AIR QUALITY PERMIT

Issued To:	Williston Basin Interstate Pipeline Co. Big Gumbo Compressor Station P.O. Box 131 Glendive, MT 59330	Permit: #4061-00 Application Complete: 03/16/07 Preliminary Determination Issued: 4/10/07 Department's Decision Issued: 4/26/07 Permit Final: 5/12/07 AFS: #025-0054

An air quality permit, with conditions, is hereby granted to Williston Basin Interstate Pipeline Company (WBI), 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

Montana Air Quality Permit (MAQP) #4061-00 is issued to WBI for the construction and operation of the Big Gumbo natural gas compressor station. A further description of the permitted equipment is contained in Section I.A of the Permit Analysis.

B. Plant Location

The Big Gumbo Compressor Station is located approximately 20 miles southeast of Baker, Montana. The legal description for the site is the SW¼ of the SE¼ of Section 6, Township 4 North, Range 62 East in Fallon County, Montana.

SECTION II: Conditions and Limitations

A. Emission Limitations

1. WBI shall not operate more than two natural gas compressor engines at any given time, and the engines may be any combination of the following:

   - rich-burn compressor engine(s) with a maximum rated design capacity of 1680 brake-horsepower (bhp) equipped with a non-selective catalytic reduction (NSCR) unit and an air-to-fuel ratio (AFR) controller; and/or
   - lean-burn compressor engine(s) with maximum rated design capacity of 1775 bhp equipped with an oxidation catalyst and an AFR controller (ARM 17.8.749).

2. The pound per hour (lb/hr) emission limits for each engine shall be determined using the following equations and pollutant specific grams per brake horsepower-hour (g/bhp-hr) emission factors (ARM 17.8.752):

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

   Rich-Burn Emission Factors (1680 bhp)

Nitrogen Oxides (NO_X)	1.0 g/bhp-hr
Carbon Monoxide (CO)	2.0 g/bhp-hr
Volatile Organic Compounds (VOC)	1.0 g/bhp-hr

Lean-Burn Emission Factors (1675 bhp)	
NO_X	0.7 g/bhp-hr
CO	1.0 g/bhp-hr
VOC	1.0 g/bhp-hr

Lean-Burn Emission Factors (1775 bhp)	
NO_X	1.0 g/bhp-hr
CO	0.5 g/bhp-hr
VOC	0.5 g/bhp-hr

3. WBI shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).

4. WBI 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).

5. WBI shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.3 (ARM 17.8.749).

B. Testing Requirements

1. Both compressor engines shall be initially tested for NO_X and CO, concurrently, and the results submitted to the Department of Environmental Quality (Department) in order to demonstrate compliance with the emission limitations contained in Section II.A.2 within 180 days of startup. After the initial source test, additional testing shall continue on an every 4-year basis or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105 and ARM 17.8.749).

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

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

C. Operational Reporting Requirements

1. WBI 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 to verify compliance with permit limitations (ARM 17.8.505).

2. WBI 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 WBI as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

D. Notification

1. WBI shall provide the Department with written notification of construction, including purchase and installation of compressor engines within 30 days after commencement of construction (ARM 17.8.749).

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

SECTION III: General Conditions

A. Inspection – WBI 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, 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 WBI fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving WBI 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*., Montana Code Annotated (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 WBI may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Construction Commencement – Construction must begin within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked (ARM 17.8.762).

Permit Analysis
Williston Basin Interstate Pipeline Company
Permit #4061-00

I. Introduction/Process Description

A. Permitted Equipment

Williston Basin Interstate Pipeline Company (WBI) is permitted for the construction and operation of the Big Gumbo Compressor Station. The facility is located approximately 20 miles southeast of Baker, Montana in the SW¼ of the SE¼ of Section 6, Township 4 North, Range 62 East in Fallon County. The facility consists of the following equipment:

- Two of any of the following combinations of natural gas fired, 4-cycle, compressor engines;
  - Rich-burn, 4-cycle, compressor engine(s) with a maximum rated design capacity of 1680 brake-horsepower (bhp), equipped with an air-fuel ratio (AFR) controller, and a non-selective catalytic reduction (NSCR) unit
  - Lean-burn, 4-cycle, compressor engine(s) with oxidation catalyst and a maximum rated design capacity of 1675 bhp
  - Lean-burn, 4-cycle, compressor engine(s) with oxidation catalyst and a maximum rated design capacity of 1775 bhp
- Glycol dehydration reboiler unit (up to 0.75 million British thermal units (MMBtu)) per hour; and
- Miscellaneous support equipment and materials.

B. Source Description

The WBI facility is a natural gas booster compressor station. Production field facilities withdraw the natural gas from the surrounding production fields and send the natural gas to the WBI station to be dehydrated and compressed for transmission through long-haul pipelines for transport to natural gas markets. The glycol dehydration unit is used to remove moisture from the gas, and the compressor engines are used to boost pipeline pressure for transmitting the natural gas through the pipeline. The WBI station is not a production field facility; rather, the station dehydrates and compresses natural gas that is received from surrounding production field facilities.

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).

   WBI shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly, by telephone, whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction 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}

WBI must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of 20% for all fugitive emission sources and that reasonable precautions are taken to control emissions of airborne particulate matter (PM). (2) Under this rule, WBI shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne PM.

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 PM 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 PM 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. WBI will burn pipeline-quality natural gas in their compressor engines, which will meet this limitation.

6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.

7. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS). In this case, WBI 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, nor does it process sweet gas as regulated by Subpart LLL.

8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. A major Hazardous Air Pollutant (HAP) source, as defined and applied in 40 CFR 63, shall comply with the requirements of 40 CFR 63, as applicable, including the following subparts:

   - 40 CFR 63, Subpart HH - National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities.

   - 40 CFR 63, Subpart HHH National Emission Standards for Hazardous Air Pollutants from Natural Gas Transmission and Storage Facilities.

   Based on the information submitted by WBI, the Big Gumbo Compressor Station is not subject to the provisions of 40 CFR Part 63, because 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. WBI must demonstrate compliance with the ambient air quality standards with a stack height that does not exceed Good Engineering Practices (GEP). The proposed height of the new or altered stack for WBI 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. WBI 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 facility to obtain an air quality permit or permit modification if they construct, modify or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year of any pollutant. WBI has the PTE more than 25 tons per year of Oxides of Nitrogen (NO_x), Carbon Monoxide (CO) and Volatile Organic Carbon (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 (MAQP) 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 are not subject to the MAQP 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. WBI 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. WBI submitted an affidavit of publication of public notice for the February 21, 2007, issue of *The Billings Gazette*, a newspaper of general circulation in Fallon 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 Best Available Control Technology (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 WBI of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that does not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

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/year of any pollutant;

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

   c. PTE > 70 tons/year of PM 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 Permit #4061-00 for WBI, the following conclusions were made:

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

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

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

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

   e. This facility is not subject to any current National Emission Standards for Hazardous Air Pollutants (NESHAP).

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

   g. This source is not an Environmental Protection Agency (EPA) designated Title V source.

   Based on these facts, the Department determined that the WBI facility 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. WBI shall install on the new or altered source the maximum air pollution control capability, which is technically and economically feasible, except that BACT shall be utilized.

A BACT analysis was submitted by WBI with permit application #4061-00 addressing some available methods of controlling emissions from the Big Gumbo Compressor Station. The Department reviewed these methods, as well as previous BACT determinations, in order to make the following BACT determination.

WBI proposes to use engines that are readily available at other WBI compressor facilities in Montana. The BACT analysis was completed for two different types of lean-burn engines, and one rich-burn engine. As proposed, WBI could use two engines at any given time, and WBI could choose which two engines to use.

A. 1675 bhp or 1775 bhp Lean-burn Compressor Engine(s)

Generally, in lean-burn engines, excess air is introduced into the engine with the fuel, which reduces the temperature of the combustion process, and in turn reduces by almost half, the amount of nitrogen oxide produced compared to rich-burn engines. And because excess oxygen is available, combustion is more efficient, producing more power with the same amount of fuel.

1. CO BACT

As part of the CO BACT analysis, 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 NSCR unit and an AFR controller;
- Lean-burn engine with an NSCR unit;
- Lean-burn engine with an AFR controller; and
- Lean-burn engine with no additional controls.

Generally, lean-burn engines emit relatively higher HAP (primarily formaldehyde) emissions than rich-burn engines. However, in this case, lean-burn engines cannot be eliminated solely based on higher formaldehyde emissions, but the higher formaldehyde emissions can affect the BACT determination.

An NSCR unit applied to a lean-burn engine or lean-burn retrofit engine is technically infeasible because the NSCR unit needs a rich fuel-to-air ratio to operate effectively.

Under the current permit action, WBI proposes to use a lean-burn engine with an oxidation catalyst and an AFR controller. Lean-burn engine technology with an oxidation catalyst and an AFR controller is considered the most technically practicable and economically feasible CO control option for internal combustion, natural gas, compressor engines; and has the highest control efficiency. Further, it has been demonstrated that these technologies operated together are capable of achieving the pound per hour BACT emission limit for CO, contained in Section II.A of Permit #4061-00.

Because the highest technically feasible control option was determined to be BACT, the remaining technically feasible control options (lean-burn engine with an AFR controller, and lean-burn engine with no additional controls) do not need to be further reviewed. Therefore, in this case, the Department determined that a 4-stroke, lean-burn natural gas compressor engine with an oxidation catalyst and an AFR controller, and the emission limit established in the table below, constitutes CO BACT.

Compressor Engine	CO Emission Limit
Lean-burn, 1675 bhp	0.5 g/bhp-hr
Lean-burn, 1775 bhp	0.5 g/bhp-hr

These limits are comparable to other recently permitted sources.

2. NO_X BACT

Lean-burn engines typically have lower NO_x emissions than rich-burn engines. Essentially all NO_x formed in natural gas-fired reciprocating engines occurs through the thermal NO_x mechanism, which is mostly formed in high-temperature regions in the cylinder where combustion air has mixed sufficiently with the fuel. Maximum NO_x formation occurs near the stoichiometric air-to-fuel mixture ratio.

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

- Lean-burn engine with selective catalytic oxidation (SCR) unit and AFR controller;
- Lean-burn engine with a SCR unit;
- Lean-burn engine with an NSCR unit and an AFR controller;
- Lean-burn engine with an NSCR unit;
- Lean-burn engine with oxidation catalyst and AFR controller;
- Lean-burn engine with oxidation catalyst;
- Lean-burn engine with an AFR controller; and
- Lean-burn engine with no additional controls.

Adverse environmental impacts could occur with an 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. The addition of a SCR on a lean-burn engine is an expensive NO_X control strategy. The annual operating costs of SCR are significantly affected by the size of the engine and in this case, make this option economically infeasible.

NSCR on lean-burn engines is technically infeasible because the engine must burn a rich fuel mixture for the NSCR to properly operate.

A lean-burn engine with an AFR controller effectively reduces NO_x and CO emissions and represents a technically, economically, and environmentally feasible option for the control of these emissions resulting from internal combustion engines. However, because WBI proposes to install engines that are already available at other WBI compressor stations, the Department determined that the use of a lean-burn engine equipped with only an AFR controller does not constitute BACT, in this case.

After consideration of potential impacts (energy, environment, economic and other costs) and reviewing previous BACT determinations for similar sources, the Department determined that a 4-stroke, lean-burn, natural gas compressor engine with an oxidation catalysts and an AFR controller meeting the emission limits established in the table below constitutes NO_X BACT, in this case.

Compressor Engine	NOx Emission Limit
Lean-burn, 1675 bhp	1.0 g/bhp-hr
Lean-burn, 1775 bhp	0.7 g/bhp-hr

These limits are comparable to other recently permitted sources.

3. VOC BACT

The Department is not aware of any BACT determinations that have required controls for Volatile Organic Compound (VOC) emissions from compressor engines. Due to the relatively small amount of VOC emissions from the proposed compressor engine, any add-on controls would be cost prohibitive. WBI did not propose any additional controls for VOC. The Department determined that no additional controls and best management practices will constitute BACT for VOC emissions. Best management practices would include operating the equipment as it was designed to be operated and fixing any malfunctions as soon as reasonably practicable. VOC BACT limits are listed in the table below.

Compressor Engine	VOC Emission Limit
Lean-burn, 1675 bhp	1.0 g/bhp-hr
Lean-burn, 1775 bhp	1.0 g/bhp-hr

These limits are comparable to other recently permitted sources.

4. PM_{10} and SO_2 BACT

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

B. <u>1680 bhp Rich-burn Compressor Engine(s)</u>

1. CO BACT

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

- Rich-burn engine with a catalytic oxidation unit and an AFR controller;
- Rich-burn engine with a catalytic oxidation unit;
- Rich-burn engine with an NSCR unit and an AFR controller;
- Rich-burn engine with an NSCR unit;
- Rich-burn engine with an AFR controller; and
- Rich-burn engine with no additional controls.

Catalytic oxidation applied to a rich-burn engine is technically infeasible because the oxygen concentration from a rich-burn engine is not high enough for a catalytic oxidizer to operate properly.

An NSCR unit controls CO emissions by using available CO and residual hydrocarbons in the exhaust of a rich-burn engine as a NO_x reducing agent. Without the catalyst, in the presence of oxygen, the hydrocarbons will be oxidized instead of reacting with NO_x. As the excess hydrocarbon and NO_x pass over a honeycomb or monolithic catalyst (usually a combination of noble metals such as platinum, palladium, and/or rhodium), the reactants are reduced to Nitrogen (N_2), Water (H_2O), and Carbon Dioxide (CO_2). The noble metal catalyst usually operates between 800°F and 1,200°F; therefore, the unit would normally be mounted near the engine exhaust to maintain a high enough temperature to allow the various reactions to occur. In order to achieve maximum performance, the engine must burn a rich fuel mixture, causing

the engine to operate less efficiently. In order to provide for the most effective use of the catalyst in an NSCR unit, it is necessary to install an electronic AFR controller. This device maintains the proper air-to-fuel ratio. Maintaining the proper air-to-fuel ratio increases fuel efficiency, optimizes the level of reducing agents, and minimizes agents that can poison the catalyst; thus, provides for the maximum CO emission reduction.

After carefully reviewing control options and cost effectiveness, and as proposed by WBI, the Department determined that an NSCR unit with an AFR controller constitutes BACT for the reduction of CO emissions resulting from the operation of the proposed rich-burn, natural gas compressor engine. NSCR/AFR control effectively reduces CO emissions and represents a technically, economically, and environmentally feasible option for the control of CO emissions resulting from the internal combustion engine proposed for the current permit action.

Because the highest technically feasible control option was determined to be BACT, the remaining technically feasible control options (rich-burn engine with an NSCR unit; rich-burn engine with an AFR controller; and rich-burn engine with no additional control) do not need to be further reviewed.

The BACT limit will be 2.0 g/bhp-hr for CO. This limit is comparable to other recently permitted sources.

2. NO_X BACT

With rich-burn engines, there is just enough air to mix with the right amount of fuel to make the power required. However, nitrous oxide is created in the exhaust stream in the presence of heat at higher temperatures, and the longer the exposure to that heat, the more NO_X will be created.

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

- Rich-burn engine with an SCR and an AFR controller;
- Rich-burn engine with an SCR unit;
- Rich-burn engine with an NSCR unit and an AFR controller;
- Rich-burn engine with an NSCR unit;
- Rich-burn engine with an AFR controller; 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 an SCR to operate properly. Furthermore, adverse environmental impacts could occur with an SCR unit operating on engines with 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. The addition of a SCR on a lean-burn engine is an expensive NO_X control strategy. The annual operating costs of SCR are significantly affected by the size of the engine and in this case, make this option environmentally and economically infeasible.

An NSCR unit controls NO_x emissions by using available CO and residual hydrocarbons in the exhaust of a rich-burn engine as a NO_x reducing agent. Without the catalyst, in the presence of oxygen, the hydrocarbons will be oxidized instead of reacting with NO_x. Therefore, the unit would normally be mounted near the engine exhaust to maintain a high enough temperature to allow the various reactions to occur. In order to achieve maximum performance, 80% to 90% reduction of NO_x concentration, the engine must burn a rich fuel mixture, causing the engine to operate less efficiently and making it is necessary to install an electronic AFR controller.

NSCR with AFR maintains the proper air-to-fuel ratio, increases fuel efficiency, optimizes the level of reducing agents, and minimizes agents that can poison the catalyst; thus, provides for the maximum NO_x emission reduction.

As proposed by WBI, the Department determined that an NSCR unit with an AFR controller constitutes BACT for the reduction of NO_x emissions resulting from the operation of the proposed natural gas compressor engine. NSCR with AFR typically constitutes BACT for rich-burn compressor engines. Further, it has been demonstrated that these technologies operated together are capable of achieving the BACT emission limit for NO_x.

Because the highest technically feasible control option was determined to be BACT and this determination is consistent with other recently permitted similar sources, the remaining technically feasible control options (rich-burn engine with an NSCR unit; rich-burn engine with an AFR controller; and rich-burn engine with no additional control) do not need to be further reviewed. In this case, the BACT limit will be 1.0 g/bhp-hr for NO_x. This limit is comparable to other recently permitted sources.

3. VOC BACT

The Department is not aware of any BACT determinations that have required controls for Volatile Organic Compound (VOC) emissions from compressor engines. Due to the relatively small amount of VOC emissions from the proposed compressor engine, any add-on controls would be cost prohibitive. WBI did not propose any additional controls for VOC. The Department determined that no additional controls and best management practices will constitute BACT for VOC emissions. Best management practices would include operating the equipment as it was designed to be operated and fixing any malfunctions as soon as reasonably practicable.

The BACT limit will be 1.0 g/bhp-hr for VOC. This limit is comparable to other recently permitted sources.

4. PM_{10} and SO_2 BACT

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

C. Dehydrator Unit

Under the current permit action, WBI proposed the installation and operation of a dehydration unit to remove moisture from the product gas stream. Operation of the dehydration unit involves two distinct processes resulting in the emission of air pollutants to the atmosphere. The gas is first treated or dehydrated, with a glycol solution resulting in fugitive VOC emissions. After dehydration, the spent glycol solution is heated in the natural gas-fired reboiler to drive off the water and recover the glycol.

Natural gas combustion, such as that proposed for the dehydrator reboiler unit, inherently results in low air pollutant emissions due to characteristics of the natural gas fuel fired to operate the reboiler. Potential PM_{10}, NO_x, CO, SO_2, and VOC emissions from the reboiler are less than 1 ton/year, respectively. This glycol dehydration unit has very low emissions and therefore, the incorporation of control technologies would result in high cost control technique thereby making pollutant-specific

add-on controls for NO_x, CO, SO_2, PM_{10}, and VOCs economically infeasible. Similarly, potential VOC emissions from the dehydration process are relatively low at approximately 0.02 tpy. Because potential VOC emissions are low, incorporation of available VOC control technologies would result in high cost-effective values thereby making add-on VOC controls economically infeasible, in this case. Therefore, the Department determined that combustion of pipeline quality natural gas and following manufacturer's recommendations, and best management practices for the dehydration process constitutes BACT.

IV. Emission Inventory

Emissions (tons/year)					
Source	**PM_{10}**	**NO_x**	**VOC**	**CO**	**SO_x**
1680-bhp Natural Gas-Fired Rich-burn Engine	0.55	16.22	16.22	32.45	0.03
1675-bhp Natural Gas-Fired, Lean-burn Engine	0.49	16.17	16.17	8.09	0.03
1775-bhp Natural Gas-Fired, Lean-burn Engine	0.49	11.99	17.14	8.57	0.03
Glycol Dehydrator Reboiler	0.024	0.32	0.02	0.062	0.002
Total*	**1.12**	**32.77**	**34.30**	**64.97**	**0.062**

***Total emissions were based on the worst-case scenario, using two rich-burn engines, or two lean-burn engines**

1,680-bhp Natural Gas-Fired Rich-burn Engine
Brake Horsepower: 1680 bhp
Fuel Consumption: 13.23 MMBtu/hr
Hours of operation: 8760 hr/yr

PM_{10} Emissions
Emission Factor: 0.0095 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Calculations: 13.23 MMBtu/hr * 0.0095 lb/MMBtu = 0.12 lb/hr
0.12 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.55 ton/yr

NO_x Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 1680 bhp * 0.002205 lbs/gram = 3.70 lb/hr
3.70 0lb/hr * 8760 hr/yr * 0.0005 ton/lb = 16.22 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 1680 bhp * 0.002205 lbs/gram = 3.70 lb/hr
3.70 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 16.22 ton/yr

CO Emissions
Emission factor: 2.00 gram/bhp-hour (BACT Determination)
Calculations: 2.00 gram/bhp-hour * 1680 bhp * 0.002205 lbs/gram = 7.48 lb/hr
7.48 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 32.45 ton/yr

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Calculations: 13.23 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.00778 lb/hr
0.00778 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.03407 ton/yr

1,675-bhp Natural Gas-Fired, Lean-burn Engine
Brake Horsepower: 1675 bhp
Fuel Consumption: 11.84 MMBtu/hr
Hours of operation: 8760 hr/yr

PM_{10} Emissions
Emission Factor: 0.0095 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Calculations: 11.84 MMBtu/hr * 0.0095 lb/MMBtu = 0.112 lb/hr
0.112 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.49 ton/yr

NO_x Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 1675 bhp * 0.002205 lbs/gram = 3.69 lb/hr
3.69 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 16.17 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 1675 bhp * 0.002205 lbs/gram = 3.69 lb/hr
3.69 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 16.17 ton/yr

CO Emissions
Emission factor: 0.5 gram/bhp-hour (BACT Determination)
Calculations: 0.5 gram/bhp-hour * 1675 bhp * 0.002205 lbs/gram = 1.84 lb/hr
1.84 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 8.09 ton/yr

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Calculations: 11.84 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.00696 lb/hr
0.00696 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.03049 ton/yr

1,775-bhp Natural Gas-Fired, Lean-burn Engine
Brake Horsepower: 1775 bhp
Fuel Consumption: 11.75 MMBtu/hr
Hours of operation: 8760 hr/yr

PM_{10} Emissions
Emission Factor: 0.0095 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Calculations: 11.75 MMBtu/hr * 0.0095 lb/MMBtu = 0.11 lb/hr
0.11 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.49 ton/yr

NO_x Emissions
Emission factor: 0.70 gram/bhp-hour (BACT Determination)
Calculations: 0.70 gram/bhp-hour * 1775 bhp * 0.002205 lbs/gram = 2.73 lb/hr
2.73 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 11.99 ton/yr

VOC Emissions
Emission factor: 1.00 gram/bhp-hour (BACT Determination)
Calculations: 1.00 gram/bhp-hour * 1775 bhp * 0.002205 lbs/gram = 3.91 lb/hr
3.91 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 17.14 ton/yr

CO Emissions
Emission factor: 0.50 gram/bhp-hour (BACT Determination)
Calculations: 0.50 gram/bhp-hour * 1775 bhp * 0.002205 lbs/gram = 1.95 lb/hr
1.95 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 8.57 ton/yr

SO_2 Emission
Emission factor: 5.88E-04 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
Calculations: 11.75 MMBtu/hr * 5.88E-04 lb/MMBtu = 0.00691 lb/hr
0.00691 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.03026 ton/yr

Dehydrator Reboiler
Fuel Heating Value: 1,020 MMBtu/MMScf (AP-42, Table 1.4-1)
Fuel Consumption Rate: 0.75 MMBtu/hr (Company Information)

NO_x Emissions:
Emission Factor: 100 lb/MMscf (AP-42, Table 1.4-1, 7/98)
Calculations: 100 lb/MMscf * 0.00098 MMscf/MMBtu * 0.75 MMBtu/hr = 0.0735 lb/hr
0.0735 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.32 ton/yr

CO Emissions:
Emission Factor: 84 lb/MMscf (AP-42, Table 1.4-1, 7/98)
Calculations: 84 lb/MMscf * 0.00098 MMscf/MMBtu * 0.75 MMBtu/hr = 0.062 lb/hr
0.062 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.27 ton/yr

VOC Emissions:
Emission Factor: 5.5 lb/MMscf (AP-42, Table 1.4-2, 7/98)
Calculations: 5.5 lb/MMscf * 0.00098 MMscf/MMBtu * 0.75 MMBtu/hr = 0.004 lb/hr
0.004 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.02 ton/yr

SO_2 Emissions:
Emission Factor: 0.6 lb/MMscf (AP-42, Table 1.4-2, 7/98)
Calculations: 0.6 lb/MMscf * 0.00098 MMscf/MMBtu * 0.75 MMBtu/hr = 0.00044 lb/hr
0.00044 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.002 ton/yr

PM_{10} Emissions:
Emission Factor: 7.6 lb/MMscf (AP-42, Table 1.4-2, 7/98)
Calculations: 7.6 lb/MMscf * 0.00098 MMscf/MMBtu * 0.75 MMBtu/hr = 0.0056 lb/hr
0.0056 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.024 ton/yr

V. Existing Air Quality

The Big Gumbo Compressor Station is located in the SW1/4 of the SE1/4 of Section 6, Township 4 North, Range 62 East in Fallon County, Montana. The air quality of this area is classified as better than National Standards or unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for criteria pollutants.

VI. Ambient Air Impact Analysis

Because the emissions from this facility are controlled and should exhibit good dispersion characteristics, the Department believes that controlled emissions from the source will not cause or contribute to a violation of any ambient air quality standard.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted 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: Williston Basin Interstate Pipeline Company
P.O. Box 488
Cut Bank, MT 59427

Air Quality Permit Number: 4061-00

Preliminary Determination Issued: 4/10/07
Department Decision Issued: 4/26/07
Permit Final: 5/12/07

1. *Legal Description of Site:* WBI proposes to construct and operate a natural gas compressor engine located in the SW ¼ of the SE ¼ of Section 6, Township 4 North, Range 62 East in Fallon County, Montana. The facility would be known as the Big Gumbo Compressor Station.

2. *Description of Project:* Montana Air Quality Permit (MAQP) #4061-00 would be issued to WBI for the construction and operation of the Big Gumbo Compressor Station. The facility would be a natural gas compressor station incorporating any two of the following: a 1680 bhp capacity rich-burn natural gas compressor engine with NSCR unit and an AFR, 1675 bhp capacity lean-burn natural gas compressor engine with oxidation catalyst and AFR; and/or 1775 bhp capacity lean-burn natural gas compressor engine with oxidation catalyst and AFR. In addition, the Big Gumbo Compressor Station would be equipped with a glycol dehydrator reboiler unit for the dehydration of field gas to meet pipeline specifications.

3. *Objectives of Project*: WBI proposes to operate two natural gas compressor engines and a glycol dehydration unit at the above mentioned site. The purpose would be to increase the pressure of the gas entering the facility and to remove moisture from the gas stream.

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 MAQP to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because WBI 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 MAQP #4061-00.

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 would be reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and would 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 NO_x, CO, and VOC emissions would be expected in this project area, but the emissions would have only a minor impact on existing terrestrial, aquatic life, and habitats of the area. The proposed project is located in a remote area where the land use is agricultural-grazing. The Department has determined that any impacts from emissions or deposition of pollutants would be minor due to dispersion characteristics of the pollutants, the atmosphere, and the conditions that would be placed in MAQP #4061-00.

B. Water Quality, Quantity, and Distribution

This permitting action would have little or no effect on the water quality, water quantity, and distribution, as there would be no discharge to groundwater or surface water associated with this project. The proposed project would not require surface or groundwater use and there would be no change in drainage patterns. However, there could be minor pollutant deposition on surface waters near the project area. Therefore, the project would have minor, if any, impacts to water quality, quantity or distribution in the area.

C. Geology and Soil Quality, Stability, and Moisture

This permitting action would have a minor effect on geology and soil properties with the total land disturbance being very minimal. Some minor disturbance would occur during construction of the compressor station, but after construction, the only disturbance would be for occasional maintenance and general operation of the compressor engine. NO_x, CO, and VOC emissions from this project may have a minor effect on the soil quality; however, the air quality permit associated with this project would contain limitations and conditions to minimize the effect of the emissions on the surrounding environment. The Department determined that any impacts from deposition would be minor due to dispersion characteristics of pollutants, the atmosphere, and conditions that would be placed in MAQP #4061-00 (see section 7.F of this EA).

D. Vegetation Cover, Quantity, and Quality

This permitting action would have minor effects on the surrounding vegetation because the foot print of the proposed compressor station is minimal. Other than the area encompassed by the compressor station, no additional vegetation at the site would be disturbed for the project. The NO_x, CO, and VOC emissions in the area from this project may have a minor effect on the surrounding vegetation; however, the air quality permit associated with this project would contain limitations to minimize the effect of the emissions on the surrounding environment. Overall, this project would have minor effects on the vegetation cover, quantity and quality.

E. Aesthetics

Construction of the compressor station will have minor impacts on the surrounding property from both the visual perspective, as well as noise pollution. However, most of the disturbance will be temporary, and once construction is complete, the natural landscaping and aesthetic value of the property will be restored. With the exception of some minimal noise from the operation of the compressor engine and the corresponding small compressor-building, the Department determined only minor changes in the aesthetic value of the site will be experienced.

F. Air Quality

The Department has determined that the compressor engine would emit small amounts of NO_x, CO, VOC and very small amounts of HAPs, PM_{10}, and SO_2. However, air emissions from the facility would be minimized by conditions that would be placed in MAQP #4061-00. The applicant would be required to install the maximum air pollution control capability that is technically and economically feasible, except that BACT would be utilized. The permit would also include conditions requiring WBI to use reasonable precautions to control fugitive dust emissions.

The Department believes controlled emissions from the source would not cause or contribute to a violation of any ambient air quality standard. Although deposition of pollutants would occur as a result of operating the facility, the Department determined that the impacts from deposition of pollutants would be minor due to dispersion characteristics of pollutants (stack height, stack temperature, etc.) and atmospheric conditions (wind speed, wind direction, ambient temperature, etc.). Therefore, any impacts to air quality from the proposed facility would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

The Department, in an effort to assess any potential impacts to any unique endangered, fragile, or limited environmental resources in the proposed area of operation (Section 6, Township 4 North, Range 62 East in Fallon County, Montana) contacted the Montana Natural Heritage Program (MNHP). Search results concluded that the Greater Sage-Grouse would be a probable habitat at the project area; however, the species is not designated as endangered, fragile or sensitive. Because the compressor engine is relatively small with minor emissions, and there will be minimal disturbance of the property and the surroundings, the Department has determined that there will be a minor disturbance (if any) to unique, endangered, fragile, or limited environmental resources in the area.

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

WBI proposed to add two compressor engines near the existing gas line to increase the pressure of the gas entering the facility. As proposed, there would be no impact to water because the project would not use surface water or groundwater, nor would the project require any discharge to surface or groundwater. The proposed compressor engines would require energy to operate, and operation of the engine would cause emissions in the area, including: NO_x, CO, VOC, HAPs, PM_{10}, and SO_2. However, given the characteristics and concentration of pollutants emitted, the impacts on the water, air, and energy resources in the proposed project area would be minor due to the dispersion characteristics of pollutants (see section 7.F of this EA). Finally, because the project would be small by industrial standards, the Department determined that impacts to the environmental resources would be minor.

I. Historical and Archaeological Sites

The Department contacted the Montana Historical Society, State Historical Preservation Office (SHPO), in an effort to identify any historical and archaeological sites that may be present in the proposed area of construction and operation. Search results concluded that there are no previously recorded historical or archaeological resources of concern within the proposed area. According to the SHPO, there would be a low likelihood of adverse disturbance to any known archaeological or historic site. Therefore, no impacts upon historical or archaeological sites would be expected as a result of installing compressor engines at the Big Gumbo Facility.

J. Cumulative and Secondary Impacts

The proposed project would cause minor effects on the physical and biological aspects of the human environment because the project would cause a slight increase in emissions of NO_x, CO, and VOC in the proposed area. However, conditions placed in MAQP #4061-00 ensure that only minor air quality impacts would occur. Limitations would be established in the permit to minimize air pollution. Overall, any impacts to the physical and biological environment would be minor.

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 ECONOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores

The proposed project would not cause disruption to any native or traditional lifestyles or communities (social structures or mores) in the area because the proposed project is located in a remote area. The proposed project would not change the predominant use of the surrounding area and the facility would be relatively small by industrial standards.

B. Cultural Uniqueness and Diversity

The cultural uniqueness and diversity of the area would remain unchanged from the proposed project (no impact) because the project would take place in a remote location, where the footprint of the project will be minor, and predominant use of the area would remain the same. The applicant and the SHPO both reported that there are no known cultural resources located on or near the property. Therefore, the cultural uniqueness and diversity of the area would not be affected. The proposed project would not change the predominant use of the surrounding area and the facility would be relatively small by industrial standards.

C. Local and State Tax Base and Tax Revenue

The proposed project would result in minor, if any, impacts to the local and state tax base and tax revenue because the proposed project would not require any new permanent employees to be hired. In addition, only minor amounts of construction would be needed to complete the project.

D. Agricultural or Industrial Production

The past land use of the area was predominantly agricultural and grazing. Due to the nature of the project and the history of oil and gas wells in the area, the area may see an increase in industrial production but will most likely remain a minor source of pollution. Overall, impacts to agricultural or industrial production would be minor.

E. Human Health

The proposed project would result in minor, if any, impacts to human health because of the relatively small quantity of potential emissions. As explained in Section 7.F of this EA, deposition of pollutants would occur. However, the Department determined that the proposed project would comply with all applicable air quality rules, regulations, and standards. These rules, regulations, and standards are designed to protect human health. Therefore, any impacts to human health would be minor.

F. Access to and Quality of Recreational and Wilderness Activities

The proposed project would result in minor, if any, impacts on access to recreational and wilderness activities. Although the compressor building would be visible and produce some noise, it would be located in a remote location where the impacts to the surroundings would be minor. In addition, it is unlikely that the proposed project would deny access to recreational and wilderness activities in the area.

G. Quantity and Distribution of Employment

The proposed project would not affect the quantity and distribution of employment because no permanent employees would be hired as a result of the proposed project. However, temporary construction-related positions could result from this project. Any impacts to the quantity and distribution of employment would be minor due to the relatively small size of the facility.

H. Distribution of Population

The proposed project would not affect distribution of population in the area because the facility would be located in a relatively remote location. The proposed project would not create any new permanent employment that would cause an increase or decrease in population.

I. Demands for Government Services

There would be minor impacts on demands of government services because additional time would be required by government agencies to issue MAQP #4061-00 and to monitor compliance with applicable rules and standards. In addition, the roads in the area may realize a minor increase in vehicle traffic. However, any impacts on government services to regulate would be minor due to the relatively small size of the operation.

J. Industrial and Commercial Activity

Only minor impacts would be expected from industrial and commercial activity because the proposed project is located in a remote location, and the compressor engine will occupy a small area. There may be a slight increase in activity during construction of the compressor station, but this would only be temporary. If any additional compressor engines are added and they have a PTE greater than 25 tons per year of any regulated air pollutant, then the Department would require a MAQP. At that time, the Department would evaluate additional impacts to industrial and commercial activity for each proposed project.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans and goals affected by issuing MAQP #4061-00. This permit would contain limits for protecting air quality and keeping facility emissions in compliance with any applicable ambient air quality standards. Because the project is small, any impacts from the facility would be minor.

L. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from the proposed 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, industrial production, employment, and tax revenue (etc.) would not be significantly impacted by the proposed project. The Department would not expect other industries to be impacted by the proposed project, and the Department would require that the facility operate in compliance with all applicable rules and regulations as outlined in MAQP #4061-00. In addition, cumulative impacts may result from other companies actively drilling in the natural gas field, but the companies would likely apply for air quality permits for additional facilities.

Recommendation: No Environmental Impact Statement (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 small booster compressor (natural-gas fired engine). MAQP #4061-00 would include conditions and limitations to ensure the facility would 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.

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