.1333 MMscf/hr or 133.3MMBTU/hr)
Fuel Type: 0.2% sulfur in the fuel {Permit Application #2982-02}
Hours Limitation: 1,800 hours/year

PM-10 Emissions:

Emission Factor: 7.6 lb/MMSCF {AP-42, 1.4-1, 7/98}
Calculations: 7.6 lb/MMSCF * 0.1333 MMSCF/hr * 1,800 hours/year * 0.0005 ton/lb = 0.91 ton/yr

NOx Emissions:

Emission Factor: 0.068 lb/MMBTU {AP-42, 13.5-4, 1/95}
Calculations: 0.068 lb/MMBTU * 133.3 MMBTU/hr * 1,800 hours/year * 0.0005 ton/lb = 8.16 ton/yr

VOC Emissions:

Emission Factor: 0.14 lb/MMBTU {AP-42, 13.5-4, 1/95}
Calculations: 0.14 lb/MMBTU * 133.3 MMBTU/hr * 1,800 hours/year * 0.0005 ton/lb = 16.80 ton/yr

CO Emissions:

Emission Factor: 0.37 lb/MMBTU {AP-42, 13.5-4, 1/95}
Calculations: 0.37 lb/MMBTU * 133.3 MMBTU/hr * 1,800 hours/year * 0.0005 ton/lb = 44.39 ton/yr

SOx Emissions:

Emission Factor: 0.2% H₂S {2982-02}
Calculations: 0.1333MMSCF/hr * 0.2% H₂S = 266.67 scf/hr H₂S
266.67 scf/hr H₂S * 1 lb mol/385 scf = 0.6926 lb mol/hr
0.6926 lb mol/hr * 64 b SO₂ / lb mol = 44.33 lb/hr SO₂

44.33 lb SO₂/hr * 1,800 hr/yr * 0.0005 ton/lb = 39.89 ton/yr

V. Existing Air Quality

The facility is located in the SW ¼ of the NW ¼ of Section 4, Township 9 North, Range 58 East, in Fallon County. Fallon County is unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants.

VI. Ambient Air Impact Analysis

The Department determined that the impacts from this permitting action will be minor. The Department believes that the amount of controlled emissions generated by this project will not cause or contribute to a violation of any set ambient air quality standard.

VII. Taking or Damaging Implication Analysis

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

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.

Analysis Prepared By: Trista Glazier

Date: March 3, 2008