

AIR QUALITY PERMIT

Issued To: Bitter Creek Pipelines, LLC Permit: #3297-00
Seven Brothers 35 Battery Compressor Station Application Complete: 12/31/03
P.O. Box 131 Preliminary Determination Issued: 02/04/04
Glendive, MT 59330 Department's Decision Issued: 02/20/04
Permit Final: 03/09/04
AFS: # 003-0021

An air quality permit, with conditions, is hereby granted to Bitter Creek Pipelines, LLC Seven Brothers 35 Battery Compressor Station (BCPL), 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. Permitted Equipment

Permit #3297-00 is issued to BCPL for the construction and operation of the Seven Brothers 35 Battery Compressor Station. The facility is a natural gas compressor station. A complete list of the permitted equipment is contained in Section I.A of the permit analysis.

B. Plant Location

The facility is located approximately 3 miles east of Decker, Montana, in Section 35, Township 9 South, Range 40 East, in Big Horn County, Montana.

SECTION II. Conditions and Limitations

A. Emission Limitations

1. Emissions from each of the six 400-horsepower (hp) Waukesha F18GL compressor engines shall be equipped with a catalytic oxidation catalyst. Emissions from each of the 400-hp compressor engines shall not exceed the following (ARM 17.8.749 and ARM 17.8.752):

NO _x ¹	0.88 lb/hr
CO	0.44 lb/hr
VOC	0.44 lb/hr

2. BCPL 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).
3. BCPL 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).

¹ NO_x reported as NO₂.

4. BCPL 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.3 (ARM 17.8.749).

B. Testing Requirements

1. Each of the four new compressor engines (EU3-EU6) shall be initially tested for NO_x and CO, concurrently, to demonstrate compliance with the NO_x and CO emission limits established according to Section II.A.1, within 180 days of the initial start up date of the compressor engine. Further testing shall continue on an every 4-year basis or according to another testing/monitoring schedule as may be approved by the Department of Environmental Quality (Department) (ARM 17.8.105 and ARM 17.8.749).
2. The two existing compressor engines (EU1 and EU2) shall be initially tested for NO_x and CO, concurrently, to demonstrate compliance with the NO_x and CO emission limits established according to Section II.A.1, within 180 days of the final issuance of Permit #3297-00. Further testing shall continue on an every 4-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).
3. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
4. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

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

3. All records compiled in accordance with this permit must be maintained by BCPL 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).

D. Notification

BCPL shall provide the Department (both the Billings regional office and the Helena office) with written notification of the following information within the specified time periods (ARM 17.8.749).

1. BCPL shall provide the Department with written notification of the date that construction commenced on the four new compressor engines at the Seven Brothers 35 Battery Compressor Station within 30 days after the commencement of construction.
2. BCPL shall provide the Department with the actual start-up date of each of the four new compressor engines within 15 days after the actual start-up date of each respective engine.

SECTION III: General Conditions

- A. Inspection – BCPL 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 BCPL fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving BCPL 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 Department’s decision on the application is not final unless 15 days have elapsed and there is no request for a hearing under this section. The filing of a request for a hearing postpones the effective date of the Department’s decision until conclusion of the hearing and issuance of a final decision by the Board.
- F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy 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 BCPL 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
Bitter Creek Pipelines, LLC
Seven Brothers 35 Battery Compressor Station
Permit #3297-00

I. Introduction/Process Description

Bitter Creek Pipelines, LLC (BCPL) is permitted for the construction and operation of the Seven Brothers 35 Battery Compressor Station. The facility is a natural gas compressor station located approximately 3 miles east of Decker, Montana, in Section 35, Township 9 South, Range 40 East, in Big Horn County, Montana.

A. Permitted Equipment

The facility consists of the following equipment:

1. (6) 400-horsepower (hp) natural gas fired Waukesha F18GL compressor engines.
2. (1) up to 2.21-million British thermal units per hour (MMBtu/hr) natural gas fired heater

B. Source Description

The purpose of the BCPL – Seven Brothers 35 Battery Compressor Station is to compress natural gas for transmission through the natural gas pipeline. The compression of the gas is accomplished with the compressor engines listed in Section I.A of the permit analysis.

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 of Environmental Quality (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).

BCPL shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited, 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 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

BCPL 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, BCPL 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. BCPL will burn natural gas in all fuel burning equipment, 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). This facility is not an NSPS affected source because it does not meet the definition of any NSPS subpart defined in 40 CFR 60.
8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR 63, shall comply with the requirements of 40 CFR 63, as listed below:

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 applicable provisions of 40 CFR Part 63, Subpart HH. In order for a natural gas production facility to be subject to 40 CFR Part 63, Subpart HH requirements, certain criteria must be met. First, the facility must be a major source of Hazardous Air Pollutants (HAP) as determined according to paragraphs (a)(1)(i) through (a)(1)(iii) of 40 CFR 63, Subpart HH. Second, a facility that is determined to be major for HAPs must also either process, upgrade, or store hydrocarbon liquids prior to the point of custody transfer, or process, upgrade, or store natural gas prior to the point at which natural gas enters the natural gas transmission and storage source category or is delivered to a final end user. Third, the facility must also contain an affected source as specified in paragraphs (b)(1) through (b)(4) of 40 CFR Part 63, Subpart HH. Finally, if the first three criteria are met, and the exemptions contained in paragraphs (e)(1) and (e)(2) of 40 CFR Part 63, Subpart HH do not apply, the facility is subject to the applicable provisions of 40 CFR Part 63, Subpart HH. Based on the information submitted by BCPL, the Seven Brothers 35 Battery Compressor Station is not subject to the provisions of 40 CFR Part 63, Subpart HH because the facility is not a major source of HAPs.

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. In order for a natural gas transmission and storage facility to be subject to 40 CFR Part 63, Subpart HHH requirements, certain criteria must be met. First, the facility must transport or store natural gas prior to the gas entering the pipeline to a local distribution company or to a final end user if there is no local distribution company. In addition, the facility must be a major source of HAPs as determined using the maximum natural gas throughput as calculated in either paragraphs (a)(1) and (a)(2) or paragraphs (a)(2) and (a)(3) of 40 CFR Part 63, Subpart HHH. Second, a facility must contain an affected source (glycol dehydration unit)

as defined in paragraph (b) of 40 CFR Part 63, Subpart HHH. Finally, if the first two criteria are met, and the exemptions contained in paragraph (f) of 40 CFR Part 63, Subpart HHH, do not apply, the facility is subject to the applicable provisions of 40 CFR Part 63, Subpart HHH. Based on the information submitted by BCPL, the Seven Brothers 35 Battery Compressor Station is not subject to the provisions of 40 CFR 63, Subpart HHH because the facility is not a major 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. BCPL submitted the appropriate permit application fee for the current permit action.
2. ARM 17.8.505 When Permit Required--Exclusions. 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) greater than 25 tons per year of any pollutant. BCPL has the potential to emit more than 25 tons per year of nitrogen oxides (NO_x) and carbon monoxide (CO); 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. BCPL submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal

publication in a newspaper of general circulation in the area affected by the application for a permit. BCPL submitted an affidavit of publication of public notice for the December 26, 2003, issue of the *Billings Gazette*, a newspaper of general circulation in the Town of Decker, MT, in Big Horn County, as proof of compliance with the public notice requirements.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.
7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The 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 BCPL 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 1 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 less than 250 tons per year of any pollutant (excluding fugitive emissions).

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

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:
 - a. PTE > 100 tons/year of any pollutant;
 - b. PTE > 10 tons/year of any one HAP, PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; 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 require that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #3297-00 for BCPL, 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 and 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 New Source Performance Standards.

- e. This facility is not subject to any current National Emission Standards for Hazardous Air Pollutant 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.

Based on these facts, the Department determined that BCPL would 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. BCPL shall install on the new or altered source the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. A BACT determination is required for each new or modified source. The BACT analysis addresses the available methods for controlling CO emissions from the two existing and four proposed compressor engines. The Department reviewed previous BACT determinations for compressor engines before making the following BACT determinations.

The Department recommends a top-down BACT approach. This includes the consideration of all available control technologies, ranking them by control efficiency, and then evaluating them based on technical feasibility, cost effectiveness, and environmental effects.

Starting with the most effective technology, that particular technology is evaluated on the above criteria. If that technology is eliminated based on any of the criteria, then the next most effective technology is reviewed until one cannot be eliminated and BACT is determined.

Step 1: Identify All Control Technologies

CO

A. Lean-Burn Engine with Catalytic Oxidation

Catalytic Oxidation is a post combustion technology that has been applied to oxidize CO emissions from lean burn engines. As mentioned in Section 3.E of this permit analysis, lean burn technologies may cause increased CO emissions. In a catalytic oxidation system, CO passes over a catalyst, usually a noble metal, which oxidizes the CO to carbon dioxide (CO₂) at efficiencies of 70-90%.

B. Lean-Burn Engine with an Air Fuel Ratio (AFR) Controller

The NO_x and CO emissions from a lean-burn engine can be stabilized by installing an electronic AFR controller. This device maintains the proper air to fuel ratio that will optimize the performance of the lean burn engine. A lean-burn engine with an AFR controller achieves approximately the same reduction in emissions as a rich-burn engine fitted with an NSCR unit and an AFR controller.

C. Lean-Burn Engine

The lean-burn engine uses a precombustion chamber to enclose a rich mixture of air and fuel; the mixture is then ignited in this chamber. The resulting ignition front fires into the larger main cylinder that contains a much leaner fuel mixture. Staging the combustion and burning a leaner fuel mixture results in lowering of peak flame temperatures. Lower combustion temperature assures lower NO_x concentration in the exhaust gas stream; however, excess air in the fuel/air mixture can result in increased CO emissions.

D. AFR Controller (NO_x and CO Control at the Crossover Point)

In this process, the proper air-to-fuel ratio is obtained by adjusting the engine to operate at the crossover point, where NO_x and CO emissions are equal. At the crossover point, the engine operates neither too lean nor too rich. Excess hydrocarbon in a rich fuel mixture causes incomplete combustion; thus, lowering the exhaust temperature to a point where the concentration of NO_x decreases, but the concentration of CO increases. Combustion of a lean fuel mixture occurs at higher temperatures accompanied by higher concentration of NO_x but a lower concentration of CO.

An engine can operate manually at the crossover point; however, the engine must be tuned frequently to account for operational changes such as varying engine load, operating temperature, fuel gas quality, etc.

E. No Additional Controls

This practice would consist of operating the natural gas compressor engines without any add-on pollution control equipment.

NO_x

A. Selective Catalytic Reduction Unit

Selective Catalytic Reduction (SCR) is a post combustion technology that has been shown to be effective in reducing NO_x emissions from lean burn engines. SCR units can achieve NO_x control efficiencies as high as 90% for lean burn engines that are operated at a constant load. An SCR unit selectively reduces NO_x emissions by injecting either liquid anhydrous ammonia or aqueous ammonium hydroxide into the exhaust gas stream prior to the gas stream reaching the catalyst. The catalyst is typically made from noble metals, base metal oxides such as vanadium and titanium, and zeolite-based material. NO_x, NH₃, and O₂ react on the surface of the catalyst to form N₂ and H₂O. For an SCR unit to operate properly, the exhaust gas must be within a particular temperature range (typically between 450°F and 850°F). The catalyst that is utilized dictates the temperature range. Exhaust gas temperatures greater than the upper limit will pass the NO_x and NH₃ through the catalyst prior to the reaction. NH₃ emissions, called ammonia slip, are a key consideration when specifying an SCR unit.

B. No Additional Controls

This practice would consist of operating the natural gas compressor engines without any add-on pollution control equipment.

VOC

No Additional Controls

This practice would consist of operating the natural gas compressor engines without any add-on pollution control equipment.

Step 2: Eliminate Technically Infeasible Options

In the second step, the technical feasibility of the control options identified in the first step is evaluated with respect to the source-specific factors. A demonstration of technical infeasibility should be clearly documented and shown, based on physical, chemical, and/or engineering principles. If options are eliminated in this step, the analysis should show technical difficulties would preclude the successful use of the control options on the emissions unit under review. Technically infeasible control options may then be eliminated from further consideration. The following criteria are considered in determining technical feasibility: previous commercial scale demonstrations, precedents based on previous permits, and technology transfer from similar sources.

CO

- A. Lean-Burn Engine with an AFR Controller
- B. AFR Controller (NO_x Control at the Crossover Point)

Lean-Burn Engine with an AFR Controller and AFR Controller (NO_x Control at the Crossover Point) were eliminated as a technically infeasible option because an AFR Controller is not equipment currently available for the Waukesha F-18 engines proposed in this permitting action.

- C. No Additional Controls

No additional controls were eliminated as a technically infeasible option because no additional control is technically inferior to all of the other control technologies being considered.

NO_x

SCR Unit

An SCR unit can also be utilized to effectively reduce NO_x emissions; however, for engines that typically operate at variable loads, such as engines utilized for natural gas transmission, an SCR unit may not function effectively and may cause either periods of ammonia slip or periods of insufficient ammonia injection. Because SCR units are not used on engines that operate at variable loads (such as natural gas compressor engines), the Department determined that a lean burn engine with an SCR unit was determined to be a technically infeasible option.

Step 3: Rank Remaining Technologies by Control Effectiveness

The third step is an assessment and documentation of the emissions limit achievable with each technically feasible alternative. Available control technology options deemed technically feasible from Step 2 are ranked in order of pollutant removal effectiveness. The control option that results in the highest pollution removal value is considered the top control alternative.

CO

Compressor Engine CO BACT Control		
Rank	Control Technology	Reduction (%)
1	Lean-Burn Engine with Catalytic Oxidation	70-90
2	Lean-Burn Engine	NA

NO_x

Compressor Engine NO _x BACT Control		
Rank	Control Technology	Reduction (%)
1	Lean-Burn Engine	NA

VOC

Compressor Engine VOC BACT Control		
Rank	Control Technology	Reduction (%)
1	Lean-Burn Engine	NA

Step 4 - Evaluate Most Effective Controls and Document Results

After the identification of available and technically feasible control technology options, the energy, environmental, and economic impacts are considered. To reject the top alternative, it must be demonstrated that this control alternative is infeasible based on the impacts analysis results. If a control technology is determined to be technically infeasible or infeasible based on high cost effectiveness, or to cause adverse energy or environmental impacts, the control technology is rejected and the impacts analysis is performed on the next most stringent control alternative. This process continues until the technology under consideration cannot be eliminated by any source-specific environmental, energy, or economic impacts which demonstrate that alternative to be inappropriate as BACT.

Step 5: Select BACT

The most effective control option not eliminated in step four is proposed as BACT for the pollutant and emission unit under review.

CO

Lean-burn engine technology with catalytic oxidation catalyst is considered the most effective control of CO from Waukesha F18GL gas-fired compressor engines, BCPL proposed to utilize lean-burn engines with oxidation catalysts.

The Department determined that an emission limit of 0.5 grams per brake horsepower hour (g/bhp-hr) constitutes BACT for CO emissions resulting from the operation of the proposed natural gas compressor engines. In addition, the Department determined that a lean-burn engine with an oxidation catalyst is necessary to meet the BACT limit. A catalytic oxidation catalyst effectively reduces CO emissions and is an economically and environmentally feasible option.

NO_x

The Department determined that an emission limit of 1.0 g/bhp-hr constitutes BACT for NO_x emissions resulting from the operation of the proposed natural gas compressor engines.

Because the compressor engines proposed in this permitting action can achieve the BACT emission limits with no additional controls, BCPL's proposal to use lean-burn technology and to utilize good combustion practices and engineering design effectively reduces NO_x emissions and are economically and environmentally feasible options.

VOC

The Department determined that an emission limit of 0.5 g/bhp-hr constitutes BACT for VOC emissions resulting from the operation of the proposed natural gas compressor engines.

Because the compressor engines proposed in this permitting action can achieve the BACT emission limits with no additional controls, BCPL's proposal to use lean-burn technology and to utilize good combustion practices and engineering design effectively reduces VOC emissions and are economically and environmentally feasible options.

The control options selected have controls and control costs comparable to other recently permitted similar sources and are capable of achieving the BACT emission limits.

IV. Emission Inventory

Source	Ton/year					
	PM ₁₀	NO _x	VOC	CO	SO _x	HCHO
400-hp Compressor Engine (EU1)	0.00	3.86	1.93	1.93	0.01	0.79
400-hp Compressor Engine (EU2)	0.00	3.86	1.93	1.93	0.01	0.79
400-hp Compressor Engine (EU3)	0.00	3.86	1.93	1.93	0.01	0.79
400-hp Compressor Engine (EU4)	0.00	3.86	1.93	1.93	0.01	0.79
400-hp Compressor Engine (EU5)	0.00	3.86	1.93	1.93	0.01	0.79
400-hp Compressor Engine (EU6)	0.00	3.86	1.93	1.93	0.01	0.79
2.21 MMBtu/hr Heater (EU7)	0.07	0.97	0.05	0.81	0.01	0.00
Total	0.07	24.13	11.63	12.39	0.07	4.74

400-hp Compressor Engines (6 Engines EU1-EU6)

Brake Horsepower: 2,090 bhp

Hours of operation: 8760 hr/yr

PM₁₀ Emissions

Emission Factor: 7.71E-05 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)

Fuel Consumption: 3.40 MMBtu/hr (Maximum Design)

Calculations: 3.40 MMBtu/hr * 7.71E-05 lb/MMBtu = 0.003 lb/hr
0.003 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.0012 ton/yr

NO_x Emissions

Emission factor: 1.00 gram/bhp-hour (BACT Determination)

Calculations: 1.00 gram/bhp-hour * 400 bhp * 0.002205 lb/gram = 0.88 lb/hr
0.88 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 3.86 ton/yr

VOC Emissions

Emission factor: 0.50 gram/bhp-hour (Company Information)

Calculations: 0.50 gram/bhp-hour * 400 bhp * 0.002205 lb/gram = 0.44 lb/hr
0.44 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 1.93 ton/yr

CO Emissions

Emission factor: 0.50 gram/bhp-hour (BACT Determination)
Calculations: 0.50 gram/bhp-hour * 400 bhp * 0.002205 lb/gram = 0.44 lb/hr
0.44 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 1.93 ton/yr

SO₂ Emission

Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)
Fuel Consumption: 3.40 MMBtu/hr (Maximum Design)
Calculations: 3.40 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.002 lb/hr
0.002 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.0088 ton/yr

HCOH Emissions

Emission factor: 0.18 lb/hour (Company Information)
Calculations: 0.18 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.79 ton/yr

Less than 2.21 MMBtu/hr Heater (EU7)

Heat Output: 2.21 MMBtu/hr (Maximum Design)
Hours of Operation: 8760 hr/yr
Fuel Heating Value: 0.001 MMScf/MMBtu
Fuel Consumption: 2.21 MMBtu/hr * 0.001 MMScf/MMBtu * 8760 hr/yr = 19.36 MMScf/yr

PM₁₀ Emissions

Emission Factor: 7.60 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)
Calculations: 7.60 lb/MMScf * 19.36 MMScf/yr * 0.0005 ton/lb = 0.074 ton/yr

NO_x Emissions

Emission factor: 100.00 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)
Calculations: 100.00 lb/MMScf * 19.36 MMScf/yr * 0.0005 ton/lb = 0.97 ton/yr

VOC Emissions

Emission factor: 5.50 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)
Calculations: 5.50 lb/MMScf * 19.36 MMScf/yr * 0.0005 ton/lb = 0.05 ton/yr

CO Emissions

Emission factor: 84.00 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)
Calculations: 84.00 lb/MMScf * 19.36 MMScf/yr * 0.0005 ton/lb = 0.81 ton/yr

SO₂ Emission

Emission factor: 0.60 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)
Calculations: 0.60 lb/MMScf * 19.36 MMScf/yr * 0.0005 ton/lb = 0.006 ton/yr

HCOH Emission

Emission factor: 0.075 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)
Calculations: 0.075 lb/MMScf * 19.36 MMScf/yr * 0.0005 ton/lb = 0.0007 ton/yr

V. Existing Air Quality

The BCPL Seven Brothers 35 Battery Compressor Station is located in Section 35, Township 9 South, Range 40 East, in Big Horn County, Montana. Big Horn County is unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants.

VI. Ambient Air Impact Analysis

The Department determined, based on ambient air quality modeling, that the impact 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.

Aspen Consulting & Engineering (Aspen) conducted air quality modeling for the proposed BCPL Seven Brothers 35 Battery Compressor Station as part of the BCPL air quality permit application. The Department conducted modeling at the request of the Bureau of Land Management that included

the sources at the Seven Brothers 35 Battery Compressor Station, for the Badger Hills Development. The modeling was done to demonstrate compliance with the Montana Ambient Air Quality Standards (MAAQS). In addition, although a New Source Review (NSR) - Prevention of Significant Deterioration (PSD) increment analysis was not required for this permitting action, the Department requested that permittees of coal bed methane natural gas compressor stations model for PSD increments for NO_x; therefore, a PSD increment analysis was conducted.

The EPA approved Industrial Source Complex (ISC3) model and 6 years of meteorological data (1984 and 1987 through 1990) were utilized for the air quality model. The surface data was collected at the Sheridan County Airport in Sheridan, Wyoming, and the upper air data was collected at the Lander Hunt Field, Wyoming site. The receptor grid elevations were derived from digital elevation model (DEM) files using the United States Geological Survey (USGS) 7.5-minute series (1:24,000 scale) digitized topographic maps. The Decker, Holmes Ranch, and Pearl School Montana quadrangles and Acme, Bar N Draw, and Cedar Wyoming quadrangles were used to determine the receptor grid. The receptors were placed along the fence line at 50-meter (m) intervals, from the fence line to 1 kilometer (km) beyond the fence line at 100-m intervals, from 1 km beyond the fence line to 3 km beyond the fence line at 250-m intervals, and from 3 km beyond the fence line to 10 km beyond the fence line at 500-m intervals. In addition, receptors were placed on the Northern Cheyenne Indian Reservation to determine compliance with the PSD Class I Increment. Building downwash was calculated using the EPA Building Profile Input Program (BPIP). The building corner coordinates and peak roof heights were provided by a BCPL plot plan submitted as part of the air quality permit application and were used to determine the appropriate direction-specific building dimension parameters to use for each emission source evaluated in the model.

Each NO_x emitting unit from BPCL's Seven Brothers 35 Battery as well as area NO_x sources in Montana and Wyoming were input into the air dispersion model. As show in Table 1 the modeled concentrations are well below the NAAQS/MAAQS. The Ambient Ratio Method and the Ozone Limiting Method were applied to the NO_x emissions to convert the modeled concentrations to NO₂ for comparison to the NAAQS/MAAQS. The model results for NO_x are summarized in Table 1.

Pollutant	Avg. Period	NO _x Modeled Conc. (µg/m ³)	OLM/arm Adjusted to NO ₂ (µg/m ³)	Background Conc. (µg/m ³)	Ambient Conc. (µg/m ³)	NAAQS (µg/m ³)	MAAQS (µg/m ³)	% of NAAQS/MAAQS
NO ₂	1-hr	706.9	408.5	75	408.5	-----	564	72.4
	Annual	28.4	27.3	6	33.33	100	94	33.3/35.4

^a Concentration calculated using OLM

^b Applying ARM with national default of 75%

^c These results are cumulative for the Badger Hills Development; Impacts from Seven Brothers 35 Battery alone is lower

Although a PSD increment analysis was not required by the ARM, due to the high projected development of coal bed methane in Montana, the Department required that BCPL demonstrate compliance with PSD increments for NO_x. Therefore, a Class II increment analysis was conducted for the region. The modeling demonstrated compliance with the Class II increments. The regional Class II modeling results are summarized in Table 2.

Pollutant	Avg. Period	Class II Modeled Conc. (µg/m ³)	Class II Increment (µg/m ³)	% Class II Increment Consumed
NO _x	Annual ^a	21.3	25	85.2

^a Applying ARM with national default of 75%

^b These results are cumulative for the Badger Hills Development; Impacts from Seven Brothers 35 Battery alone is lower

In summary, modeling was conducted to determine compliance with the MAAQS and the NAAQS, and the NO_x PSD increments. The modeling results demonstrated that neither the MAAQS nor the NAAQS would be violated. In addition, the PSD increment analysis for NO_x demonstrated that the Class II NO_x increment would not be exceeded.

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

An environmental assessment (EA), required by the Montana Environmental Policy Act, was completed for this project. The EA assesses the impacts specific to the proposed BCPL Seven Brothers Battery 35 Compressor Station and a copy is attached to this analysis of Permit #3297-00. Further, a programmatic environmental impact statement (EIS) was prepared for coal bed methane development in Montana, including the Powder River and Billings resource management plan areas. The EIS assesses the impacts of coal bed methane development from a broad planning perspective. A copy of the final environmental impact statement can be obtained on the Department's web site.

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

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Bitter Creek Pipelines, LLC
Seven Brothers 35 Battery Compressor Station
P.O. Box 131
Glendive, MT 59330

Air Quality Permit number: 3297-00

Preliminary Determination Issued: February 4, 2004

Department Decision Issued: February 20, 2004

Permit Final: March 9, 2004

1. *Legal Description of Site:* The Seven Brothers 35 Battery facility would be located in Big Horn County, Montana, approximately 3 miles east of the town of Decker. The legal description would be Section 35, Township 9 South, Range 40 East.
2. *Description of Project:* BCPL proposes to construct and operate four additional natural gas compressor engines at a facility that previously did not require a Montana Air Quality Permit. The facility consists of two 400-horsepower (hp) natural gas fired compressor engines and Bitter Creek Pipelines, LLC (BCPL) proposes to add four more 400-hp compressor engines and one 2.21-million British thermal unit per hour (MMBtu/hr) heater, and associated equipment. The facility is currently a compressor station that receives natural gas and compresses the natural gas for transmission through the pipeline. The addition of the new compressor engines would increase the amount of natural gas compressed.
3. *Objectives of Project:* The proposed project would provide additional business and revenue for BCPL by allowing the company to gather and sell larger quantities of natural gas. Natural gas would be received and the Seven Brothers 35 Battery facility would compress the gas for transmission through a natural gas pipeline.
4. *Alternatives Considered:* In addition to the proposed action, the Department also considered the “no-action” alternative. The “no-action” alternative would deny issuance of the Air Quality Preconstruction Permit to the proposed facility. However, the Department does not consider the “no-action” alternative to be appropriate because BCPL demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the “no-action” alternative was eliminated from further consideration.
5. *A Listing of Mitigation, Stipulations, and Other Controls:* A list of enforceable conditions, including a BACT analysis, would be included in Permit #3297-00.
6. *Regulatory Effects on Private Property:* The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

7. *Coal Bed Methane Programmatic Environmental Impact Statement:* The Bureau of Land Management (BLM), the Department, and the Montana Board of Oil and Gas Conservation (MBOGC) prepared a statewide Environmental Impact Statement (EIS) for coal bed methane development in Montana. The purpose of the EIS was to analyze potential impacts from projected oil and gas activities, particularly from coal bed methane exploration, production, development, and reclamation activities from a broad planning perspective. The planning area (analysis area) was statewide with emphasis placed on the Powder River and Billings Resource Management Plans (RMP), as well as, Blaine, Gallatin, and Park Counties. The BLM, the Department, and the MBOGC were joint lead agencies responsible for preparing the EIS. The lead agencies consulted with the United States Fish and Wildlife Service (USFWS), the Montana Bureau of Mines and Geology (MBMG), the Montana Department of Fish, Wildlife, and Parks (MFWP), the Montana Department of Natural Resources and Conservation (DNRC), the Montana State Historic Preservation Office (MSHPO), the Crow Tribe of Indians, the Northern Cheyenne Tribe, and the Lower Brule Sioux Tribe while preparing the EIS. The final EIS was issued in January 2003, and is available on the Department's web site at <http://www.deq.state.mt.us/CoalBedMethane/index.asp>. This EA assesses the impacts specific to the proposed BCPL Seven Brothers 35 Battery Compressor Station Facility.
8. The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The "no-action" alternative was discussed previously.

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

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

A. Terrestrial and Aquatic Life and Habitats

Minor impacts on terrestrial or aquatic life and habitats would be expected from the proposed project because deer, antelope, coyotes, geese, ducks, and other terrestrials would potentially use the area around the facility and because the facility would be a source of air pollutants. The facility would emit air pollutants and corresponding deposition of pollutants would occur. However, as described in Section 7.F. of this EA, the Department determined, based on ambient air quality modeling, that any impacts from deposition would be minor. In addition, minor land disturbance would occur to construct the facility. Any impacts on terrestrial and

aquatic life and habitats from facility construction would be minor due to the relatively small size of the project. Overall, any impacts to terrestrial and aquatic life and habitats would be minor.

B. Water Quality, Quantity, and Distribution

Minor impacts would be expected on water quality, quantity, and distribution from the proposed project because the facility would be a minor source of air pollutants. The facility would emit air pollutants and corresponding deposition of pollutants would occur, however, as described in Section 7.F. of this EA, the Department determined that the chance of deposition of pollutants impacting water quality, quantity, and distribution would be minor. However, minor amounts of water may be required to control fugitive dust emissions from the access roads and the general facility property. In addition, the facility would emit air pollutants and corresponding deposition of pollutants would occur; however, as described in Section 7.F. of this EA, the Department determined, based on ambient air quality modeling, that the chance of deposition of pollutants impacting water quality, quantity, and distribution would be minor.

Water quality, quantity, and distribution would not be impacted from constructing the facility because there is no surface water at, or relatively close to, the site. Furthermore, no discharges into surface water would occur, and no use of surface water would be expected for facility construction. Therefore, no impacts to water quality, quantity, and distribution would be expected from facility construction. Overall, any impacts to water quality, quantity, and distribution would be minor.

C. Geology and Soil Quality, Stability, and Moisture

Minor impacts would occur on the geology and soil quality, stability, and moisture from the proposed project because minor construction would be required to develop the facility. Footings would be constructed, small buildings would be constructed, natural gas pipelines would be installed, and an access road would be developed. In addition, no discharges, other than air emissions, would occur at the facility. Any impacts to the geology and soil quality, stability, and moisture from facility construction would be minor due to the relatively small size of the project.

Deposition of pollutants would occur; however, as described in Section 7.F of this EA, the Department determined, based on ambient air quality modeling, that the chance of deposition of pollutants impacting the geology and soil in the areas surrounding the site would be minor. Overall, any impacts to the geology and soil quality, stability, and moisture would be minor.

D. Vegetation Cover, Quantity, and Quality

Minor impacts would occur on vegetation cover, quantity, and quality because minor construction would be required to develop the facility. Small buildings would be constructed, natural gas pipelines would be installed, and an access road would be developed.

In addition, no discharges, other than air emissions, would occur at the facility. Any impacts to the vegetation cover, quantity, and quality from facility construction would be minor due to the relatively small size of the project.

The facility would be a source of air pollutants, and corresponding deposition of pollutants would occur; however, as described in Section 7.F of this EA, the Department determined, based on ambient air quality modeling, that the chance of deposition of pollutants impacting the vegetation in the area surrounding the site would be minor. Overall, any impacts to vegetation cover, quantity, and quality would be minor.

E. Aesthetics

Minor aesthetic impacts would result because the facility would be expanding from two engines to six. Small buildings would be constructed to house the new engines, natural gas pipelines would be installed, and an access road would be developed. In addition, the project would create additional noise in the area. However, the buildings constructed to house the engines would minimize the additional noise. Overall, any aesthetic impacts would be minor.

F. Air Quality

The air quality of the area would realize minor impacts from the proposed project because the facility would emit the following air pollutants: PM₁₀, NO_x, CO, VOC, and SO_x. Deposition of these pollutants may occur. However, the Department determined that any air quality impacts from deposition would be minor due to dispersion characteristics of pollutants (stack height, stack temperature, etc.), the surrounding atmosphere (wind speed, wind direction, ambient temperature, etc.), and conditions placed in Permit #3297-00. Conditions would include, but would not be limited to BACT emission limits for NO_x of 1.00 grams per brake horsepower-hour (g/bhp-hr), for CO of 0.50 g/bhp-hr, and for VOC of 0.50 g/bhp-hr

Air quality modeling was conducted for the proposed facility as part of the BCPL air quality permit application. The modeling was done to demonstrate compliance with the Montana and National Ambient Air Quality Standards (MAAQS/NAAQS). In addition, although a New Source Review - Prevention of Significant Deterioration of Air Quality (PSD) increment analysis was not required for this permitting action, the Department requested that permittees of coal bed methane natural gas compressor stations model for PSD increments for NO_x; therefore, a Class I/Class II increment analysis was conducted. The modeling demonstrated compliance with the Class I and Class II increments. Therefore, any impacts to air quality from the proposed facility would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

In an effort to identify any unique endangered, fragile, or limited environmental resources in the area, the Department contacted the Montana Natural Heritage Program, Natural Resource Information System (NRIS). The NRIS search identified *Haliaeetus Leucocephalus* (Bald Eagle) and *Trionyx Spiniferus* (Spiny Softshell), as species of special concern in the area of the proposed facility. In this case, the area was defined by the section, township, and range of the proposed location with an additional 1-mile buffer zone. Due to the minor amounts of construction that would be required and the relatively low levels of pollutants that would be emitted, the Department determined that it would be unlikely that the proposed project would impact any species of special concern and that any potential impacts would be minor.

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

The proposed project would have minor impacts on the demands for the environmental resources of air and water because the facility would be a source of air pollutants. Deposition of pollutants would occur as a result of operating the facility; however, as explained in Section 7.F of this EA, the Department determined that any impacts on air and water resources from the pollutants (including deposition) would be minor.

The proposed project would be expected to have minor impacts on the demand for the environmental resource of energy because power would be required at the site and water because it may be required for dust suppression. The impact on the demand for the

environmental resource of energy would be minor because the facility would be relatively small by industrial standards. Overall, the impacts for the demands on the environmental resources of water, air, and energy would be minor.

I. Historical and Archaeological Sites

In an effort to identify any historical and archaeological sites located near the proposed project area, the Department contacted the Montana Historical Society, State Historic Preservation Office (SHPO). According to SHPO records, there are not any previously recorded historic or archaeological sites within the proposed area. However, SHPO stated that the absence of cultural properties in the area does not mean that they do not exist, but may reflect a lack of previous cultural resource inventories in the area because SHPO records indicate only one previous cultural resource inventory has been conducted. The Department determined that the chance of the project impacting any historical and archaeological sites in the area would be minor due to the relatively small size of the project and the fact that the new engines are being placed at an existing site with compressor engines currently in operation.

J. Cumulative and Secondary Impacts

The cumulative and secondary impacts from this project on the physical and biological aspects of the human environment in the immediate area would be minor due to the relatively small size of the project. Only small amounts of construction and land disturbance would be required to complete the project. Noise impacts would be minor due to the relatively small size of the facility and the fact that the engines would be housed within buildings. There is potential for other operations to locate near the site that the facility would use. However, any operations would have to apply for and receive the appropriate permits from the Department prior to operation. These permits would address the environmental impacts associated with the operations at the proposed site. Further, as stated in Section 7 of this EA, a statewide EIS was completed to analyze potential impacts from coal bed methane exploration, production, development, and reclamation activities from a broad planning perspective. Overall, the Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in Permit #3297-00 and any impacts to the physical and biological environment would be minor.

9. The following table summarizes the potential economic and social effects of the proposed project on the human environment. The “no-action” alternative was discussed previously.

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

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

- A. Social Structures and Mores
- B. Cultural Uniqueness and Diversity

The proposed project would cause minor, if any, impacts to native or traditional lifestyles or communities (social structures or mores), and cultural uniqueness and diversity in the area because the proposed project would take place in a relatively remote location and the facility would be relatively small by industrial standards. The nearest home not associated with the project would be approximately 3 miles east of the facility. Additional activity (vehicle traffic, construction equipment, etc.) would be noticeable during facility construction; however, compressor stations typically do not require day-to-day employees and once the facility is constructed, activities associated with the operation of the facility would be minor. Overall, any impacts to the social structures and mores, and cultural uniqueness and diversity in the area would be minor.

- C. Local and State Tax Base and Tax Revenue

The proposed project would result in only minor impacts to the local and state tax base and tax revenue because only 2 new employees would be hired as a result of operating the facility. In addition, only minor amounts of construction would be needed to complete the project; therefore, any construction related jobs would be temporary and the impacts from the construction jobs would be temporary.

- D. Agricultural or Industrial Production

The land at the proposed location is rural agricultural grazing land. Because the facility would be relatively small, the proposed project would result in only a minor disturbance to a relatively small amount of rural agricultural grazing land. The proposed project would have minor impacts to industrial production because the proposed project would be an expansion of an existing industrial

source locating in the proposed area. The facility would emit air pollutants and corresponding deposition of pollutants would occur; however, as Section 7.F of this EA explains, the Department determined, based on ambient air quality modeling, that the chance of deposition of pollutants impacting agricultural or industrial production in the area surrounding the site would be minor. Overall, any impacts to agricultural or industrial production would be minor.

E. Human Health

The proposed project would result in only minor, if any, impacts to human health. As explained in Section 7.F of this EA, deposition of pollutants would occur; however, the Department determined that the proposed project would comply with all applicable air quality rules, regulations, and standards. These rules, regulations, and standards are designed to be protective of human health.

F. Access to and Quality of Recreational and Wilderness Activities

The proposed project would have minor, if any, impacts on access to recreational and wilderness activities because of the relatively remote location and the relatively small size of the facility. The proposed project would have minor impacts on the quality of recreational and wilderness activities in the area because the facility, while relatively small by industrial standards, would be visible and produce noise.

G. Quantity and Distribution of Employment

The proposed project would have minor, if any, impacts on the quantity and distribution of employment because 2 new permanent employees would be hired as a result of the proposed project. Current BCPL employees would be responsible for the day-to-day operation of the facility. In addition, temporary construction-related positions may result from this project but any impacts to the quantity and distribution of employment from construction related employment would be minor due to the relatively small size of the facility and the corresponding relatively short time period that would be associated with constructing the facility.

H. Distribution of Population

The proposed project would have minor, if any, impacts on the distribution of population in the area because the facility would be located in a relatively remote location and the proposed project would create 2 new permanent jobs. Therefore, no people would be moving to the area for employment opportunities.

I. Demands for Government Services

There would be minor impacts on the demands for government services because additional time would be required by government agencies to issue Permit #3297-00 and to assure compliance with applicable rules, standards, and Permit #3297-00. In addition, there would be minor impacts on the demands for government services to regulate the increase in vehicle traffic that would be associated with constructing and operating the facility. The increase in vehicle traffic would be primarily during facility construction because compressor stations typically do not require day-to-day employees. Vehicle traffic during construction would be minor due to the relatively short time period that would be required to construct the facility. Overall, any demands for government services to regulate the facility or activities associated with the facility would be minor due to the relatively small size of the facility.

J. Industrial and Commercial Activity

The proposed project may represent a minor increase in the industrial activity in the area during construction of the project, but no additional industrial or commercial activity would result solely from the operation of the facility. Any impacts to industrial and commercial activities in the area would be minor.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans and goals that would be affected by issuing Permit # 3297-00. The state standards would protect the proposed site and the environment surrounding the site.

L. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from this project would result in minor impacts to the economic and social aspects of the human environment in the immediate area. Due to the relatively small size of the project, changes to the industrial production, employment, and tax revenue (etc.) changes resulting from the proposed project would be minor.

Additional facilities would likely locate in the area to withdraw the methane from the coal beds and supply BCPL with gas to be compressed for transmission through a natural gas pipeline. However, any future facility would be required to apply for and receive the appropriate permits from the appropriate regulating authority. Impacts from any future facilities would be assessed through the appropriate permitting process. Further, as stated in Section 7 of this EA, a statewide EIS was completed to analyze potential impacts from coal bed methane exploration, production, development, and reclamation activities from a broad planning perspective.

Recommendation: No EIS is required.

The current permitting action is for the construction and operation of a natural gas compressor station. Permit #3297-00 includes conditions and limitations to ensure the facility will operate in compliance with all applicable rules and regulations. In addition, there are no significant impacts associated with this proposal.

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

Individuals or groups contributing to this EA: Department of Environmental Quality – Air Resources Management Bureau, Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

EA prepared by: Chris Ames

Date: 1/20/04