AIR QUALITY PERMIT

Issued To:	Bitter Creek Pipelines, LLC Deer Creek Central - Rancholme 14 Complex P.O. Box 131 Glendive, MT 59330	Permit: #3383-00 Application Complete: 06/02/05 Preliminary Determination Issued: 06/24/05 Department's Decision Issued: 07/12/05 Permit Final: 07/28/05 AFS #: 003-0028

An air quality permit, with conditions, is hereby granted to Bitter Creek Pipelines, LLC (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 #3383-00 is issued to BCPL for the construction and operation of the Deer Creek Central - Rancholme 14 Complex. The facility is a coal bed methane natural gas field/central 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 nine miles northeast of Decker, Montana, in the NW¼ of Section 14, Township 9 South, Range 41 East, in Big Horn County, Montana.

SECTION II: Conditions and Limitations

A. Emission Limitations

1. BCPL shall not operate more than five compressor engines at any one time at the Deer Creek Central - Rancholme 14 Complex (ARM 17.8.749).

2. Compressor engines #1, #2, and #3 (Rancholme 14 Battery), shall not exceed a combined maximum rated design capacity of 1266-horsepower (hp) and the maximum rated design capacity of each individual compressor engine shall not exceed 860-hp. Compressor engines #1, #2, and #3, shall be one of the following compressor engines: lean-burn Ajax 2802LE; rich-burn Caterpillar 3408TA; lean-burn Waukesha F18GL; lean-burn Caterpillar 3508 LE; rich-burn Waukesha 3524GSI; and lean-burn Caterpillar 3512LE (ARM 17.8.749).

3. Compressor engines #4 and #5 (Deer Creek Central Station) shall not exceed individual maximum rated design capacities of 1,775-hp. Compressor engines #4 and #5 shall be one of the following compressor engines: lean-burn Caterpillar 3520B; rich-burn Waukesha 7044GSI; or lean-burn Caterpillar 3606 (ARM 17.8.749).

4. The pound per hour (lb/hr) emission limits for each of the 316-hp Ajax 2802LE shall be (ARM 17.8.752):

NO_X	0.70 lb/hr
CO	1.46 lb/hr
VOC	0.70 lb/hr

5. The 400-hp Waukesha F18GL shall be controlled with an oxidation catalyst. The lb/hr emission limits for each of the 400-hp Waukesha F18GL shall be (ARM 17.8.752):

NO_X	0.88 lb/hr
CO	0.44 lb/hr
VOC	0.88 lb/hr

6. The 1,675-hp Caterpillar 3520B shall be controlled with an oxidation catalyst and an air-to-fuel ratio (AFR) controller. The lb/hr emission limits for each of the 1,675-hp Caterpillar 3520B shall be (ARM 17.8.752):

NO_X	3.69 lb/hr
CO	1.85 lb/hr
VOC	3.69 lb/hr

7. The 1,775-hp Caterpillar 3606 shall be controlled with an oxidation catalyst and an AFR controller. The lb/hr emission limits for each of the 1,775-hp Caterpillar 3606 shall be (ARM 17.8.752):

NO_X	3.91 lb/hr
CO	1.96 lb/hr
VOC	3.91 lb/hr

8. The 633-hp Caterpillar 3508LE shall be controlled with an oxidation catalyst and an AFR controller. The lb/hr emission limits for each of the 633-hp Caterpillar 3508LE shall be (ARM 17.8.752):

NO_X	2.79 lb/hr
CO	0.70 lb/hr
VOC	1.40 lb/hr

9. The 860-hp Caterpillar 3512LE shall be controlled with an oxidation catalyst and an AFR controller. The lb/hr emission limits for each of the 860-hp Caterpillar 3512LE shall not exceed the following (ARM 17.8.752):

NO_X	2.85 lb/hr
CO	0.94 lb/hr
VOC	1.90 lb/hr

10. The 400-hp Caterpillar G3408TA shall be controlled with a non-selective catalytic reduction (NSCR) unit and an AFR controller. The lb/hr emission limits for each of the 400-hp Caterpillar 3408TA shall not exceed the following (ARM 17.8.752):

NO_X	0.88 lb/hr
CO	1.76 lb/hr
VOC	0.88 lb/hr

11. The 840-hp Waukesha 3524GSI shall be controlled with an NSCR and an AFR controller. The lb/hr emission limits for each of the 840-hp Waukesha 3524GSI shall not exceed the following (ARM 17.8.752):

NO_X	1.85 lb/hr
CO	3.70 lb/hr
VOC	1.85 lb/hr

12. The 1,680-hp Waukesha 7044GSI shall be controlled with a non-selective catalytic reduction (NSCR) unit and an AFR controller. The lb/hr emission limits for each of the 1,680-hp Waukesha 7044GSI shall not exceed the following (ARM 17.8.752):

NO_X	3.70 lb/hr
CO	7.41 lb/hr
VOC	3.70 lb/hr

13. 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 six consecutive minutes (ARM 17.8.304).

14. 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).

15. 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.14 (ARM 17.8.749).

B. Testing Requirements

1. Ajax 2802LE compressor engine(s) shall be initially tested for nitrogen oxides (NO_X) and carbon monoxide (CO), concurrently, to demonstrate compliance with the emission limits contained in Section II.A.4. The initial source testing shall be conducted within 180 days of the initial start up date of the compressor engine(s). 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 of Environmental Quality (Department) (ARM 17.8.105 and ARM 17.8.749).

2. Waukesha F18GL compressor engine(s) shall be initially tested for NO_X and CO, concurrently, to demonstrate compliance with the emission limits contained in Section II.A.5. The initial source testing shall be conducted within 180 days of the initial start up date of the compressor engine(s). 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).

3. Caterpillar 3520B compressor engine(s) shall be initially tested for NO_X and CO, concurrently, to demonstrate compliance with the emission limits contained in Section II.A.6. The initial source testing shall be conducted within 180 days of the initial start up date of the compressor engine(s). 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).

4. Caterpillar 3606 compressor engine(s) shall be initially tested for NO_X and CO, concurrently, to demonstrate compliance with the emission limits contained in Section II.A.7. The initial source testing shall be conducted within 180 days of the initial start up date of the compressor engine(s). 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).

5. Caterpillar 3508LE compressor engine(s) shall be initially tested for NO_X and CO, concurrently, to demonstrate compliance with the emission limits contained in Section II.A.8. The initial source testing shall be conducted within 180 days of the initial start up date of the compressor engine(s). 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).

6. Caterpillar 3512LE compressor engine(s) shall be initially tested for NO_X and CO, concurrently, to demonstrate compliance with the emission limits contained in Section II.A.9. The initial source testing shall be conducted within 180 days of the initial start up date of the compressor engine(s). 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).

7. Caterpillar G3408TA compressor engines shall be initially tested for NO_X and CO, concurrently, to demonstrate compliance with the emission limits contained in Section II.A.10. The initial source testing shall be conducted within 180 days of the initial start up date of the compressor engine. 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).

8. Waukesha 3524GSI compressor engine(s) shall be initially tested for NO_X and CO, concurrently, to demonstrate compliance with the emission limits contained in Section II.A.11. The initial source testing shall be conducted within 180 days of the initial start up date of the compressor engine(s). 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).

9. Waukesha 7044GSI compressor engine(s) shall be initially tested for NO_X and CO, concurrently, to demonstrate compliance with the emission limits contained in Section II.A.12. The initial source testing shall be conducted within 180 days of the initial start up date of the compressor engine(s). 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).

10. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

11. 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 five 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

1. BCPL shall provide the Department with written notification of commencement of construction of the Deer Creek Central - Rancholme 14 Complex within 30 days after commencement of construction (ARM 17.8.749).

2. BCPL shall provide the Department with written notification of the actual start-up date of the compressor engines within 15 days after the actual start-up date(s) (ARM 17.8.749).

3. BCPL shall provide the Department with written notification of the engine models utilized within 15 days after the actual start-up date(s) (ARM 17.8.749).

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 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 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 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
Bitter Creek Pipelines, LLC
Deer Creek Central - Rancholme 14 Complex
Permit #3383-00

I. Introduction/Process Description

Bitter Creek Pipelines, LLC (BCPL) is permitted for the construction and operation of the Deer Creek Central - Rancholme 14 Complex. The facility is a coal bed methane natural gas field/central compressor station located approximately nine miles northeast of Decker, Montana, in the NW¼ of Section 14, Township 9 South, Range 41 East, in Big Horn County, Montana.

A. Permitted Equipment

The facility consists of not more than five compressor engines. Three of the five compressor engines shall not exceed a combined maximum rated design capacity of 1266-horsepower (hp) and the maximum rated design capacity of each individual engine shall not exceed 860-hp. These three compressor engines may include any combination of lean-burn 316-hp Ajax 2802LE compressor engines; rich-burn 400-hp Caterpillar 3408TA compressor engines; lean-burn 400-hp Waukesha F18GL compressor engines; lean-burn 633-hp Caterpillar 3508LE compressor engines; rich-burn 840-hp Waukesha 3524GSI compressor engines; and lean-burn 860-hp Caterpillar 3512LE compressor engines as long as the combined maximum rated design capacity of 1266-horsepower (hp) is not exceeded. This permit does not allow the use of other engine models.

Two of the five compressor engines shall not exceed individual maximum rated design capacities of 1,775-hp. These two compressor engines may include any combination of lean-burn 1,675-hp Caterpillar 3520B compressor engines, rich-burn 1,680-hp Waukesha 7044GSI compressor engines, and lean-burn 1,775-hp Caterpillar 3606 compressor engines. This permit does not allow the use of other engine models.

In addition to the compressor engines, the facility would also include two glycol dehydration units up to 1 million British thermal units per hour (MMBtu/hr) and miscellaneous support equipment and materials including, but not limited to, tanks, tank heaters, etc.

B. Source Description

The BCPL Deer Creek Central - Rancholme 14 Complex is a coal bed methane, natural gas field/central compressor station. Coal bed methane is a natural hydrocarbon gas, primarily methane, which occurs in beds of coal. Production field facilities withdraw the methane from the coal beds and send the methane to central compressor stations where the gas is dehydrated and compressed for further transportation to sales destinations through a natural gas pipeline. The Rancholme 14 portion of the complex is a field compression facility and the Deer Creek Central portion of the complex is a central compressor station. The two glycol dehydration units are used to remove moisture from the gas and the compressor engines are used to gather the field gas and boost pipeline pressure for transmitting the natural gas through the pipeline.

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 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 PM_{10}

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 six 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 utilize natural gas for operating its 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 Code of Federal Regulations (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.

   The Deer Creek Central - Rancholme 14 Complex is not an NSPS-affected source because it does not meet the definition of a natural gas processing plant defined in 40 CFR 60, Subpart KKK. In addition, 40 CFR 60, Subpart LLL is not applicable to the Rancholme 14 Complex because the facility does not utilize a sweetening unit to process sour gas.

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 (HAPs) 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 facility 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. Second, 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. Third, 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 three 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 facility is not subject to the provisions of 40 CFR 63, Subpart HHH because the facility is not a major source of HAPs.

40 CFR 63, Subpart ZZZZ National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines. Owners or operators of facilities that utilize reciprocating internal combustion engines and that are a major source of HAPs, as defined and applied in 40 CFR Part 63, shall comply with the standards and provisions of 40 CFR Part 63, Subpart ZZZZ. In order for a facility that utilizes a reciprocating internal combustion engine to be subject to 40 CFR Part 63, Subpart ZZZZ requirements, certain criteria must be met. The reciprocating internal combustion engines must have a maximum rated design capacity greater than 500-hp and the facility must be a major source of HAPs. Based on the information submitted by BCPL, the facility is not subject to the provisions of 40 CFR 63, Subpart ZZZZ because although the facility may utilize several reciprocating internal combustion engines with a maximum rated design capacity greater than 500-hp, the facility is not a major source of HAPs.

D. ARM 17.8, Subchapter 4 – Stack Height and Dispersion Techniques, including, but not limited to:

1. ARM 17.8.401 Definitions. This rule includes a list of definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.402 Requirements. BCPL must demonstrate compliance with the ambient air quality standards with a stack height that does not exceed Good Engineering Practices (GEP). The proposed heights of the new or altered stacks is below the allowable 65-meter GEP stack height.

E. 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 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.

F. 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. The BCPL Deer Creek Central - Rancholme 14 Complex has a PTE greater than 25 tons per year of oxides of nitrogen (NO_X), carbon monoxide (CO), and Volatile Organic Compounds (VOC); therefore, an air quality permit is required.

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

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

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration, or use of a source. 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 March 2, 2005, issue of the *Billings Gazette*, a newspaper of general circulation in the Town of Billings in Yellowstone 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 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.

G. 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).

H. 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 per year of any pollutant;

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

   c. PTE > 70 tons per year of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #3383-00 for BCPL, the following conclusions were made:

   a. The facility's PTE is less than 100 tons per year for any pollutant.

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

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

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

   e. This facility is not subject to any current NESHAP standards.

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

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

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

III. BACT Determination

A BACT determination is required for each new or altered source. 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 analysis was submitted by BCPL in Permit Application #3383-00, addressing some available methods of controlling emissions from the sources used at the Deer Creek Central - Rancholme 14 Complex. The Department reviewed these methods, as well as previous BACT determinations in order to make the following BACT determination.

A. Compressor Engines

1. NO_X BACT

As part of the NO_X BACT analyses, the following control technologies were reviewed:

- Lean-burn engine with a selective catalytic reduction (SCR) unit and an air to fuel ratio (AFR) controller;
- Lean-burn engine with a SCR unit;
- Lean-burn engine with an AFR controller;
- Lean-burn engine with a non-selective catalytic reduction (NSCR) unit and an AFR controller;
- Lean-burn engine with a NSCR unit;
- Lean-burn engine with no additional controls;
- 2-Stroke lean-burn engine with no additional controls (400-hp range engines only);
- Rich-burn engine with a NSCR unit and an AFR controller;
- Rich-burn engine with a NSCR unit;
- Rich-burn engine with an AFR controller;
- Rich-burn engine with a SCR and an AFR controller;
- Rich-burn engine with a SCR; and
- Rich-burn engine with no additional controls.

SCR applied to rich-burn engines is technically infeasible because the oxygen concentration from rich-burn engines is not high enough for a SCR to operate properly. NSCR on lean-burn engines is technically infeasible because the engine must burn a rich fuel mixture for the NSCR to properly operate. Adverse environmental impacts could occur with a SCR unit operating on lean-burn engines at variable loads as required by a typical compressor engine. SCR units are typically installed on process units that have a constant or low variability in load fluctuation. When engine load changes excess ammonia (ammonia slip) may pass through the system and out the stack or not enough ammonia will be injected. SCR units are technically infeasible because of the potential adverse environmental impacts from the typical load fluctuations that are required for compressor engines. SCR units have not been installed on lean-burn compressor engines in Montana.

Technically feasible control options, in order of the highest control efficiency to the lowest control efficiency, include:

400-hp Range Engines

Control Technology	% Control	NO_X Emission Rate (g/bhp-hr)
2-Stroke Lean-Burn Engine without Control	95.0	1.0
Lean-Burn Engine without Control	95.0	1.0
Rich-Burn Engine with NSCR and AFR or NSCR only	90.0	2.0
Rich-Burn Engine without Control or with only AFR	0.0	20.0

600 to 800-hp Range Engines

Control Technology	% Control	NO_X Emission Rate (g/bhp-hr)
Rich-Burn Engine with NSCR and/or AFR	95.0	1.0
Lean-Burn Engine with Catalytic Oxidizer and/or AFR	92.5	1.5
Lean-Burn Engine with Catalytic Oxidizer and/or AFR	90.0	2.0
Lean-Burn Engine without Control	90.0	2.0
Rich-Burn Engine without Control or with only AFR	--	20.0

1,600 to 1,800-hp Range Engines

Control Technology	% Control	NO_X Emission Rate (g/bhp-hr)
Lean-Burn Engine with Catalytic Oxidizer and/or AFR	96.5	0.7
Rich-Burn Engine with NSCR and/or AFR	95.0	1.0
Lean-Burn Engine with Catalytic Oxidizer and/or AFR	90.0	2.0
Lean-Burn Engine without Control	90.0	2.0
Rich-Burn Engine without Control or with only AFR	--	20.0

The control methods listed above are widely used; these control options cannot be eliminated solely based on environmental or energy impacts.

Lean-burn engines do emit relatively higher HAP (formaldehyde) emissions than rich-burn engines. Lean-burn engines cannot be eliminated based on higher formaldehyde emissions, but the higher formaldehyde emissions can affect the BACT determination. 600 to 800 hp range engines and 1,600 to 1,800-hp range engines without AFR control are removed from the analysis because AFR control would be required and is consistent with other recently permitted similar sources.

The table below shows the cost per ton of NO_X reduction achieved for the various control options.

400 hp Range Engines

Control Technology	Total Annual Cost ($)	Resulting NO_X Emissions (tpy)	Cost Effectiveness ($/ton)
Controlled Emissions			
2-Stroke Lean-Burn Engine without Control (316-hp)	--	3.1	0
Lean-Burn Engine without Control (400-hp)	--	3.9	0
Rich-Burn Engine with NSCR and AFR or NSCR only (400-hp)	50,840	3.9	693
Baseline Emissions			
2-Stroke Lean-Burn without Control (316-hp)	--	6.1	--
Lean-Burn Engine without Control (400-hp)	--	7.7	--
Rich-Burn Engine without Control or with only AFR (400-hp)	--	77.3	--

- **693 = 50,840 / (77.3-3.9)**

600-800-hp Range Engines

Control Technology	Total Annual Cost ($)	Resulting NO_X Emissions (tpy)	Cost Effectiveness ($/ton)
Controlled Emissions			
Lean-Burn Engine without control and with AFR (633-hp)	--	12.2	0
Rich-Burn Engine with NSCR and with AFR (840-hp)	81,298	16.2	557
Lean-Burn Engine without Control and with AFR (860-hp)	--	12.5	0
Baseline Emissions			
Lean-Burn Engine without Control and with AFR (633-hp)	--	12.2	--
Rich-Burn without Control and with AFR (840-hp)	--	162.3	--
Lean-Burn Engine without Control and with AFR (860-hp)	--	16.6	--

- **557 = 81,298 / (16.6-12.5)**

1,600 to 1,800-hp Range Engines

Control Technology	Total Annual Cost ($)	Resulting NO_X Emissions (tpy)	Cost Effectiveness ($/ton)
Controlled Emissions			
Lean-Burn Engine without control and with AFR (1,675-hp)	--	16.2	0
Rich-Burn Engine with NSCR and with AFR (1,680-hp)	135,060	16.2	438
Lean-Burn Engine without Control and with AFR (1,775-hp)	--	12.0	0
Baseline Emissions			
Lean-Burn Engine without Control and with AFR (1,675-hp)	--	32.4	--
Rich-Burn without Control and with AFR (1,680-hp)	--	324.5	--
Lean-Burn Engine without Control and with AFR (1,775-hp)	--	34.3	--

- **438 = 135,060 / (324.5-16.2)**

600-800-hp Engine Range Incremental Cost Effectiveness

Control Technology	Emission Limit (g/bhp-hr)	Incremental Annual Fuel and Maintenance Cost ($)	Resulting NO_X Emissions (tpy)	Incremental Cost Effectiveness ($/ton)
Caterpillar 3412LE 637-hp lean-burn	1.0	32,683	6.15	
Caterpillar G3508LE 633-hp lean-burn	2.0	0	12.23	
Incremental Cost (600-hp Range)		32,683	**6.08**	**5,375**
Waukesha 3524GSI 840-hp rich-burn	1.0	14,930	8.11	
Caterpillar G3512LE 860-hp lean-burn	1.5	0	12.46	
Incremental Cost (800-hp range)		**14,930**	**4.35**	**3,432**

The use of the lean-burn engine without control is the most cost-effective method to control NO_X emissions. The rich-burn engine equipped with a NSCR unit and an AFR controller has the same emission rate of 1.0 gram per brake horsepower-hour (g/bhp-hr) as the lean-burn engine. The cost effectiveness of the 400-hp rich-burn engine, the 840-hp rich-burn engine, and the 1,680-hp rich-burn engine are $693 per ton, $557 per ton, and $438 per ton, respectively. The cost effectiveness of the 400-hp lean-burn engine, the 633 and 860-hp lean-burn engines, and the 1,675 and 1,775-hp lean-burn engines are each $0 per ton. A 400-hp rich-burn engine would cost an additional $50,840 but no additional tons of NO_X would be removed beyond the lean-burn engine. A 400-hp rich-burn engine would cost an additional $50,840 but no additional tons of NO_X would be removed beyond the 316-hp 2-stroke lean-burn engine. An 840-hp rich-burn engine would cost an additional $81,298 but no additional tons of NO_X would be removed beyond the 860-hp lean-burn engine. A 1,680-hp rich-burn engine would cost an additional $135,060 but no additional tons of NO_X would be removed beyond the 1,675 and 1,775-hp lean-burn engines. The Department agrees that the emission limit of 1.0 g/bhp-hr using a lean-burn engine without control or an AFR only for control of NO_X emissions is BACT. A lean-burn engine equipped with no additional control or an AFR only is frequently used in the natural gas compression industry and the BACT determination is consistent with other recently permitted similar sources. Because 2-stroke lean-burn engines and rich-burn engines with NSCR and AFR, with emission limits of 1.0 g/bhp-hr, provide emission rates equal to the lean-burn engine without control, the Department determined that they can be utilized in place of the lean-burn engines. A 637-hp Caterpillar 3412LE lean-burn engine would cost an additional $5,375 per additional ton of NO_X removed beyond the 633-hp Caterpillar G3508LE. Similarly, an 860-hp Caterpillar G3512LE lean-burn engine would cost an additional $3,432 per additional ton of NO_X removed beyond the 840-hp Waukesha 3524GSI rich-burn engine. Therefore, the Department agrees that the emission limit of 1.5 g/bhp-hr using a Caterpillar G3512LE 860-hp lean-burn engine with AFR only and the emission limit of 2.0 g/bhp-hr using a Caterpillar G3508LE 633-hp lean-burn engine with AFR only for control of NO_X emissions is BACT.

2. CO BACT

As part of the CO BACT analyses, the following control technologies were reviewed:

- Lean-burn engine with a catalytic oxidation unit and an AFR controller;
- Lean-burn engine with a catalytic oxidation unit;
- Lean-burn engine with an AFR controller;
- Lean-burn engine with a NSCR unit and an AFR controller;
- Lean-burn engine with a NSCR unit;
- Lean-burn engine with no additional controls;
- 2-Stroke lean-burn engine with no additional controls (400-hp range engines only);
- Rich-burn engine with a NSCR unit and an AFR controller;
- Rich-burn engine with a NSCR unit;
- Rich-burn engine with an AFR controller;
- Rich-burn engine with a catalytic oxidation unit and an AFR controller;
- Rich-burn engine with a catalytic oxidation unit; and
- Rich-burn engine with no additional controls.

Catalytic oxidation applied to a rich-burn is technically infeasible because the oxygen concentration from a rich-burn engine is not high enough for a catalytic oxidizer to operate properly. A NSCR unit applied to a lean-burn engine or lean-burn retrofit engine is also technically infeasible because the NSCR unit needs a rich fuel-to-air ratio to operate effectively. AFR controllers for the lean-burn Waukesha F18GL engines are not equipment currently provided by industry.

Technically feasible control options, in order of the highest control efficiency to the lowest control efficiency, include:

400-hp Range Engines

Control Technology	% Control	CO Emission Rate (g/bhp-hr)
Lean-Burn Engine with Catalytic Oxidizer	97.5	0.5
Rich-Burn Engine with NSCR and AFR or NSCR only	90.0	2.0
2-Stroke Lean-Burn Engine without Control	90.0	2.0
Lean-Burn Engine without Control	85.0	3.0
Rich-Burn Engine without Control or with only AFR	--	20.0

600-hp to 800-hp Range Engines

Control Technology	% Control	CO Emission Rate (g/bhp-hr)
Lean-Burn Engine with Catalytic Oxidizer	97.5	0.5
Rich-Burn Engine with NSCR and AFR or NSCR only	90.0	2.0
Lean-Burn Engine without Control	85.0	3.0
Rich-Burn Engine without Control or with only AFR	--	20.0

1,600-hp to 1,800-hp Range Engines

Control Technology	% Control	CO Emission Rate (g/bhp-hr)
Lean-Burn Engine with Catalytic Oxidizer	97.5	0.5
Rich-Burn Engine with NSCR and AFR or NSCR only	90.0	2.0
Lean-Burn Engine without Control	85.0	3.0
Rich-Burn Engine without Control or with only AFR	--	20.0

The control methods listed above are widely used; these control options cannot be eliminated solely based on environmental or energy impacts. Lean-burn engines do emit relatively higher HAP (formaldehyde) emissions than rich-burn-engines. Lean-burn engines cannot be eliminated based on higher formaldehyde emissions, but the higher formaldehyde emissions can affect the BACT determination. 600-hp to 800-hp range engines without AFR control and 1,675 to 1,775-hp range engines without AFR control are removed from the analysis because AFR control would be required and is consistent with other recently permitted similar sources.

The following tables show the cost per ton of CO reduction achieved for the various control options.

400-hp Range Engines

Control Technology	Total Annual Cost ($)	Resulting CO Emissions (tpy)	Cost Effectiveness ($/ton)
Controlled Emissions			
2-Stroke Lean-burn without Control (316-hp)	--	6.1	0
Lean-Burn Engine with Oxidation Catalyst (400-hp)	46,241	1.9	4,767
Rich-Burn Engine with NSCR and AFR or NSCR only (400-hp)	50,840	7.7	731
Baseline Emissions			
2-Stroke Lean-Burn without Control	--	6.1	--
Lean-Burn Engine without Control	--	11.6	--
Rich-Burn Engine without Control or with only AFR	--	77.3	--

- **$4,767 = $46,241 / (11.6-1.9)**
- **$731 = $50,840 / (77.3-7.7)**

600-hp to 800-hp Range Engines

Control Technology	Total Annual Cost ($)	Resulting CO Emissions (tpy)	Cost Effectiveness ($/ton)
Controlled Emissions			
Lean-Burn Engine with Oxidation Catalyst and AFR (633-hp)	61,739	3.1	4,035
Rich-Burn Engine with NSCR and AFR (840-hp)	81,298	16.2	556
Lean-Burn Engine with Oxidation Catalyst and AFR (860-hp)	82,578	4.2	3,970
Baseline Emissions			
Lean-Burn Engine without Control and with AFR (633-hp)	--	18.4	--
Rich-Burn Engine without Control and with AFR (840-hp	--	162.4	--
Lean-Burn Engine without Control and with AFR (860-hp)	--	25.0	--

- **$4,035 = $61,739 / (18.4-3.1)**
- **$556 = $81,298 / (162.4-16.2)**
- **$3,970 = $82,578 / (25-4.2)**

1,600-hp to 1,800-hp Range Engines

Control Technology	Total Annual Cost ($)	Resulting CO Emissions (tpy)	Cost Effectiveness ($/ton)
Controlled Emissions			
Lean-burn Engine with Oxidation Catalyst and AFR (1,675-hp)	132,440	8.1	3,278
Rich-burn Engine with NSCR and AFR (1,680-hp)	135,060	32.5	463
Lean-burn Engine with Oxidation Catalyst and AFR (1,775-hp)	138,840	8.6	3,244
Baseline Emissions			
Lean-burn Engine without Control and with AFR (1,675-hp	--	48.5	--
Rich-burn Engine without Control and with AFR (1,680-hp)	--	324.5	--
Lean-burn Engine without Control and with AFR (1,775-hp)	--	51.4	--

- **$3,278 = $132,440 / (48.5-8.1)**
- **$463 = $135,060 / (324.5-32.5)**
- **$3,244 = $138,840 / (51.4-8.6)**

The use of the rich-burn engines with a NSCR unit and AFR controller is the most cost-effective method to control CO emissions. The Department agrees that rich-burn engines with a NSCR unit and AFR controller, with an emission limit of 2.0 g/bhp-hr is BACT. A rich-burn engine equipped with a NSCR unit and an AFR controller is frequently used in the natural gas compression industry and the BACT determination is consistent with other recently permitted similar sources. Because a 4-stroke lean-burn engine equipped with an oxidation catalyst, with an emission limit of 0.5 g/bhp-hr, and a 2-stroke lean-burn engine, with an emission limit of 2.0 g/bhp-hr, provide environmental benefits that are equal to or exceed that of the rich-burn engines equipped with NSCR and AFR, the Department determined that they can be utilized in place of the rich-burn engines.

3. VOC BACT

Because a 4-stroke rich-burn engine equipped with a NSCR unit and an AFR controller, with an emission limit of 1.0 g/bhp-hr, a 4-stroke lean-burn engine equipped with an oxidation catalyst, with an emission limit of 1.0 g/bhp-hr, and a 2-stroke lean-burn engine, with an emission limit of 1.0 g/bhp-hr, provide equal emission rates the Department determined that they can be utilized. The Department determined that no additional controls and burning pipeline quality natural gas to meet a lb/hr emission limit equivalent to 1.0 g/bhp-hr constitute BACT for the proposed compressor engine(s).

4. PM_{10} and SO_2 BACT

The Department is not aware of any BACT determinations that have required controls for PM_{10} or SO_2 emissions from natural gas fired compressor engines. BCPL proposed no additional controls and burning pipeline quality natural gas as BACT for PM_{10} and SO_2 emissions from the proposed compressor engine. Due to the relatively small amount of PM_{10} and SO_2 emissions from the proposed engine(s) and the cost of adding additional control, any add-on controls would be cost prohibitive. Therefore, the Department concurred with BCPL's BACT proposal and determined that no additional controls and burning pipeline quality natural gas will constitute BACT for PM_{10} and SO_2 emissions from the compressor engine(s).

IV. Emission Inventory

		Ton/year				
Possible engines	**Permit Limitations**	**PM_{10}**	**NO_X**	**VOC**	**CO**	**SO_X**
316-hp Ajax 2802LE	Any combination of 3 engines as long as total hp does not exceed 1266	0.09	3.07	1.66	6.40	0.00
400-hp Caterpillar G3408TA		0.13	3.85	3.85	7.71	0.01
400-hp Waukesha F18GL		0.13	3.85	3.85	1.93	0.01
633-hp Caterpillar G3508LE		0.22	12.22	6.13	3.07	0.01
840-hp Waukesha 3524GSI		0.27	8.10	8.10	16.21	0.01
860-hp Caterpillar 3512LE		0.26	12.44	8.32	4.16	0.02
1675-hp Caterpillar 3520B	Any combination of two engines	0.53	16.16	16.16	8.10	0.03
1680-hp Waukesha 7044 GSI		0.57	16.21	16.21	32.46	0.04
1775-hp Caterpillar 3606		0.53	12.00	17.13	8.59	0.03
Worst Case Engine Combination NO_X[1]		1.53	48.71	44.59	76.79	0.11
Worst Case Engine Combination CO[2]		1.54	44.37	44.37	88.84	0.10
Complex Worst Case Engine Combination[3]		***1.54***	***48.71***	***44.59***	***88.84***	***0.11***
Up To 1 MMBtu/hr Dehydrator #1		0.03	0.44	0.02	0.37	0.00
Up To 1 MMBtu/hr Dehydrator #2		0.03	0.44	0.02	0.37	0.00
Miscellaneous Tanks (35)		0.00	0.00	10.0	0.00	0.00
Miscellaneous Tank Heaters (3)		0.06	0.66	0.03	0.54	0.00
Complex Totals		**1.66**	**50.25**	**54.66**	**90.12**	**0.11**

[1]Worst Case NO_X = (2) 1680-hp Waukesha 7044 GSI, (1) 400-hp Caterpillar G3408TA, and (1) 860-hp Caterpillar 3512LE.
[2]Worst Case CO = (2) 1680-hp Waukesha 7044 GSI, (1) 400-hp Caterpillar G3408TA, and (1) 840-hp Waukesha 3524 GSI.
[3]Complex Worst Case Engine Combination = the higher of NO_X or CO Worst Case Engine Combination.

316-hp Ajax 2802LE Compressor Engine

Horsepower: 316 hp
Hours of operation: 8760 hr/yr

PM_{10} Emissions
Emission Factor: 9.91E-03 lb/MMBtu (AP-42, Chapter 3, Table 3.2-1, 7/00)
Fuel Consumption: 2.46 MMBtu/hr (Maximum Design)
Calculations: 2.46 MMBtu/hr * 9.91E-03 lb/MMBtu = 0.02 lb/hr
0.02 lb/hr * 8760 hr/hr * 0.0005 ton/lb = 0.09 ton/yr

NO_X Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 316 hp * 0.002205 lb/gram = 0.70 lb/hr
0.70 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 3.07 ton/yr

VOC Emissions
Emission factor: 0.55 gram/bhp-hour (BACT Determination)
Calculations: 0.55 gram/bhp-hour * 316 hp * 0.002205 lb/gram = 0.38 lb/hr
0.38 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 1.66 ton/yr

CO Emissions
Emission factor: 2.10 gram/bhp-hour (BACT Determination)
Calculations: 2.10 gram/bhp-hour * 316 hp * 0.002205 lb/gram = 1.46 lb/hr
1.46 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 6.40 ton/yr

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-1, 7/00)
Fuel Consumption: 2.46 MMBtu/hr (Maximum Design)
Calculations: 2.46 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.001 lb/hr
0.001 lb/hr * 8760 hr/hr * 0.0005 ton/lb = 0.004 ton/yr

400-hp Caterpillar G3408TA Compressor Engine

Horsepower: 400 hp
Hours of operation: 8760 hr/yr

PM_{10} Emissions
Emission Factor: 9.91E-03 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Fuel Consumption: 3.02 MMBtu/hr (Maximum Design)
Calculations: 3.02 MMBtu/hr * 9.91E-03 lb/MMBtu = 0.03 lb/hr
0.03 lb/hr * 8760 hr/hr * 0.0005 ton/lb = 0.13 ton/yr

NO_X Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 400 hp * 0.002205 lb/gram = 0.88 lb/hr
0.88 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 3.85 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 400 hp * 0.002205 lb/gram = 0.88 lb/hr
0.88 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 3.85 ton/yr

CO Emissions
Emission factor: 2.00 gram/bhp-hour (BACT Determination)
Calculations: 2.00 gram/bhp-hour * 400 hp * 0.002205 lb/gram = 1.76 lb/hr
1.76 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 7.71 ton/yr

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Fuel Consumption: 3.02 MMBtu/hr (Maximum Design)
Calculations: 3.02 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.002 lb/hr
0.002 lb/hr * 8760 hr/hr * 0.0005 ton/lb = 0.01 ton/yr

400-hp Waukesha F18GL Compressor Engine

Horsepower: 400 hp
Hours of operation: 8760 hr/yr

PM_{10} Emissions
Emission Factor: 9.91E-03 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)
Fuel Consumption: 2.86 MMBtu/hr (Maximum Design)
Calculations: 2.86 MMBtu/hr * 9.91E-03 lb/MMBtu = 0.03 lb/hr
0.03 lb/hr * 8760 hr/hr * 0.0005 ton/lb = 0.13 ton/yr

NO_X Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 400 hp * 0.002205 lb/gram = 0.88 lb/hr
0.88 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 3.85 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 400 hp * 0.002205 lb/gram = 0.88 lb/hr
0.88 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 3.85 ton/yr

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

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)
Fuel Consumption: 2.86 MMBtu/hr (Maximum Design)
Calculations: 2.86 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.002lb/hr
0.002 lb/hr * 8760 hr/hr * 0.0005 ton/lb = 0.01 ton/yr

633-hp Caterpillar G3508LE Compressor Engine

Horsepower: 633 hp
Hours of operation: 8760 hr/yr

PM_{10} Emissions
Emission Factor: 9.91E-03 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)
Fuel Consumption: 4.80 MMBtu/hr (Maximum Design)
Calculations: 4.80 MMBtu/hr * 9.91E-03 lb/MMBtu = 0.05 lb/hr
0.05 lb/hr * 8760 hr/hr * 0.0005 ton/lb = 0.22 ton/yr

NO_X Emissions
Emission factor: 2.00 gram/bhp-hour (BACT Determination)
Calculations: 2.00 gram/bhp-hour * 633 hp * 0.002205 lb/gram = 2.79 lb/hr
2.79 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 12.22 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 633 hp * 0.002205 lb/gram = 1.40 lb/hr
1.40 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 6.13 ton/yr

CO Emissions
Emission factor: 0.50 gram/bhp-hour (BACT Determination)
Calculations: 0.50 gram/bhp-hour * 633 hp * 0.002205 lb/gram = 0.70 lb/hr
0.70 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 3.07 ton/yr

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)
Fuel Consumption: 4.80 MMBtu/hr (Maximum Design)
Calculations: 4.80 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.003 lb/hr
0.003 lb/hr * 8760 hr/hr * 0.0005 ton/lb = 0.01 ton/yr

840-hp Waukesha 3524GSI Compressor Engine

Horsepower: 840 hp
Hours of operation: 8760 hr/yr

PM_{10} Emissions
Emission Factor: 9.50E-03 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Fuel Consumption: 6.57 MMBtu/hr (Maximum Design)
Calculations: 6.57 MMBtu/hr * 9.50E-03 lb/MMBtu = 0.06 lb/hr
0.06 lb/hr * 8760 hr/hr * 0.0005 ton/lb = 0.27 ton/yr

NO_X Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 840 hp * 0.002205 lb/gram = 1.85 lb/hr
1.85 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 8.10 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 840 hp * 0.002205 lb/gram = 1.85 lb/hr
1.85 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 8.10 ton/yr

CO Emissions
Emission factor: 2.00 gram/bhp-hour (BACT Determination)
Calculations: 2.00 gram/bhp-hour * 840 hp * 0.002205 lb/gram = 3.70 lb/hr
3.70 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 16.21 ton/yr

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Fuel Consumption: 6.57 MMBtu/hr (Maximum Design)
Calculations: 6.57 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.004 lb/hr
0.004 lb/hr * 8760 hr/hr * 0.0005 ton/lb = 0.01 ton/yr

860-hp Caterpillar 3512LE Compressor Engine

Horsepower: 860 hp
Hours of operation: 8760 hr/yr

PM_{10} Emissions
Emission Factor: 9.91E-03 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)
Fuel Consumption: 6.42 MMBtu/hr (Maximum Design)
Calculations: 6.42 MMBtu/hr * 9.91E-03 lb/MMBtu = 0.06 lb/hr
0.06 lb/hr * 8760 hr/hr * 0.0005 ton/lb = 0.26 ton/yr

NO_X Emissions
Emission factor: 1.50 gram/bhp-hour (BACT Determination)
Calculations: 1.50 gram/bhp-hour * 860 hp * 0.002205 lb/gram = 2.84 lb/hr
2.84 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 12.44 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 860 hp * 0.002205 lb/gram = 1.90 lb/hr
1.90 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 8.32 ton/yr

CO Emissions
Emission factor: 0.50 gram/bhp-hour (BACT Determination)
Calculations: 0.50 gram/bhp-hour * 860 hp * 0.002205 lb/gram = 0.95 lb/hr
0.95 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 4.16 ton/yr

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)
Fuel Consumption: 6.42 MMBtu/hr (Maximum Design)
Calculations: 6.42 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.004 lb/hr
0.004 lb/hr * 8760 hr/hr * 0.0005 ton/lb = 0.02 ton/yr

1675-hp Caterpillar 3520B Compressor Engine

Horsepower: 1675 hp
Hours of operation: 8760 hr/yr

PM_{10} Emissions
Emission Factor: 9.91E-03 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)
Fuel Consumption: 11.84 MMBtu/hr (Maximum Design)
Calculations: 11.84 MMBtu/hr * 9.91E-03 lb/MMBtu = 0.12 lb/hr
0.12 lb/hr * 8760 hr/hr * 0.0005 ton/lb = 0.53 ton/yr

NO_X Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 1675 hp * 0.002205 lb/gram = 3.69 lb/hr
3.69 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 16.16 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 1675 hp * 0.002205 lb/gram = 3.69 lb/hr
3.69 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 16.16 ton/yr

CO Emissions
Emission factor: 0.50 gram/bhp-hour (BACT Determination)
Calculations: 0.50 gram/bhp-hour * 1675 hp * 0.002205 lb/gram = 1.85 lb/hr
1.85 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 8.10 ton/yr

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)
Fuel Consumption: 11.84 MMBtu/hr (Maximum Design)
Calculations: 11.84 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.007 lb/hr
0.007 lb/hr * 8760 hr/hr * 0.0005 ton/lb = 0.03 ton/yr

1680-hp Waukesha 7044GSI Compressor Engine

Horsepower: 1680 hp
Hours of operation: 8760 hr/yr

PM_{10} Emissions
Emission Factor: 9.50E-03 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Fuel Consumption: 13.23 MMBtu/hr (Maximum Design)
Calculations: 13.23 MMBtu/hr * 9.50E-03 lb/MMBtu = 0.13 lb/hr
0.13 lb/hr * 8760 hr/hr * 0.0005 ton/lb = 0.57 ton/yr

NO_X Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 1680 hp * 0.002205 lb/gram = 3.70 lb/hr
3.70 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 16.21 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 1680 hp * 0.002205 lb/gram = 3.70 lb/hr
3.70 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 16.21 ton/yr

CO Emissions
Emission factor: 2.00 gram/bhp-hour (BACT Determination)
Calculations: 2.00 gram/bhp-hour * 1680 hp * 0.002205 lb/gram = 7.41 lb/hr
7.41 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 32.46 ton/yr

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Fuel Consumption: 13.23 MMBtu/hr (Maximum Design)
Calculations: 13.23 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.008 lb/hr
0.008 lb/hr * 8760 hr/hr * 0.0005 ton/lb = 0.04 ton/yr

1775-hp Caterpillar 3606B Compressor Engine

Horsepower: 1775 hp
Hours of operation: 8760 hr/yr

PM_{10} Emissions
Emission Factor: 9.91E-03 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)
Fuel Consumption: 11.75 MMBtu/hr (Maximum Design)
Calculations: 11.75 MMBtu/hr * 9.91E-03 lb/MMBtu = 0.12 lb/hr
0.12 lb/hr * 8760 hr/hr * 0.0005 ton/lb = 0.53 ton/yr

NO_X Emissions
Emission factor: 0.70 gram/bhp-hour (BACT Determination)
Calculations: 0.70 gram/bhp-hour * 1775 hp * 0.002205 lb/gram = 2.74 lb/hr
2.74 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 12.00 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 1775 hp * 0.002205 lb/gram = 3.91 lb/hr
3.91 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 17.13 ton/yr

CO Emissions
Emission factor: 0.50 gram/bhp-hour (BACT Determination)
Calculations: 0.50 gram/bhp-hour * 1775 hp * 0.002205 lb/gram = 1.96 lb/hr
1.96 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 8.59 ton/yr

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-2, 7/00)
Fuel Consumption: 11.75 MMBtu/hr (Maximum Design)
Calculations: 11.75 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.007 lb/hr
0.007 lb/hr * 8760 hr/hr * 0.0005 ton/lb = 0.03 ton/yr

Up to 1.0 MMBtu/hr Dehydration Units (2 Dehydration Units)

Heat Output: 1.0 MMBtu/hr (Maximum Design)
Hours of Operation: 8760 hr/yr
Fuel Heating Value: 0.001 MMScf/MMBtu
Fuel Consumpeion: 1 MMBtu/hr * 0.001 MMScf/MMBtu * 8760 hr/yr = 8.76 MMScf/yr

PM_{10} Emissions
Emission Factor: 7.6 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)
Calculations: 7.6 lb/MMScf * 8.76 MMScf/yr * 0.0005 ton/lb = 0.03 ton/yr

NO_X Emissions
Emission factor: 100 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)
Calculations: 100 lb/MMScf * 8.76 MMScf/yr * 0.0005 ton/lb = 0.44 ton/yr

VOC Emissions
Emission factor: 5.5 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)
Calculations: 5.5 lb/MMScf * 8.76 MMScf/yr * 0.0005 ton/lb = 0.02 ton/yr

CO Emissions
Emission factor: 84 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)
Calculations: 84 lb/MMScf * 8.76 MMScf/yr * 0.0005 ton/lb = 0.37 ton/yr

SO_2 Emission
Emission factor: 0.6 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)
Calculations: 0.6 lb/MMScf * 8.76 MMScf/yr * 0.0005 ton/lb = 0.003 ton/yr

(53) Miscellaneous Tanks (water, oil, triethylene glycol)

VOC Emissions

	Tanks	Emissions	
Calculations:	(5) 50 gal Engine Jacket Water Tanks (EG/Water)	< 1 ton/yr	(Company Estimate)
	(5) 500 gal Ethylene Glycol Tanks (EG/Water makeup)	< 1 ton/yr	(Company Estimate)
	(5) 120 gal Compressor Crankcase Oil Tanks	< 1 ton/yr	(Company Estimate)
	(5) 230 gal Engine Crankcase Oil Tanks	< 1 ton/yr	(Company Estimate)
	(5) 350 gal Compressor Lubricator Oil Tanks	< 1 ton/yr	(Company Estimate)
	(5) 500 gal Waste Oil Tanks	< 1 ton/yr	(Company Estimate)
	(2) 1000 gal Triethylene Glycol Tanks	< 1 ton/yr	(Company Estimate)
	(1) 400 barrel (bbl) Produced Water Tank	< 1 ton/yr	(Company Estimate)
	(1) 400 bbl Water/Oil Mix Holding Tank	< 1 ton/yr	(Company Estimate)
	(1) 400 bblFiltered (Processed) Water Tank	< 1 ton/yr	(Company Estimate)
	Tank Total	< 10 ton/yr	

Tank Heaters (3)

Heat Output: 0.5 MMBtu/hr (Maximum Design)
Hours of Operation: 8760 hr/yr
Fuel Heating Value: 0.001 MMScf/MMBtu
Number of Heaters: 3
Fuel Consumpeion: 0.5 MMBtu/hr * 0.001 MMScf/MMBtu * 8760 hr/yr = 4.38 MMScf/yr

PM_{10} Emissions
Emission Factor: 7.6 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)
Calculations: 7.6 lb/MMScf * 4.38 MMScf/yr * 0.0005 ton/lb = 0.02 ton/yr
0.02 ton/yr * 3 heaters = 0.06 ton/yr

NO_X Emissions
Emission factor: 100 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)
Calculations: 100 lb/MMScf * 4.38 MMScf/yr * 0.0005 ton/lb = 0.22 ton/yr
0.22 ton/yr * 3 heaters = 0.66 ton/yr

VOC Emissions
Emission factor: 5.5 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)
Calculations: 5.5 lb/MMScf * 4.38 MMScf/yr * 0.0005 ton/lb = 0.01 ton/yr
0.01 ton/yr * 3 heaters = 0.03 ton/yr

CO Emissions
Emission factor: 84 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)
Calculations: 84 lb/MMScf * 4.38 MMScf/yr * 0.0005 ton/lb = 0.18 ton/yr
0.18 ton/yr * 3 heaters = 0.54 ton/yr

SO_2 Emission
Emission factor: 0.6 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)
Calculations: 0.6 lb/MMScf * 4.38 MMScf/yr * 0.0005 ton/lb = 0.001 ton/yr
0.001 ton/yr * 3 heaters = 0.003 ton/yr

V. Existing Air Quality

The facility is located approximately nine miles northeast of Decker, Montana, in the NW¼ of Section 14, Township 9 South, Range 41 East, in Big Horn County, Montana. The air quality of this area is classified as either better than National Standards or unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for 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 Deer Creek Central – Rancholme 14 Complex as part of the BCPL air quality permit application. The modeling was done to demonstrate compliance with the Montana Ambient Air Quality Standards (MAAQS) and the NAAQS. 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 five years of meteorological data (1984, 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 Tongue River Dam, Decker, Holmes Ranch, Lacey Gulch, Pine Butte School, and Spring Gulch, Montana quadrangles and Cedar Canyon, Bar N Draw, and OTO Ranch, Wyoming quadrangles were used to determine the receptor grids. Eight receptors were placed along the fence line at no more than 50-meter (m) intervals. A Cartesian receptor grid of 2,747 receptors was developed outside the fence line boundary. Receptors were placed at 100-m spacing for a distance of 1 kilometer (km) from the fence line. For a distance of 1 km to 3 km from the fence line, receptors were located at 250-m spacing. From 3 km to 10 km, receptors were placed at 500-m intervals. 29 receptors were placed around the southeastern boundary of the Northern Cheyenne Indian Reservation at approximately 1500 m spacing to determine Class I impacts using the Ashland, Green Creek, Birney Day School, Clubfoot Creek, and Cook Creek, MT Quads. All receptors were placed using the Universal Transverse Mercator (UTM) coordinates.

Modeling was conducted for both CO and NO_X emissions from the Deer Creek Central-Rancholme 14 Complex. The CO modeling only included the emissions from the Montana facilities within 10 km of the Complex (28 total with 4 RH-14 CO sources). The NO_X modeling included these facilities in addition to all Wyoming facilities within 20-km of the proposed station for a total of 367 sources. Table 1 shows the air dispersion modeling results for the high second highest 1-hour and 8-hour CO concentrations.

Table 1. Ambient Air Dispersion Results for CO

Year	Avg. Period	Modeled Conc. (μg/m^3)	Back-ground Conc. (μg/m^3)	Ambient Conc. (μg/m^3)	NAAQS (μg/m^3)	MAAQS (μg/m^3)	Modeling Significance
1984	1-HR	2,728	1,725	4,453	40,000	26,450	2,000
1989	8-HR	863	1,150	2,013	10,000	10,000	500

The modeled concentrations from the facility and the surrounding sources represent about 20% of the 8-Hour ambient standard and less than 20% of the 1-hour standards. The CO scenario chosen represents the worst case NO_X emissions, not the worst case CO emissions. NO_X is the limiting factor in this analysis. 76.8 tons per year of CO were modeled versus a possible total of 88.84 tons per year. Adding 15% to the CO results would not affect the outcome of the analysis.

Table 2 shows the air dispersion modeling results in terms of peak annual and high-second-high 1-hour results for NO_2. The results included the total modeled concentrations for two source groups: All and New. The "All" group consisted of all sources including the proposed sources for this application, Montana existing NO_X sources, and Wyoming existing NO_X sources. The "New" group included only the proposed four engines at the Deer Creek Central - Rancholme 14 Complex. The annual NAAQS for NO_2 is 100 μg/m^3 while the annual MAAQS is 94 μg/m^3 and the 1-hour standard is 564 μg/m^3. The Ambient Ratio Method (ARM) and the Ozone Limiting Method were applied to the NO_X emissions to convert the modeled concentrations to NO_2 for comparison to the NAAQS/MAAQS.

Table 2. Ambient Air Dispersion Model Results for NO_2

Year	Avg. Period	Source Group	Modeled Conc. (μg/m^3)	OLM/ARM Adjusted to NO_2 (μg/m^3)	Back-ground Conc. (μg/m^3)	Ambient Conc. (μg/m^3)	NAAQS (μg/m^3)	MAAQS (μg/m^3)	% of NAAQS/ MAAQS
1987	Annual	All	24.5	18.4	6	24.4	100	94	24.4 / 26.0
	Annual	New	23	17.3	6	23.3	100	94	23.3 / 24.8
1988	1-Hr	All	1,707	359	75	434	----	564	--- / 80.0
	1-Hr	New	1,650	353	75	428	----	564	--- / 75.9

[a] Concentration calculated using Ozone Limiting Method
[b] Applying ARM with national default of 75%
[c] One hour emissions were high-second-high

As shown in Table 2, the peak-modeled annual concentration for all of the coal bed methane development was 24.4 μg/m^3 while the individual contributions from the Deer Creek Central - Rancholme 14 Complex was 23.3 μg/m^3. The peak modeled second high 1-hour concentration was 434 μg/m^3 for all sources and 428 μg/m^3 for the facility. The high annual receptor for both the "All" and "New" source groups was located about 100 meters north-northeast of the Deer Creek Central - Rancholme 14-Complex. The high 2nd high 1- hour receptor for both groups was located about 50 meters north-northeast of the facility.

The Deer Creek Central - Rancholme 14-Complex facility was modeled using a "worst case" of two small compressors and two large compressors. The permit allows the use of up to three small compressor engines not exceeding 1266-hp. Dispersing the emissions across a larger number of sources would result in smaller impacts so this analysis is conservative and would be sufficient for the other configuration or different engine types.

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 requested that BCPL demonstrate compliance with PSD increments for NO_X. Therefore, a Class II increment analysis was conducted for the region. However, while modeling demonstrations for ambient standards typically use permitted allowables to demonstrate compliance with ambient standards, modeling demonstrations for PSD increments use actual emissions. In this case, actual emissions were not available so permitted allowable emissions were entered into the model which provided a worst-case scenario. Table 3 shows the results of the Class II increment analysis.

Table 3. Class II Modeling Results

Year	Avg. Period	Source Group	Class II Modeled Conc. [a] (μg/m^3)	Class II Increment (μg/m^3)	% Class II Increment Consumed
1987	Annual	All	18.4	25	73.6
1987	Annual	New	17.3	25	69.2

[a] Applying ARM with national default of 75%

The Deer Creek Central - Rancholme 14 Complex used approximately 69 percent of the Class II increment while the All sources group (proposed Deer Creek Central - Rancholme 14 Complex, and existing Montana and Wyoming sources) consumed about 74% of the increment in this modeling domain. Since allowable emissions were used instead of actual emissions for this analysis, the results are conservatively high.

The receptors Aspen placed along the southeastern boundary of the Northern Cheyenne Indian Reservation to demonstrate compliance with the Class I increment did not encompass the entire southern boundary of the reservation and did not include the receptor previously identified as the highest annual impact receptor for all sources. However, the modeled NO_X concentrations at the receptors used were well below the Class I increment as shown in Table 4 and the Class I increment is not at risk in this permitting analysis. The Department is running a separate cumulative impact analysis periodically as Coal Bed Methane sources develop to assure the status of the increment on the Northern Cheyenne Indian Reservation. The highest annual impact on the reservation in this analysis was only 0.519 ug/m^3 without using the ARM reduction, which is about 21% of the Class I NO_X increment.

Table 4. Class I Modeling Results

Year	Avg. Period	Source Group	Class I Modeled Conc. [a] (μg/m^3)	Class I Increment (μg/m^3)	% Class I Increment Consumed
1984	Annual	All	0.519	2.5	20.8

[a.] Ambient Ratio Method with National Default of 75 percent not applied.

Based on the above modeling analysis, the Department determined that the Deer Creek Central – Rancholme 14 Complex will not cause or contribute to a violation of any ambient air quality standard or PSD increment.

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

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
Deer Creek Central - Rancholme 14 Complex
P.O. Box 131
Glendive, MT 59330

Air Quality Permit Number: 3383-00

Preliminary Determination Issued: 06/24/05
Department Decision Issued: 07/12/05
Permit Final: 07/28/05

1. *Legal Description of Site*: The facility is located approximately nine miles northeast of Decker, Montana, in the NW¼ of Section 14, Township 9 South, Range 41 East, in Big Horn County, Montana.

2. *Description of Project*: BCPL proposes to construct and operate a coal bed methane natural gas field/central compressor station. The facility consists of not more than five compressor engines. Three of the five compressor engines shall not exceed a combined maximum rated design capacity of 1266-horsepower (hp) and the maximum rated design capacity of each individual engine shall not exceed 860-hp. These three compressor engines may include any combination of 316-hp Ajax 2802LE compressor engines; 400-hp Caterpillar 3408TA compressor engines; 400-hp Waukesha F18GL compressor engines; 633-hp Caterpillar 3508LE compressor engines; 840-hp Waukesha 3524GSI compressor engines; and 860-hp Caterpillar 3512LE compressor engines as long as the combined maximum rated design capacity of 1266-horsepower (hp) is not exceeded. Two of the five compressor engines shall not exceed individual maximum rated design capacities of 1,775-hp. These two compressor engines may include any combination of 1,675-hp Caterpillar 3520B compressor engines, 1,680-hp Waukesha 7044GSI compressor engines, and 1,775-hp Caterpillar 3606 compressor engines. The use of other engine models is not allowed by this permit.

3. *Objectives of Project*: The proposed project would provide business and revenue for BCPL by allowing the company to extract natural gas from the field.

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 #3383-00.

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. 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 to terrestrial and 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, through modeling, the Department determined that any impacts from deposition of pollutants would be minor. In addition, minor land disturbance would occur through facility construction activities. Any impacts from facility construction would be minor due to the relatively small size of the project and the relatively short period of time required for construction. 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 source of pollutants. The facility would have no direct discharges into surface water. 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, the Department determined because of the relative size of the facility that any impact resulting from the deposition of pollutants on water quality, quantity, and distribution would be minor.

In addition, 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 direct 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. 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.

Further, deposition of pollutants would occur; however, the Department determined, through modeling, that any impacts resulting from the deposition of pollutants on the soils 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, the Department determined that any impacts resulting from the deposition of pollutants on the existing vegetation cover, quantity, and quality would be minor. Overall, any impacts to vegetation cover, quantity, and quality would be minor.

E. Aesthetics

Minor impacts would result on the aesthetic values of the area because the facility would be a new facility. Small buildings would be constructed to house the engines, natural gas pipelines would be installed, and an access road would be developed. However, any visual aesthetic impacts would be minor because the complex is a relatively small industrial facility.

The facility would also create additional noise in the area. However, any auditory aesthetic impacts would be minor because the compressor engine would generally operate enclosed indoors with catalyst emission controls. Catalyst emission controls are typically designed to be installed in mufflers to achieve the appropriate temperature for proper operation. 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: PM_{10}; NO_X; CO; VOC, including HAPs; and SO_X. Air emissions from the facility would be minimized by limitations and conditions that would be included in Permit #3383-00. Conditions would include, but would not be limited to, BACT emission limits and opacity limitations on the proposed engines and the general facility. In addition, the Department determined, based on ambient air quality modeling, that the proposed facility will comply with the MAAQS and NAAQS, as well as PSD increments (please refer to Section VI of the permit analysis). Therefore, the Department determined that any air quality impacts from the proposed project 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 Centrocercus Urophasianus (Greater Sage-grouse) as a specie of special concern located within the proposed project area. In this case, the project 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 controlled emissions from the source will not cause or contribute to a violation of any ambient air quality standard, and 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, because the facility would be a minor source of air pollutants. Demands for water would be minor because the facility may use water for dust suppression. Deposition of pollutants would occur as a result of operating the facility; however, the Department determined that any impacts from deposition of pollutants 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. The impact on the demand for the non-renewable 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 near the proposed project area, the Department contacted the Montana Historical Society, State Historic Preservation Office (SHPO). According to SHPO records, there has been one previously recorded historic or archaeological site (24BH3168) within the proposed area. The site is a lithic scatter located in the NW ¼ of Section 14. SHPO recommended that a cultural resource inventory be conducted to determine if cultural or historic sites exist and/or if they would be impacted. However, neither the Department nor SHPO has the authority to require BCPL to conduct a cultural resource inventory. The Department determined that due to the previous disturbance in the area (the area is an active natural gas field) and the small amount of land disturbance that would be required to construct the facility, the chance of the project impacting any cultural or historic sites would be minor.

J. Cumulative and Secondary Impacts

Overall, the cumulative and secondary impacts 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 and negligible construction activities associated with this type of facility. 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 #3383-00.

Additional facilities (compressor stations, gas plants, etc.) could locate in the area to withdraw natural gas from the nearby area and/or to separate the components of natural gas. However, any future facility would be required to apply for and receive the appropriate permits from the appropriate regulating authority. Environmental impacts from any future facilities would be assessed through the appropriate permitting process.

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

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

SUMMARY OF COMMENTS ON POTENTIAL ECENOMIC 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 social structures and mores or cultural uniqueness and diversity of the area because the proposed project would take place in a relatively remote location. Further, the operation of a facility of this type necessitates one half-time employee for normal operations and would likely not result in any, or very little, immigration of new people to the area for employment purposes; thereby, having little if any impact on the above social and economic resources of the area.

Additional activity (vehicle traffic, construction equipment, etc.) would be noticeable during facility construction; however, the facility would not typically require day-to-day employees. Therefore, once the facility is constructed, activities associated with the operation of the facility would be minor. Overall, any impacts to the above social and economic resources in the area would be minor.

C. Local and State Tax Base and Tax Revenue

The proposed project would result in minor impacts to the local and state tax base and tax revenue because relatively few new employees would be expected as a result of constructing the facility. Further, the proposed project would necessitate negligible construction activities and typically would not require an extended period of time for completion. Therefore, any construction related jobs would be temporary and any corresponding impacts on the tax base/revenue in the area would be minor. Overall, any impacts to the local and state tax base would be minor.

D. Agricultural or Industrial Production

The land at the proposed location is rural agricultural grazing land. However, because the facility would be relatively small, the proposed project would result in only minor impacts to agricultural production. The proposed project would have minor impacts to industrial production because the proposed project would be a new industrial source locating in the proposed area. However, because the facility would be relatively small by industrial standards, the project would likely not result in additional industrial sources.

Additional facilities (compressor stations, gas plants, etc.) could locate in the area to withdraw natural gas from the nearby area and/or to separate the components of natural gas. However, any future facility would be required to apply for and receive the appropriate permits from the appropriate regulating authority. Environmental impacts from any future facilities would be assessed through the appropriate permitting process. The Department is not aware of plans for any additional facilities at this time. Overall, any impacts to agricultural or industrial production of the area would be minor.

E. Human Health

The proposed project would result in minor, if any, impacts to human health. 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. Overall any impacts to human health would be minor.

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 would produce noise. Overall any impacts to the access and quality of recreational and wilderness activities in the area would be minor.

G. Quantity and Distribution of Employment
H. Distribution of Population

The proposed project would have minor impacts on the employment and population because one half-time permanent employee would be required for normal operations thereby resulting in relatively minor, if any, new immigration to the area. In addition, temporary construction-related positions would result from this project. However, 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 relatively short time period that would be required for constructing the facility. Overall, any impacts to the above social and economic resources in the area would be minor.

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 the appropriate permits for the facility and to assure compliance with applicable rules, standards, and conditions that would be contained in those permits. 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 construction and operation of the facility. The increase in vehicle traffic would be primarily during facility construction. Therefore, vehicle traffic would be relatively 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

Only minor impacts would be expected on the local industrial and commercial activity because the proposed project would represent only a minor increase in the industrial and commercial activity in the area. The proposed project would be relatively small and would take place at a relatively remote location.

Additional facilities (compressor stations, gas plants, etc.) could locate in the area to withdraw natural gas from the nearby area and/or to separate the components of natural gas. However, any future facility would be required to apply for and receive the appropriate permits from the appropriate regulating authority. Environmental impacts from any future facilities would be assessed through the appropriate permitting process. Overall, any impacts to the local industrial and commercial activity of the area would be minor.

K. Locally Adopted Environmental Plans and Goals

The Department is unaware of any locally adopted environmental plans or goals. The permit would ensure compliance with state standards and goals. 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, the industrial production, employment, and tax revenue (etc.) impacts resulting from the proposed project would be minor. In addition, 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 #3383-00.

Additional facilities (compressor stations, gas plants, etc.) could locate in the area to withdraw natural gas from the nearby area and/or to separate the components of natural gas. However, any future facility would be required to apply for and receive the appropriate permits from the appropriate regulating authority. Environmental impacts from any future facilities would be assessed through the appropriate permitting process.

Recommendation: No EIS is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permitting action is for the construction and operation of a coal bed methane natural gas field/central compressor station. Permit #3383-00 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: Dave Aguirre
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