



Montana Department of  
**ENVIRONMENTAL QUALITY**

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June 8, 2010

Croft Petroleum Company  
Jerry Croft  
P.O. Box 397  
Cut Bank, MT 59427

Dear Mr. Croft:

Montana Air Quality Permit #2933-05 is deemed final as of June 8, 2010, by the Department of Environmental Quality (Department). This permit is for a natural gas compressor station. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

Vickie Walsh  
Air Permitting Program Supervisor  
Air Resources Management Bureau  
(406) 444-9741

Jenny O'Mara  
Environmental Engineer  
Air Resources Management Bureau  
(406) 444-1452

VW:JO  
Enclosure

Montana Department of Environmental Quality  
Permitting and Compliance Division

Air Quality Permit #2933-05

Croft Petroleum Company  
P.O. Box 397  
Cut Bank, MT 59427

June 8, 2010



## MONTANA AIR QUALITY PERMIT

Issued To: Croft Petroleum Company  
P.O. Box 397  
Cut Bank, MT 59427

Montana Air Quality Permit: #2933-05  
Administrative Amendment (AA)  
Received: 02/03/2010  
Department Decision on AA: 05/21/2010  
Permit Final: June 8, 2010  
AFS #: 101-0017

A Montana air quality permit (MAQP), with conditions, is hereby granted to Croft Petroleum Company (Croft), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and the Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

### Section I: Permitted Facilities

#### A. Plant Location

Croft owns and operates a natural gas compressor station and associated equipment located approximately 11 miles north of Shelby and 22 miles east of Cut Bank in the Northeast ¼ of Section 34, Township 34 North, Range 2 West in Toole County, Montana. The facility is known as the Cascade Gas Plant. A complete list of the permitted equipment is contained in Section I.A of the permit analysis.

#### B. Current Permit Action

On February 3, 2010, the Montana Department of Environmental Quality-Air Resources Management Bureau (Department) received an e-mail from Croft requesting that MAQP #2933-04 be administratively amended to remove one, 600-horsepower (hp) natural gas compressor engine (previously listed as Source #2). This engine was replaced with a 450-hp electric motor. This permit action amends the equipment and updates the permit to reflect current Department format and permit language.

### Section II: Conditions and Limitations

#### A. Emission Limitations

1. The 600-hp White Superior natural gas compressor engine shall have a minimum stack height of 22 feet above ground level. The engine speed shall not exceed 900 revolutions per minute (rpm) of continuous duty operation and emissions from the engine shall not exceed the following limits (ARM 17.8.749 and ARM 17.8.1204):

Oxides of nitrogen (NO <sub>x</sub> <sup>1</sup> )	15.00 pounds per hour (lb/hr)
Carbon monoxide (CO)	15.00 lb/hr
Volatile Organic Compounds (VOC)	2.65 lb/hr

2. Croft shall continue to operate the tri-ethylene glycol (TEG) dehydration unit

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<sup>1</sup> NO<sub>x</sub> reported as NO<sub>2</sub>.

with the still column emissions directed through a sloping line to an above-ground storage tank. The vent stack on this storage tank shall be a minimum of 10 feet above ground level (ARM 17.8.752).

3. Croft shall equip and operate the 1,000-gallon unleaded fuel tank with a permanent submerged fill pipe (ARM 17.8.324(3)). Croft shall operate all equipment to provide the maximum air pollution control for which it was designed (ARM 17.8.752).
4. Croft shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).
5. Croft shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).
6. Croft shall treat all unpaved portions of the access roads, parking lots, and general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.5 (ARM 17.8.749).

#### B. Testing Requirements

1. Croft shall test the 650-hp engine for NO<sub>x</sub> and CO, concurrently, and demonstrate compliance with the NO<sub>x</sub> and CO emission limits contained in Section II.A.1 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. During the test required in Section II.B.1, Croft shall monitor the compressor engine intake manifold temperature and pressure, exhaust temperature, rpm, and all parameters necessary to calculate hp. This data shall be submitted to the Department with the source test report (ARM 17.8.105).
3. All compliance source tests shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
4. The Department may require further testing (ARM 17.8.105).

#### C. Operational Reporting Requirements

1. Croft 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 most recent emission inventory report and sources identified in the emission inventory contained in the permit analysis.

Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations. In addition, Croft shall submit the following information annually to the Department by March 1 of

each year (ARM 17.8.505):

- a. Amount of fuel consumed by the 600- hp engine (corrected to 14.7 pounds per square inch-absolute (psia) and 60 degrees Fahrenheit (°F));
  - b. Hours of operation for the 600-hp engine; and
  - c. Estimated hours of operation for the TEG dehydration unit.
2. Croft shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745 that would include ***the addition of a new emissions unit***, change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation. The notice must be submitted to the Department, in writing, 10 days prior to 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 Croft as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).
  4. Croft shall annually certify, as required by ARM 17.8.1204(3)(b), that its actual emissions are less than those that would require the source to obtain an air quality Title V operating permit. The annual certification shall comply with the certification requirements of ARM 17.8.1207. The annual certification shall be submitted along with the annual emission inventory information (ARM 17.8.749 and ARM 17.8.1204).

### Section III: General Conditions

- A. Inspection - Croft 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 (Continuous Emissions Monitoring System (CEMS), Continuous Emission Rate Monitoring System (CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver - The permit and all the terms, conditions, and matters stated herein shall be deemed accepted if Croft fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving Croft 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 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 Department personnel at the location of the permitted source.
- G. Permit Fees - Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by Croft may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.
- H. Duration of Permit – Construction or installation must begin or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

Montana Air Quality Permit (MAQP) Analysis  
Croft Petroleum Company  
MAQP #2933-05

I. Introduction/Process Description

Croft Petroleum Company (Croft) owns and operates a natural gas compressor station and associated equipment located in the Northeast ¼ of Section 34, Township 34 North, Range 2 West, Toole County, Montana. The facility is known as the Cascade Gas Plant.

A. Permitted Equipment

The Cascade Gas Plant includes the following equipment:

1. 600-horsepower (hp) White Superior 6G-825 natural gas compressor engine;
2. 60-thousand British thermal unit per hour (MBtu/hr) triethylene glycol (TEG) natural gas dehydration unit;
3. propane refrigeration unit;
4. 40,000-gallon pressurized condensate tank; and
5. 1,000-gallon unleaded gasoline tank.

There are no fired treaters, boilers, line heaters, or flares at the Cascade Gas Plant.

B. Source Description

The Cascade Gas Plant was constructed in 1977 and was acquired by Croft in May 2002. This remote, unoccupied facility is located approximately 11 miles north of Shelby and 22 miles east of Cut Bank in the Northeast ¼ of Section 34, Township 34 North, Range 2 West in Toole County, Montana. The plant is checked daily by Croft personnel and has a 6-foot chain link fence to restrict access to the 1-acre site. The plant is designed to gather natural gas, then compress, dehydrate, and remove petroleum liquids from the gas stream to meet pipeline specifications in order to sell approximately 1.5 million standard cubic feet per day (MMScf/day).

C. Permit History

On October 9, 1996, the Montana Department of Environmental Quality-Air Resources Management Bureau (Department) issued **MAQP #2933-00** to Northland Royalty Company (Northland) for the operation of emitting units at the Cascade Gas Plant. Northland operated Non-Selective Catalytic Reduction (NSCR)/Air to Fuel Ratio (AFR) controls on both compressor engines to control oxides of Nitrogen (NO<sub>x</sub>) and carbon monoxide (CO) emissions. However, Source #01 compressor engine was manufactured and installed in 1977, prior to promulgation of the "Emission Control Requirements" on March 16, 1979. Source #02 compressor engine was manufactured in 1981 and initially operated only when the Source #01 compressor engine was down for repair. Limiting operation of the Source #02 compressor engine to 1,000 hours per year rendered NSCR/AFR controls infeasible. Therefore, under MAQP #2933-00, no controls were required on either compressor engine; however, Northland was required to increase the stack heights of both engines to a minimum of 22 feet above ground level in order to meet ambient air quality standards for NO<sub>x</sub>.

Northland controlled Volatile Organic Compounds (VOC)/Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) emissions from the TEG dehydration unit by routing still vent emissions through a sloping line to an above-ground storage tank. Northland was required to control fugitive VOC/BTEX emissions through good management practices by auditing the TEG circulation rate and by conducting monthly leak inspections of the dehydration unit and the refrigeration unit and by making prompt repairs to any leaking equipment.

On August 28, 1997, NRC Pipeline Company, LLC (NRC) was issued **MAQP #2933-01**. Northland requested a permit modification to account for a name change that became effective on July 17, 1997. The name changed from Northland to NRC.

On May 15, 1999, NRC was issued **MAQP #2933-02** to reduce the emission limits on the two 600-hp White Superior 6G-825 compressor engines at the facility. The NO<sub>x</sub> and CO emission limits for both engines were reduced from 19.85 pounds per hour (lb/hr) to 14.00 lb/hr. Furthermore, the hourly operation limit on Source #02, the 600-hp White Superior 6G-825 natural gas compressor engine, was changed from 1000 hours per year to 5000 hours per year. There was no increase in allowable emissions from this permit action.

On October 31, 2000, the Department received a request from NRC to increase the hours of operation for Source #02 (North Compressor Unit) from 5000 to 8760 hours per year. The previous Best Available Control Technology (BACT) determination for Source #02 was “no additional control”. However, this determination was based on the unit operating less than 8760 hours per year. With the proposed change, Croft was required to meet BACT limitations for NO<sub>x</sub>, CO, and VOC for Source #02. Croft proposed to install air pollution control equipment (catalytic converter) on the White Superior 6G-825 natural gas compressor engine (Source #02) to meet the BACT limits. In addition, Croft requested that the NO<sub>x</sub> and CO emission limits for Source #01 be increased from 14 lb/hr to 15 lb/hr. There was an overall decrease in allowable facility emissions from this permit action.

In addition, Croft had requested in the July 19, 2000 modification request, to limit the hp from each of the engines at the facility to 510 hp. However, the Department did not incorporate the hp limit into the permit because it would not be enforceable as a practical matter. Instead, the Department placed NO<sub>x</sub> and CO emission limits on each engine at the facility. **MAQP #2933-03** replaced MAQP #2933-02.

On September 16, 2002, the Department received a letter, including an attachment from Croft requesting that MAQP #2933-03 be transferred from NRC to Croft. The attachment was an assignment and bill of sale for the compressor stations that Croft purchased from NRC in May 2002. The current permit action transfers MAQP #2933-03 from NRC to Croft. In addition, the permit was updated to reflect current Department permit format and permit language. **MAQP #2933-04** replaced MAQP #2933-03.

#### D. Current Permit Action

On February 3, 2010, the Department received an e-mail from Croft requesting that MAQP #2933-04 be administratively amended to remove one, 600-hp natural gas compressor engine (previously listed as Source #2). The compressor engine is no longer in operation and is being used for parts. Croft replaced the engine with a 450-hp electric motor. This permit action amends the equipment and updates the permit to reflect current Department format and permit language. **MAQP #2933-05** replaces MAQP #2933-04.

E. Additional Information

Additional information, such as applicable rules and regulations, BACT/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

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

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

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary, using methods approved by the Department.
3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source, or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).  
  
Croft 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<sub>10</sub>

Croft 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 be taken to control emissions of airborne particulate matter. (2) Under this section, Croft 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 for the in this rule.
5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. 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. Croft will comply with this limitation by burning pipeline-quality natural gas in the compressor engines and the dehydration unit reboiler.
6. ARM 17.8.324(3) Hydrocarbon Emissions--Petroleum Products. 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 a tank is equipped with a vapor loss control device as described in (1) of this rule, or is a pressure tank as described in (1) of

this rule.

7. ARM 17.8.340 Standard of Performance for New Stationary Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). Croft Cascade Gas Plant is not an NSPS-affected source because it does not meet the definition of any NSPS subpart defined in 40 CFR Part 60.
  8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR 63, shall comply with the requirements of 40 CFR Part 63, as listed below:
    - a. 40 CFR 63, Subpart A – General Provisions apply to all equipment or facilities subject to a NESHAP Subpart as listed below:
    - b. 40 CFR 63, Subpart HH-National Emission Standards for Hazardous Air Pollutants (HAPs) From Oil and Natural Gas Production Facilities. Owners or operators of oil and natural gas production facilities, as defined and applied in 40 CFR Part 63, shall comply with the standards and provisions of 40 CFR 63, Subpart HH. Previously, the Department determined that Croft's facility was not considered an affected source pursuant to 40 CFR 63, Subpart HH because the facility was not considered a major source of HAPs as defined in 40 CFR 63, Subpart HH. At that time, 40 CFR 63, Subpart HH did not contain provisions for area sources, only major sources. When 40 CFR 63, Subpart HH was updated to include area source provisions, the Department reevaluated the potential subjectivity of the Croft facility. For area sources, the affected source includes each TEG dehydration unit located at a facility and all area sources with TEG units need to meet specific requirements of 40 CFR 63, Subpart HH. Because the facility is an area source of HAPs and contains a triethylene glycol dehydration unit which is considered an affected source pursuant to paragraph (b)(2) of 40 CFR 63, Subpart HH, Croft is subject to Subpart HH under the area source provisions.
    - c. 40 CFR 63, Subpart HHH-National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities. Owners or operators of natural gas transmission or storage facilities, as defined and applied in 40 CFR Part 63, shall comply with the standards and provisions of 40 CFR 63, Subpart HHH. In determining whether Croft's facility was a 40 CFR 63, Subpart HHH affected source, the Department compared the facility to larger facilities permitted in Montana. The Department made a determination that several of the larger facilities in Montana do not meet the definition of a major source of HAPs as defined in 40 CFR 63, Subpart HHH. Based upon the previous determinations and the size of Croft's facility, 40 CFR 63, Subpart HHH would not apply to the Croft facility because it 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. Croft shall 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. Croft was not required to submit an

application fee for the current permit action because it is an administrative 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.

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 modification to construct, modify, or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year of any pollutant. Croft's Cascade Gas Plant has a PTE more than 25 tons per year of NOx and CO; therefore, an air quality permit is required.
3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.
5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, modification, or use of a source. Croft was not required to submit a permit application for the current permit action because it is considered administrative. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. Croft was not required to notify the public for the current permit action because the current permit action is an administrative action.
6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal

Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.
8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.
9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Croft 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 modified 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 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 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the Federal Clean Air Act (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.

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

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:
  - a. PTE > 100 tons/year of any pollutant;
  - b. PTE > 10 tons/year of any one HAP, PTE > 25 tons/year of a combination of all HAPs, or a lesser quantity as the Department may establish by rule; or
  - c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (PM<sub>10</sub>) in a serious PM<sub>10</sub> nonattainment area
2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (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 MAQP #2933-05 for the Croft Cascade Gas Plant, the following conclusions were made:
  - a. The facility's PTE is < 100 tons/year for any pollutant.
  - b. The facility's PTE is < 10 tons/year of any one HAP and < 25 tons/year of all HAPs.
  - c. This source is not located in a serious PM<sub>10</sub> nonattainment area.
  - d. This facility is not subject to any current NSPS.
  - e. This facility is subject to area source provisions of a NESHAP standard (40 CFR 63, Subpart HH).
  - f. This source is not a Title IV affected source.
  - g. This source is not a solid waste combustion unit.
  - h. This source is not an EPA designated Title V source.

- i. As allowed by ARM 17.8.1204(3), the Department may exempt a source from the requirement to obtain an air quality operating permit by establishing federally enforceable limitations which limit that source's potential to emit.
  - i. In applying for an exemption under this section, the owner or operator of the source shall certify to the Department that the source's potential to emit, does not require the source to obtain an air quality operating permit.
  - ii. Any source that obtains a federally enforceable limit on potential to emit shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit.

Croft has taken federally enforceable permit limits to keep potential emissions below major source permitting thresholds. Therefore, the facility is not a major source and, thus a Title V operating permit is not required.

- 3. ARM 17.8.1207 Certification of Truth, Accuracy, and Completeness. Croft shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit as required by ARM 17.8.1204 (3)(b). The annual certification shall comply with requirements of ARM 17.8.1207. The annual certification shall be submitted along with the annual emission inventory information.

The Department determined that the annual reporting requirements contained in the permit are sufficient to satisfy this requirement.

### III. BACT Determination

A BACT determination is required for each new or modified source. Croft shall install on the new or modified source the maximum air pollution control capability which is technically practicable and economically feasible, except that BACT shall be utilized. A BACT analysis was not required for the current permit action because the current permit action is considered an administrative permit action.

### IV. Emission Inventory

Sources	Tons/Year				
	PM <sub>10</sub>	NO <sub>x</sub>	CO	VOC	SO <sub>x</sub>
600-Hp White Superior 6G-825 Compressor Engine	0.22	65.71	65.71	11.59	0.02
Dehydration Unit Reboiler	0.00	0.04	0.01	0.00	0.00
Dehydration Unit Still Vent	---	---	---	0.75	---
Refrigeration Unit	---	---	---	negligible	---
<b>Total</b>	<b>0.22</b>	<b>65.75</b>	<b>65.72</b>	<b>12.34</b>	<b>0.02</b>

#### **600-Hp White Superior 6G-825 Compressor Engine S/N: 264099**

Brake Horse Power: 600 BHp @ 900 rpm  
 Hours of Operation: 8,760 hr/yr  
 Max Fuel Combustion Rate: 7.75 MBtu/Hp-hr \* 600 BHp = 4650 MBtu/hr = 4.65 MMBtu/hr  
 Fuel Heating Value: 1,000 Btu/SCF or 0.0010 MMSCF/MMBtu (Natural Gas)

#### PM<sub>10</sub> Emissions:

Emission Factor: 10.0 lb/MMSCF {AFSEF - PC Version 2.0, Sept 1990, 2-02-002-02}  
 Control Efficiency: 0%

Calculations:  $10.00 \text{ lb/MMSCF} * 0.001 \text{ MMSCF/MMBtu} * 4.65 \text{ MMBtu/hr} = 0.05 \text{ lb/hr}$   
 $0.05 \text{ lb/hr} * 8,760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.22 \text{ ton/yr}$

NO<sub>x</sub> Emissions:

Emission Factor: 11.34 gram/BHp-hr {Emission Factor based on staying below the Title V threshold}

Control Efficiency: 0%

Calculations:  $11.34 \text{ gram/BHp-hr} * 600 \text{ BHp} * 0.002205 \text{ lb/gram} = 15.00 \text{ lb/hr}$   
 $15.00 \text{ lb/hr} * 8,760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 65.71 \text{ ton/yr}$

CO Emissions:

Emission Factor: 11.34 gram/BHp-hr {Emission Factor based on staying below the Title V threshold}

Control Efficiency: 0%

Calculations:  $11.34 \text{ gram/BHp-hr} * 600 \text{ BHp} * 0.002205 \text{ lb/gram} = 15.00 \text{ lb/hr}$   
 $15.00 \text{ lb/hr} * 8,760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 65.71 \text{ ton/yr}$

VOC Emissions:

Emission Factor: 2.00 gram/BHp-hr {Manufacturer's Data}

Control Efficiency: 0%

Calculations:  $2.00 \text{ gram/BHp-hr} * 600 \text{ BHp} * 0.002205 \text{ lb/gram} = 2.65 \text{ lb/hr}$   
 $2.65 \text{ lb/hr} * 8,760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 11.59 \text{ ton/yr}$

SO<sub>x</sub> Emissions:

Emission Factor: 0.60 lb/MMSCF {AFSEF - PC Version 2.0, Sept 1990, 2-02-002-02}

Calculations:  $0.60 \text{ lb/MMSCF} * 0.001 \text{ MMSCF/MMBtu} * 4.65 \text{ MMBtu/hr} = 0.0047 \text{ lb/hr}$   
 $0.003 \text{ lb/hr} * 8,760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.020 \text{ ton/yr}$

**Dehydration Unit Reboiler**

Max Fuel Combustion Rate: 0.080 MMBtu/hr (Updated from 07-25-00 Modification Application)

Hours of Operation: 8,760 hr/yr

Fuel Heating Value: 1,000 Btu/SCF or 0.0010 MMSCF/MMBtu (Natural Gas)

PM<sub>10</sub> Emissions:

Emission Factor: 3.00 lb/MMSCF {FIRE, PC Version 6.23, 1-05-001-06}

Calculations:  $3.00 \text{ lb/MMSCF} * 0.001 \text{ MMSCF/MMBtu} * 0.080 \text{ MMBtu/hr} = 0.0002 \text{ lb/hr}$   
 $0.0002 \text{ lb/hr} * 8,760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.0008 \text{ ton/yr}$

NO<sub>x</sub> Emissions:

Emission Factor: 100 lb/MMSCF {FIRE, PC Version 6.23, 1-05-001-06}

Calculations:  $100 \text{ lb/MMSCF} * 0.001 \text{ MMSCF/MMBtu} * 0.080 \text{ MMBtu/hr} = 0.0080 \text{ lb/hr}$   
 $0.0080 \text{ lb/hr} * 8,760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.0350 \text{ ton/yr}$

CO Emissions:

Emission Factor: 20.0 lb/MMSCF {FIRE, PC Version 6.23, 1-05-001-06}

Calculations:  $20.0 \text{ lb/MMSCF} * 0.001 \text{ MMSCF/MMBtu} * 0.080 \text{ MMBtu/hr} = 0.0016 \text{ lb/hr}$   
 $0.0016 \text{ lb/hr} * 8,760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.0070 \text{ ton/yr}$

VOC Emissions:

Emission Factor: 5.3 lb/MMSCF {FIRE, PC Version 6.23, 1-05-001-06}

Calculations:  $5.3 \text{ lb/MMSCF} * 0.001 \text{ MMSCF/MMBtu} * 0.080 \text{ MMBtu/hr} = 0.00042 \text{ lb/hr}$   
 $0.00042 \text{ lb/hr} * 8,760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.0018 \text{ ton/yr}$

SO<sub>x</sub> Emissions:

Emission Factor: 0.60 lb/MMSCF {FIRE, PC Version 6.23, 1-05-001-06}

Calculations:  $0.60 \text{ lb/MMSCF} * 0.001 \text{ MMSCF/MMBtu} * 0.080 \text{ MMBtu/hr} = 0.000048 \text{ lb/hr}$   
 $0.000048 \text{ lb/hr} * 8,760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.0002 \text{ ton/yr}$

**Dehydration Unit Still Vent**

Glycol Type: Tri-ethylene Glycol (TEG)

Dry Gas Flow Rate: 2.0 MMSCF/day  
Hours of Operation: 8,760 hr/yr  
Fuel Heating Value: 1,000 Btu/SCF or 0.0010 MMSCF/MMBtu (Natural Gas)  
Control Device: storage tank Control Efficiency: 30% Flash Separator: none

VOC Emissions:

Emission Factor: 0.246 lb/hr {GRI-GlyCALC Program}  
Calculations:  $0.246 \text{ lb/hr} * (100\% - 30\%) = 0.172 \text{ lb/hr}$   
 $0.172 \text{ lbs/hr} * 8,760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.75 \text{ ton/yr}$

V. Existing Air Quality

The Cascade Gas Plant is located in a remote part of Toole County in the Northeast ¼ of Section 34, Township 34 North, Range 2 West. The site is approximately 11 miles north of Shelby and 22 miles east of Cut Bank. Toole County is unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants.

VI Ambient Air Impact Analysis

The Department performed several SCREEN3 Model runs for this facility prior to issuance of MAQP #2933-00. This modeling simulated a point source with various stack heights from 15 to 25 feet above ground level, with an emission rate of 2.50 grams per second, a stack inside diameter of 0.2032 meters, a stack gas exit velocity of 16.3 meters per second with an exit gas temperature of 950 degrees Kelvin (°K). Each run took into account the rural surroundings and simple terrain at the site, along with the down-wash effects from the compressor building with a height of 4.93 meters. A background nitrogen dioxide (NO<sub>2</sub>) concentration of 75 micrograms per cubic meter (µg/m<sup>3</sup>) was added to each result. The modeling indicated that a minimum stack height of 22 feet above ground was required to comply with the Montana 1-hour Ambient Air Quality Standard for NO<sub>2</sub> of 564 µg/m<sup>3</sup>. The increased stack height provisions are stated in Section II.A.1 and II.A.2 of this permit. No refined air quality modeling or monitoring will be required at this time. The total NO<sub>x</sub> emissions decreased by a small amount in MAQP #2933-03, and both NO<sub>x</sub> and CO decreased in MAQP #2933-05 with removal of Source #2. Therefore, the Department determined that the impacts from MAQP #2933-03 would be consistent with the modeling that was done for MAQP #2933-00.

In conclusion, the current permit action is an administrative amendment that results in a decrease in emissions at the facility. Therefore, the Department believes emissions from this facility will still comply with the applicable ambient air quality standards.

## VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted the following private property taking and damaging assessment.

YES	NO	
x		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	x	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	x	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	x	4. Does the action deprive the owner of all economically viable uses of the property?
	x	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	x	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	x	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	x	7a. Is the impact of government action direct, peculiar, and significant?
	x	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	x	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	x	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

Based on this analysis, the Department determined there are no taking or damaging implications associated with this permit action.

## VIII. Environmental Assessment

An environmental assessment was not required for the current permit action because the current permit action is an administrative action.

Permit Analysis Prepared By: Jenny O'Mara

Date: April 26, 2010