

AIR QUALITY PERMIT

Issued To:	Devon Energy Production Company, L.P.	Permit: #3420-02
	Stevens Compressor Station	Application Complete: 8/3/06
	Clear Creek Road	Preliminary Determination Issued: 9/8/06
	P.O. Box 2606	Department's Decision Issued: 9/26/06
	Havre, MT 59501	Permit Final: 10/12/06
		AFS: #005-0015

An air quality permit, with conditions, is hereby granted to Devon Energy Production Company, L.P. (Devon) – Stevens Compressor Station, pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

SECTION I: Permitted Facilities

A. Plant Location

Devon owns and operates a natural gas compressor station known as the Stevens Compressor Station. The facility is located in the SW $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 14, Township 25 North, Range 18 East, in Blaine County, Montana. The facility's office is located at Clear Creek Road, P.O. Box 2606, Havre, MT, 59501.

B. Current Permit Action

On August 3, 2006, the Montana Department of Environmental Quality (Department) received a complete application for a permit modification from Devon. Specifically, Devon proposed the following changes to the existing permit:

- Addition of a natural gas-fired 4-stroke lean-burn natural gas compressor engine with a maximum rated design capacity equal to or less than 1547 brake-horsepower (bhp) with an oxidation catalyst and an electronic air-to-fuel-ratio (AFR) controller; and
- Addition of a tri-ethylene glycol (TEG) dehydrator with a heat input capacity of 0.375 million British thermal units per hour (MMBtu/hr).

A complete list of the permitted equipment is contained in Section I.A of the Permit Analysis.

SECTION II: Conditions and Limitations

A. Emission Control Requirements

1. The maximum rated design capacity of compressor engine #1 shall not exceed 1,085-bhp.

- Compressor engine #1 shall be a 4-stroke lean-burn engine with an oxidation catalyst and an electronic AFR controller. The pound per hour (lb/hr) emission limit for the engine shall be determined using the following equation and pollutant specific grams per bhp-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 pounds per gram (lb/g)

Emission Factor

Oxides of Nitrogen (NO_x): 1.0 g/bhp-hr
Carbon Monoxide (CO): 0.5 g/bhp-hr
Volatile Organic Compounds (VOC): 1.0 g/bhp-hr

- The maximum rated design capacity of compressor engine #2 shall not exceed 1,547-bhp (ARM 17.8.749).
- Compressor engine #2 shall be a 4-stroke lean-burn engine with an oxidation catalyst and an electronic AFR controller. The lb/hr emission limit for the engine shall be determined using the following equation and pollutant specific 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

Emission Factor

NO_x: 1.0 g/bhp-hr
CO: 0.5 g/bhp-hr
VOC: 1.0 g/bhp-hr

- Devon shall operate all equipment to provide the maximum air pollution control for which it was designed (ARM 17.8.752).
- Compressor engine #1, compressor engine #2, and the TEG dehydrator reboiler shall combust only pipeline quality natural gas (ARM 17.8.752).
- Devon 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).
- Devon 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).

9. Devon 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 precaution limitation in Section II.A.8 (ARM 17.8.749).

B. Testing Requirements

1. Devon shall initially test compressor engine #1 (maximum rated design capacity 1085 bhp) for NO_x and CO concurrently to demonstrate compliance with the NO_x and CO emission limits contained in Section II.A.2. The initial source testing shall be conducted within 180 days of the initial start up date of compressor engine #1. After the initial source test, testing shall continue on an every 4-year basis or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105 and ARM 17.8.749).
2. Devon shall initially test compressor engine #2 (maximum rated design capacity 1547 bhp) for NO_x and CO concurrently to demonstrate compliance with the NO_x and CO 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 compressor engine #2. After the initial source test, testing shall continue on an every 4-year basis or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105 and ARM 17.8.749).
3. The Department may require further testing (ARM 17.8.105).
4. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

C. Operational Reporting Requirements

1. Devon 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 and sources identified in Section I.A of the permit analysis.

Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. Devon 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 Devon 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).

SECTION III: General Conditions

- A. Inspection – Devon 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 Devon fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Devon 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 Devon 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
Devon Energy Production Company, L.P.
Stevens Compressor Station
Permit #3420-02

I. Introduction/Process Description

Devon Energy Production Company, L.P. (Devon) owns and operates a natural gas compressor station located in the SW¼ of the NE¼ of Section 14, Township 25 North, Range 18 East, in Blaine County, Montana. The facility is known as the Stevens Compressor Station.

A. Permitted Equipment

Devon owns and operates a natural gas-fired 4-stroke lean-burn natural gas compressor engine with a maximum rated design capacity equal to or less than 1,085 brake-horsepower (bhp), fitted with an oxidation catalyst and an electronic air-to-fuel ratio (AFR) controller (compressor engine #1); a proposed natural gas-fired 4-stroke lean-burn natural gas compressor engine with a maximum rated design capacity equal to or less than 1,547 bhp, fitted with an oxidation catalyst and an electronic AFR controller (compressor engine #2); and a proposed tri-ethylene glycol (TEG) dehydrator with an associated TEG dehydrator reboiler with a heat input capacity of 0.375 million British thermal units per hour (MMBtu/hr).

B. Source Description

The Stevens Compressor Station gathers, dehydrates, compresses, and transports nearby field gas through the use of two natural gas-fired compressor engines. After collection, the compressed natural gas is transported through a natural gas pipeline.

C. Permit History

On January 1, 2006, the Montana Department of Environmental Quality – Air Resources Management Bureau (Department) issued **Permit #3420-00** to Devon-Louisiana Corporation for the construction and operation of a compressor station. The facility consists of a 4-stroke lean-burn compressor engine of no more than 1,085 hp, fitted with an oxidation catalyst and an AFR. The facility is known as the Stevens Compressor Station.

On March 13, 2006, the Department received a request to change the corporate name from Devon-Louisiana Corporation to Devon Energy Production Company, L.P. The permit action changed the corporate name on Permit #3420-01, as requested. **Permit #3420-01** replaced Permit #3420-00.

D. Current Permit Action

On August 3, 2006, the Department received a complete application for a permit modification from Devon. Specifically, Devon proposed the following changes to the existing permit:

- Addition of a natural gas-fired lean-burn natural gas compressor engine with a maximum rated design capacity equal to or less than 1547 brake-horsepower (bhp) with an oxidation catalyst and an AFR controller; and
- Addition of a TEG dehydrator with an associated TEG dehydrator reboiler with a heat input capacity of 0.375 MMBtu/hr.

Permit **#3420-02** replaces Permit #3420-01.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department. Upon request, the Department will provide references for location of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.
3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

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

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than four hours.
5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM₁₀

Devon 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, Devon 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. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.
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). The Stevens Compressor Station is not subject to any NSPS, including the following:
 - Subpart KKK – Stevens Compressor Station does not qualify as a natural gas processing plant that engages in the extraction of natural gas liquids.
 - Subpart LLL – Stevens Compressor Station does not process sour gas.
 - Subpart IIII – Stevens Compressor Station does not incorporate a compression ignition (diesel) engine.
8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. A major source of Hazardous Air Pollutants (HAPs), as defined and applied in 40 CFR 63, shall comply with the requirements of 40 CFR 63, as applicable, including the following subparts:
 - Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities.
 - Subpart HHH –National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities
 - Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (Internal Combustion engines > 500 hp)

Based on the information submitted by Devon, the Stevens 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 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. Devon submitted the required application fee for the current permit action.
2. ARM 17.8.505 Air Quality Permit Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.

E. ARM 17.8, Subchapter 7 – Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit alteration to construct, alter or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year of any pollutant. The Stevens Compressor Station has the uncontrolled 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. Devon 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. Devon submitted an affidavit of publication of public notice for the June 22, 2006, issue of the *Havre Daily News*, a newspaper of general circulation in Blaine 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 used. The current permit action added two emitting units to the permitted facility. The required BACT analysis and determination for the affected units is contained 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 Devon 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 (EIS). The current permit action does not require the preparation of an EIS.
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 one 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 do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.
- F. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:
1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
 2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source since this facility is not a listed source and the facility's PTE is below 250 tons per year of any pollutant (excluding fugitive emissions).

- G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:
1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:
 - a. PTE > 100 tons 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 (PM₁₀) in a serious PM₁₀ nonattainment area.
 2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #3420-02 for Devon, 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 PM₁₀ 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 Devon is a minor source of emissions as defined under Title V; therefore, a Title V operating permit is not required.

III. BACT Determination

A BACT determination is required for each new or altered source. Devon shall install on the new or altered source the maximum air pollution control capability which is technically practicable and economically feasible, except that BACT shall be utilized.

A. 1547 bhp Capacity Natural Gas Compressor Engine

1. CO BACT

a. *Identification of CO Control Options:*

CO is a product of incomplete combustion. Reciprocating engines have the following available types of CO control options:

- Parametric controls (timing and operating at a leaner air-to fuel ratio)
- Post-combustion catalytic controls:
 - Lean-burn: oxidation catalysts
 - Rich-burn: nonselective catalytic reduction (NSCR)

b. *Eliminate Technically Infeasible CO Options:*

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. Excess oxygen is needed by the catalytic oxidizers to efficiently oxidize CO to CO₂.

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

c. *Rank Feasible CO Control Options:*

Technically feasible control options, in order of the lowest CO emission rate to the highest CO emission rate:

Control Technology	% Control	CO Emission Rate (g/bhp-hr)
Lean-burn with Catalytic Oxidizer and AFR	70% - 90%	0.5
Lean-burn without Control	--	1.5
Rich-burn with NSCR and AFR	80% - 90%	2.0
Rich-burn without Control	--	8.0

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.

d. *Select CO BACT:*

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. Under the current permit action, Devon proposed a lean-burn engine with an oxidation catalyst and an AFR controller. After consideration of potential impacts including, but not limited to, energy impacts, impacts to the environment, economic impacts and other costs, and taking into consideration previous BACT analyses and BACT determinations for similar source internal combustion engines, the Department determined that a 4-stroke lean-burn natural gas compressor engine, with an oxidation catalyst and an AFR controller, and an emission limit of 0.5 gram per brake horsepower-hour (g/bhp-hr) CO constitutes BACT in this case.

2. NO_x BACT

a. *Identification of NO_x Control Options:*

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. Lean-burn engines typically have lower NO_x emissions than rich-burn engines. Reciprocating engines have the following types of NO_x control options:

- Parametric controls (timing and operating at a leaner air-to fuel ratio)
- Postcombustion catalytic controls:
 - Lean-burn: selective catalytic reduction (SCR)
 - Rich-burn: NSCR

b. *Eliminate Technically Infeasible Options:*

SCR is not applied to rich-burn engines because oxygen in the exhaust is not high enough for an SCR to operate properly. Additionally, an SCR is not designed to operate on compressor engines that can expect variable load demands and rapid start and stop operation. Typical compressor engines operate at variable loads, thereby creating technical difficulties for SCR operation such as periods of ammonia slip or periods of insufficient ammonia injection. SCR units have not been installed on lean-burn compressor engines in Montana.

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

c. *Rank Feasible NO_x Control Options:*

Technically feasible control options, in order of the lowest to the highest NO_x emission rate:

Control Technology	% Control	NO _x Emission Rate (g/bhp-hr)
Lean-burn with AFR	5% - 30%	1.0
Rich-burn with NSCR and AFR	90%	1.0
Lean-burn without Control	--	1.0 -2.0
Rich-burn without Control	--	16.0

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.

d. *Select NO_x BACT:*

Lean-burn engine technology with an AFR controller and rich-burn engine technology with NSCR and AFR are considered the two most technically practicable and economically feasible NO_x control options for internal combustion natural gas compressor engines. Under the current permit action, Devon proposed a lean-burn engine with an AFR controller. After consideration of potential impacts including, but not limited to, energy impacts, impacts to the environment, economic impacts and other costs, and taking into consideration previous BACT analyses and BACT determinations for similar source internal combustion engines, the Department determined that a 4-stroke lean-burn natural gas compressor engine, with an AFR controller, and an emission limit of 1.0 g/bhp-hr NO_x constitutes BACT in this case.

3. VOC BACT

The Department is not aware of any similar source BACT determinations that have required controls for VOC emissions from natural gas fired compressor engines comparable to the proposed lean-burn compressor engine. Further, the BACT determined controls for NO_x and CO (oxidation catalyst and an AFR controller) will result in co-benefit control of VOCs. Therefore, the Department determined that no additional VOC specific controls and the proposed emission limit of 1.0 g/bhp constitutes BACT for VOC emissions, in this case.

4. PM₁₀ BACT

The Department is not aware of any BACT determinations that have required controls for PM₁₀ emissions from natural gas fired compressor engines comparable to the proposed lean-burn compressor engine. Due to the relatively small amount of PM₁₀ emissions from the proposed engine, any add-on controls would be cost prohibitive and likely would not result in a great deal of additional environmental benefit. Therefore, the Department determined that the combustion of pipeline quality natural gas only with no additional control constitutes BACT for PM₁₀ emissions, in this case.

5. SO₂ BACT

The Department is not aware of any BACT determinations that have required controls for SO_x emissions from natural gas fired compressor engines comparable to the proposed lean-burn compressor engine. Due to the relatively small amount of SO_x emissions from the proposed engine, any add-on controls would be cost prohibitive and likely would not result in a great deal of additional environmental benefit. Therefore, the Department determined that the combustion of pipeline quality natural gas only with no additional control constitutes BACT for SO₂ emissions, in this case.

B. Dehydrator Unit BACT

Under the current permit action, Devon proposed the installation and operation of a TEG dehydration unit to remove moisture from the product gas-stream. Operation of the TEG dehydration unit involves two distinct processes resulting in the emission of air pollutants to the atmosphere. The gas is first treated, or dehydrated, with the TEG 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 TEG dehydrator reboiler unit, inherently results in low air pollutant emissions due to characteristics of the natural gas fuel fired to operate the reboiler. Potential PM₁₀, NO_x, CO, SO₂, and VOC emissions from the reboiler are less than 1 tpy, respectively. Because potential emissions of all regulated pollutants from the natural gas-fired reboiler are low, incorporation of available pollutant-specific control technologies would result in high cost-effective (\$/ton removed) values thereby making pollutant-specific add-on controls for NO_x, CO, SO₂, PM₁₀, and VOCs economically infeasible in this case. Similarly, potential VOC emissions from the TEG dehydration process are relatively low at approximately 12 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, due to the economic infeasibility of pollutant-specific add-on controls for the TEG dehydrator, the Department determined that combustion of pipeline quality natural gas only for reboiler operations and best management practices for the dehydration process constitutes BACT, in this case.

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

IV. Emission Inventory

Emission Source	Pollutant – tpy					
	NO _x	CO	VOC	SO ₂	PM ₁₀	HAP
1085-bhp 4-Stroke Lean-Burn Engine	10.48	5.24	10.48	0.021	0.35	2.53
1547-bhp 4-Stroke Lean-Burn Engine	14.94	7.47	14.94	0.03	0.52	3.72
TEG Dehydrator	0.00	0.00	11.94	0.00	0.00	---
0.325 MMBtu/hr TEG Dehydrator Reboiler	0.16	0.14	0.01	0.001	0.01	---
Total Emissions	25.58	12.85	37.37	0.052	0.88	6.25

Compressor Engine #1: 1,085-bhp capacity 4-Stroke Lean-Burn Compressor Engine

Fuel Heating Value: 1,000 MMBtu/MMScf (Company Information)
 Fuel Consumption Rate: 8.08 MMBtu/hr (Company Information)

NO_x Emissions:

Emission Factor: 1.0 g/hp-hr (Company Information)
 Calculations: 1.0 g/hp-hr * 0.002205 lb/g * 1085 hp = 2.39 lb/hr
 2.39 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 10.48 ton/yr

CO Emissions:

Emission Factor: 0.5 g/hp-hr (Company Information)
 Calculations: 0.5 g/hp-hr * 0.002205 lb/g * 1085 hp = 1.20 lb/hr
 1.20 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 5.24 ton/yr

VOC Emissions:

Emission Factor: 1.0 g/hp-hr (Company Information)
 Calculations: $1.0 \text{ g/hp-hr} * 0.002205 \text{ lb/g} * 1085 \text{ hp} = 2.39 \text{ lb/hr}$
 $2.39 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 10.48 \text{ ton/yr}$

SO₂ Emissions:

Emission Factor: 0.000588 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
 Calculations: $0.000588 \text{ lb/MMBtu} * 8.08 \text{ MMBtu/hr} = 0.0048 \text{ lb/hr}$
 $0.0048 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.021 \text{ ton/yr}$

PM Emissions (PM emissions include PM₁₀ and PM_{2.5}, both condensable and filterable):

Emission Factor: 0.00999 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
 Calculations: $0.00999 \text{ lb/MMBtu} * 8.08 \text{ MMBtu/hr} = 0.081 \text{ lb/hr}$
 $0.081 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.35 \text{ ton/yr}$

HAP Emissions (HAP emissions include formaldehyde):

Emission Factor: 0.072 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
 Calculations: $0.072 \text{ lb/MMBtu} * 8.08 \text{ MMBtu/hr} = 0.58 \text{ lb/hr}$
 $0.58 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 2.53 \text{ ton/yr}$

Compressor Engine #2: 1,547-bhp capacity 4-Stroke Lean-Burn Compressor Engine

Fuel Heating Value: 1,000 MMBtu/MMScf (Company Information)
 Fuel Consumption Rate: 11.80 MMBtu/hr (Company Information)

NO_x Emissions:

Emission Factor: 1.0 g/hp-hr (Company Information)
 Calculations: $1.0 \text{ g/hp-hr} * 0.002205 \text{ lb/g} * 1547 \text{ hp} = 3.41 \text{ lb/hr}$
 $3.41 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 14.94 \text{ ton/yr}$

CO Emissions:

Emission Factor: 0.5 g/hp-hr (Company Information)
 Calculations: $0.5 \text{ g/hp-hr} * 0.002205 \text{ lb/g} * 1547 \text{ hp} = 1.71 \text{ lb/hr}$
 $1.71 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 7.47 \text{ ton/yr}$

VOC Emissions:

Emission Factor: 1.0 g/hp-hr (Company Information)
 Calculations: $1.0 \text{ g/hp-hr} * 0.002205 \text{ lb/g} * 1547 \text{ hp} = 3.41 \text{ lb/hr}$
 $3.41 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 14.94 \text{ ton/yr}$

SO₂ Emissions:

Emission Factor: 0.000588 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
 Calculations: $0.000588 \text{ lb/MMBtu} * 11.80 \text{ MMBtu/hr} = 0.0069 \text{ lb/hr}$
 $0.0069 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.030 \text{ ton/yr}$

PM Emissions (PM emissions include PM₁₀ and PM_{2.5}, both condensable and filterable):

Emission Factor: 0.00999 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
 Calculations: $0.00999 \text{ lb/MMBtu} * 11.80 \text{ MMBtu/hr} = 0.12 \text{ lb/hr}$
 $0.12 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.52 \text{ ton/yr}$

HAP Emissions (HAP emissions include formaldehyde):

Emission Factor: 0.072 lb/MMBtu (AP-42, Chapter 3, Table 3.2-3, 7/00)
 Calculations: $0.072 \text{ lb/MMBtu} * 11.80 \text{ MMBtu/hr} = 0.85 \text{ lb/hr}$
 $0.85 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 3.72 \text{ ton/yr}$

TEG Dehydrator

VOC Emissions

Emission Factor: 2.7248 lb/hr (GRI-GLYCalc, Version 4.0)
Calculations: $2.7248 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 11.94 \text{ ton/yr}$

TEG Dehydrator Reboiler

Fuel Heating Value: 1,000 MMBtu/MMscf (Company Information)
Fuel Consumption Rate: 0.375 MMBtu/hr (Company Information)

NO_x Emissions:

Emission Factor: 100 lb/MMscf (AP-42, Table 1.4-2, 7/98)
Calculations: $100 \text{ lb/MMscf} * 0.001 \text{ MMscf/MMBtu} * 0.375 \text{ MMBtu/hr} = 0.04 \text{ lb/hr}$
 $0.04 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.16 \text{ ton/yr}$

CO Emissions:

Emission Factor: 84 lb/MMscf (AP-42, Table 1.4-2, 7/98)
Calculations: $84 \text{ lb/MMscf} * 0.001 \text{ MMscf/MMBtu} * 0.375 \text{ MMBtu/hr} = 0.03 \text{ lb/hr}$
 $0.03 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.14 \text{ ton/yr}$

VOC Emissions:

Emission Factor: 5.5 lb/MMscf (AP-42, Table 1.4-2, 7/98)
Calculations: $5.5 \text{ lb/MMscf} * 0.001 \text{ MMscf/MMBtu} * 0.375 \text{ MMBtu/hr} = 0.002 \text{ lb/hr}$
 $0.002 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.01 \text{ ton/yr}$

SO₂ Emissions:

Emission Factor: 0.6 lb/MMscf (AP-42, Table 1.4-2, 7/98)
Calculations: $0.6 \text{ lb/MMscf} * 0.001 \text{ MMscf/MMBtu} * 0.375 \text{ MMBtu/hr} = 0.0002 \text{ lb/hr}$
 $0.0002 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.001 \text{ ton/yr}$

PM₁₀ Emissions:

Emission Factor: 7.6 lb/MMscf (AP-42, Table 1.4-2, 7/98)
Calculations: $7.6 \text{ lb/MMscf} * 0.001 \text{ MMscf/MMBtu} * 0.375 \text{ MMBtu/hr} = 0.003 \text{ lb/hr}$
 $0.003 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.01 \text{ ton/yr}$

V. Existing Air Quality

The Devon facility is located in eastern Montana in a sparsely populated area with generally very good ventilation throughout the year. The legal description of the facility is the SW¹/₄ of the NE¹/₄ of Section 14, Township 25 North, Range 18 East, in Blaine County, Montana. Blaine County is unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants.

VI. Ambient Air Impact Analysis

Based on the relatively low levels of air pollutants emitted from the proposed Devon compressor station, the Department determined that ambient air impacts from this permitting action will be minor. The Department believes the facility, operating under the limits and conditions included in this permit, will not cause or contribute to a violation of any applicable 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: Devon Energy Production Company, L.P.
Stevens Compressor Station
Clear Creek Road
P.O. Box 2606
Havre, MT 59501

Air Quality Permit Number: 3420-02

Preliminary Determination Issued: 9/08/06

Department Decision Issued: 9/26/06

Permit Final: 10/12/06

1. *Legal Description of Site:* The facility is located in the SW¹/₄ of the NE¹/₄ of Section 14, Township 25 North, Range 18 East, in Blaine County, Montana.
2. *Description of Project:* Under the current permit action, Devon would add new equipment to the permitted facility. Specifically, Devon proposed the addition of a natural gas-fired 1547 horsepower (hp) capacity lean-burn internal combustion compressor engine with an oxidation catalyst and an air-to-fuel-ratio (AFR) controller and a tri-ethylene glycol (TEG) dehydration unit and associated 0.375 million British thermal unit per hour heat input capacity TEG dehydrator reboiler.
3. *Objectives of Project:* The proposed project would provide increased business and revenue for Devon by allowing the company to gather and sell more natural gas from the area. Natural gas would be received from nearby gas fields and the gas would be compressed for transmission through a natural gas sales pipeline.
4. *Alternatives Considered:* In addition to the proposed action, the Department also considered the “no-action” alternative. The “no-action” alternative would deny issuance of the air quality preconstruction permit to the proposed facility. However, the Department does not consider the “no-action” alternative to be appropriate because Devon 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 #3330-01.
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 addition of the proposed equipment would result in increased air pollution from facility operations. The facility would emit air pollutants and corresponding deposition of pollutants would occur; however, as described in Section 7.F. of this EA, the Department determined that any impacts from deposition would be minor. In addition, because the proposed site of operation is an existing and previously permitted industrial site, the proposed changes would be consistent with existing operations and would therefore result in only minor and consistent impacts to any terrestrial and aquatic life and habitats located within the proposed area of operation. 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 addition of the proposed equipment would result in increased air pollution from facility operations. No discharges into surface water would occur from operating the facility. However, minor amounts of water may be required to control fugitive dust emissions from the access roads and the general facility property. In addition, the facility would emit air pollutants and corresponding deposition of pollutants would occur; however, as described in Section 7.F. of this EA, the Department determined that any impact resulting from the deposition of pollutants would be minor.

Further, 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 and any minor construction activities would take place within the existing industrial site. Furthermore, no discharges into surface water would occur and no use of surface water would be expected for facility construction. Therefore, no impacts to water quality, quantity, and distribution would be expected from facility construction. Overall, any impacts to water quality, quantity, and distribution would be minor.

C. Geology and Soil Quality, Stability, and Moisture

Minor impacts to the geology and soil quality, stability, and moisture from the proposed project would occur because minor construction would be required to develop the additions to the facility. Small buildings may be constructed; however, these buildings would be erected within an existing industrial site currently used for similar source operations. Since most of the infrastructure needed to accommodate the compression and transmission of natural gas (natural gas pipelines, access roads, etc.) would already be developed, any impacts would be minor. In addition, no discharges, other than a minor increase in air emissions, would occur at the facility as a result of the proposed project.

Further, increased deposition of pollutants would occur; however, as described in Section 7.F of this EA, the Department determined that any impacts resulting from the deposition of pollutants on the areas surrounding the site would be minor. Overall, any impacts to the geology and soil quality, stability, and moisture would be minor.

D. Vegetation Cover, Quantity, and Quality

Minor impacts to vegetation cover, quantity, and quality would occur because minor construction would be required to accommodate the proposed new equipment. Small buildings may be constructed; however, these buildings would be erected within an existing industrial site currently used for similar source operations. Since most of the infrastructure needed to accommodate the compression and transmission of natural gas (natural gas pipelines, access roads, etc.) would already be developed, any impacts would be minor. No discharges, other than increased air emissions, would occur as a result of the proposed new equipment at the facility.

Further, increased deposition of pollutants would occur as a result of the proposed project; however, as described in Section 7.F of this EA, the Department determined that any impacts resulting from the deposition of pollutants on the areas surrounding the site would be minor. Overall, any impacts to the vegetation cover, quantity, and quality in the area would be minor.

E. Aesthetics

Minor impacts to the aesthetic value of the area would occur because the proposed project would add equipment and infrastructure to the existing facility. Small buildings may be constructed; however, these buildings would be erected within an existing industrial site currently used for similar source operations. Since most of the infrastructure needed to accommodate the compression and transmission of natural gas (natural gas pipelines, access roads, etc.) would already be developed, any visual aesthetic impacts would be minor.

The proposed new equipment would also create additional noise in the area. However, any auditory aesthetic impacts would be minor because the engines would be located within a building. 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 proposed project would result in increased emission of the following air pollutants: PM₁₀; 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 #3420-02. Conditions would include, but would not be limited to, BACT emission limits, opacity limitations on the proposed equipment, and opacity limitations on the general facility. In addition, based on previous analyses of similar sources operating under similar conditions, the Department believes that the emissions resulting from the proposed engines would exhibit good dispersion characteristics resulting in minor deposition impacts to the affected area.

Since controlled potential emissions from the proposed station would exhibit good dispersion characteristics and would not exceed any Montana ambient air quality modeling threshold, the Department determined that controlled emissions from the source would not cause or contribute to a violation of any ambient air quality standard. Therefore, any impacts to air quality from the proposed facility would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

Recently, under the initial permitting action for this facility, 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 a species of special concern, the Greater Sage-Grouse, which has a documented sighting outside of the immediate area of the Devon facility, but within one mile. Due to the minor amounts of construction that would be required to accommodate the proposed new equipment, the relatively low levels of pollutants that would be emitted, dispersion characteristics of pollutants and the atmosphere, and conditions that would be placed in Permit #3420-02, the Department determined that any impacts to any species of special concern would be minor.

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

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

The proposed project would be expected to have minor impacts on the demand for the environmental resource of energy because increased power would be required at the site. Further, the proposed project would result in a minor impact to the non-renewable energy resource of natural gas in the proposed area of operation because the project would result in increased compression and transfer of natural gas resulting in a reduction of that resource in the area. The impact on the demand for the environmental resource of energy would be minor because the proposed project would be consistent with existing operations at the site. Overall, the impacts for the demands on the environmental resources of water, air, and energy would be minor.

I. Historical and Archaeological Sites

Recently, under the initial permitting action for this facility, in an effort to identify any historical and archaeological sites located on or near the proposed project area, the Department contacted the Montana Historical Society, State Historic Preservation Office (SHPO). According to SHPO records, there have not been any previously recorded historic or archaeological sites within the proposed area. In addition, SHPO records indicated that no previous cultural resource inventories have been conducted in the area. SHPO stated that there was a low likelihood that cultural properties would be impacted and that a recommendation for a cultural resource inventory was unwarranted. Therefore, the Department determined that the proposed project would not impact any cultural or historic sites.

J. Cumulative and Secondary Impacts

Cumulative and secondary impacts on the physical and biological aspects of the human environment in the immediate area would be minor due to the minor amount of construction activities associated with the proposed project and because the proposed project would be consistent with existing industrial operations at the proposed site. 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 #3420-02.

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 the social structures and mores and cultural uniqueness and diversity of the area because the proposed project would take place in a relatively remote location currently used for such industrial purposes. Further, the operation of a compressor station of this type, including the proposed project, necessitates relatively few employees for normal operations and would likely not result in any, or very little, immigration of new people to the area for employment purposes. Therefore, the proposed project would have little, if any, impact on the social structures and mores and cultural uniqueness and diversity in the area.

Additional activity (vehicle traffic, construction equipment, etc.) would be noticeable during construction activities associated with the proposed project; however, compressor stations, including the proposed new equipment, typically do not require day-to-day employees and once the project 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 or no new employees would be needed as a result of the proposed project. Further, the proposed project would necessitate relatively little construction 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 of a given area would be minor. Overall, any impacts to the local and state tax base and tax revenue would be minor.

- D. Agricultural or Industrial Production

The land surrounding the proposed location is rural agricultural grazing land; however, the proposed site itself is currently used for industrial purposes consistent with the proposed project. Therefore, the proposed project would result in only minor, if any, impacts to agricultural production in the area. The proposed project would have minor impacts to industrial production in the area because the proposed project would add new equipment to an existing industrial source locating in an existing industrial area. However, because the proposed project would be relatively small by industrial standards, the project would likely not result in additional industrial sources (not directly associated with operations) moving to a given area.

- E. Human Health

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

F. Access to and Quality of Recreational and Wilderness Activities

The proposed project would not impact any access to recreational and wilderness activities because the proposed project would occur at an existing industrial facility used for such purposes. The proposed project would have minor impacts on the quality of recreational and wilderness activities in the area because the proposed project, while relatively small by industrial standards, would be visible and would produce additional noise from the site. Overall any impacts to the access to 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, if any, impacts on the quantity and distribution of employment and the distribution of population in the area because relatively few, if any, additional permanent employees would be required for normal operations thereby resulting in relatively little, if any, new immigration to the area. In addition, temporary construction-related positions would result from this project but any impacts to the quantity and distribution of employment from construction related employment would be minor due to the relatively small size of the facility and the relatively short time period that would be required for constructing the proposed facility changes. Overall, any impacts to the quantity and distribution of employment and the distribution of population in the area would be minor.

I. Demands for Government Services

The project would result in minor impacts on the demands for government services because additional time would be required by government agencies to issue Permit #3420-02 and to assure compliance with applicable rules, standards, and conditions contained in Permit #3420-02. In addition, there would be minor impacts on the demands for government services to regulate the increase in vehicle traffic that would be associated with constructing and operating the proposed new equipment. The increase in vehicle traffic would be primarily during facility construction because compressor stations typically do not require day-to-day employees. Therefore, vehicle traffic would be relatively minor due to the relatively short time period that would be required to construct the proposed changes. Overall, any demands for government services to regulate the facility or activities associated with the facility would be minor due to the nature and 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 currently used for such purposes.

K. Locally Adopted Environmental Plans and Goals

The Department is unaware of any locally adopted environmental plans or goals that would be affected by the proposed project. The permit would ensure compliance with state standards and goals.

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 #3420-02.

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 permit action would add equipment to the existing compressor station. This EA assesses the impacts specific to the proposed project. Permit #3420-02 would include conditions and limitations to ensure the facility would operate in compliance with all applicable air quality rules and regulations. In addition, there are no significant impacts associated with the proposed project.

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: Montana Department of Environmental Quality; Montana Historical Society – State Historic Preservation Office; Natural Resource Information System – Montana Natural Heritage Program.

Analysis Prepared By: M. Eric Merchant, MPH

Date: August 22, 2006