July 21, 2021

Marc Dempewolf
WBI Energy Transmission, Inc.
Glendive, MT 59330

Dear Mr. Dempewolf:

Montana Air Quality Permit #2822-07 is deemed final as of July 8, 2021, 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,

For
Julie A. Merkel
Permitting Services Section Supervisor
Air Quality Bureau
(406) 444-3626

John P. Proulx
Air Quality Specialist
Air Quality Bureau
(406) 444-5391

JM:JPP
Enclosure

Montana Department of Environmental Quality
Air, Energy & Mining Division

Montana Air Quality Permit #2822-07

WBI Energy Transmission, Inc.
2010 Montana Avenue
Glendive, MT 59330

July 21, 2021

MONTANA AIR QUALITY PERMIT

Issued To:	WBI Energy Transmission, Inc. Saco Compressor Station 2010 Montana Avenue Glendive, MT 59330	MAQP: #2822-07 Administrative Amendment (AA) Request Received: 5/4/2021 Department Decision on AA: 6/22/2021 Permit Final: 7/08/2021

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to WBI Energy Transmission, Inc. (WBI), pursuant to Sections 75-2-204 and 211 of the Montana Codes 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

WBI owns and operates a natural gas compressor station and associated equipment located in the NE¼ of the SW¼ of Section 13, Township 31 North, Range 34 East, near Saco, in Valley County, Montana. The facility is known as the Saco Compressor Station.

B. Current Permit Action

On May 4, 2021, WBI submitted an Administrative Amendment request to the Department to reduce the emission limit for Oxides of Nitrogen (NO_X) from the Ajax DPC-600 (units 8, 9, and 10) from 8.6 pounds per hour (lb/hr) to 5.4 lb/hr and the Carbon Monoxide (CO) emissions from the Ingersoll-Rand 26KVG (unit 7) reduced from 17.5 lb/hr to 8.0 lb/hr. After these voluntary reductions in potential emissions become enforceable, the Saco Compressor Station will no longer be considered a major source of emissions with respect to the Title V Operating Permit Program.

Section II: Conditions and Limitations

A. Emission Limitations

1. The 660-horsepower (hp) Ingersoll-Rand compressor engine (Unit #7) shall be operated with an electronic air-to-fuel ratio (AFR) controller and a Non-Selective Catalytic Reduction (NSCR) unit. Emissions from Unit #7 shall not exceed the following (ARM 17.8.1204):

Oxides of Nitrogen (NO_X[1]):	4.60 pounds/hour (lb/hr)
Carbon Monoxide (CO):	8.0 lb/hr

2. The 600-hp Ajax compressor engine (Unit #8) shall be operated with an Ajax Low Emission Conversion Kit. Emissions from Unit #8 shall not exceed the following (ARM 17.8.752):

NO_X[1]	5.3 lb/hr (ARM 17.8.1204)
CO	3.97 lb/hr
Volatile Organic Compounds (VOC)	6.62 lb/hr

3. The 600-hp Ajax DPC-600 compressor engine (Unit #9) shall be operated with an Ajax Low Emission Conversion Kit. Emissions from Unit #9 shall not exceed the following (ARM 17.8.752):

NO_X[1]	5.3 lb/hr (ARM 17.8.1204)
CO	3.97 lb/hr
VOC	6.62 lb/hr

4. The 600-hp Ajax compressor engine (Unit #10) shall be operated with an Ajax Low Emission Conversion Kit. Emissions from Unit #10 shall not exceed the following (ARM 17.8.752):

NO_X	5.3 lb/hr (ARM 17.8.1204)
CO	3.97 lb/hr
VOC	6.62 lb/hr

5. The total maximum rated design capacity of the Saco Gen #1 electric generator shall not exceed 265 horsepower (hp) (175 kilowatt (kW)) (ARM 17.8.749).

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

7. WBI shall not cause or authorize the use of any street, road, parking lot, or the general plant property without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).

8. WBI shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.7 (ARM 17.8.749).

9. WBI shall operate all equipment to provide the maximum air pollution control for which it was designed (ARM 17.8.749).

10. WBI shall comply with all applicable standards and limitations, and the reporting, record keeping, and notification requirements contained in 40 CFR 60, Subpart JJJJ, *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines* and 40 CFR 63, Subpart ZZZZ, *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal*

Combustion Engines, for any applicable natural gas engine (ARM 17.8.340 and 40 CFR 60, Subpart JJJJ and ARM 17.8.342 and 40 CFR 63, Subpart ZZZZ).

11. WBI is allowed to operate both the existing dry bed dehydrator and relocated TEG dehydration system concurrently for 180 days following the initial delivery of the TEG dehydration system to the site. This 180 day period shall provide the installation, check-out, and debugging time necessary to reliably put the TEG dehydration system into operation.
Once the TEG dehydration system has replaced the dry bed dehydrator, WBI shall notify the Department within 30 days as to the date the TEG dehydration system showed up on site and the date the dry bed dehydrator was replaced in full operation by the TEG dehydration system (ARM 17.8.749).

12. WBI shall utilize only pipeline quality natural gas in the TEG Dehydration Unit Reboiler (ARM 17.8.752).

B. Testing Requirements

1. All compliance source tests shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

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

C. Operational Reporting Requirements

1. WBI shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis. Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. WBI shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include ***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 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 de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

3. All records compiled in accordance with this permit must be maintained by WBI as a permanent business record for at least 5 years following the date of

the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

4. Once the TEG dehydration system has replaced the dry bed dehydrator, WBI shall notify the Department within 30 days as to the date the TEG dehydration system showed up on site and the date the dry bed dehydrator was replaced in full operation by the TEG dehydration system (ARM 17.8.749).

5. WBI shall annually certify that its actual emissions at Saco Compressor Station 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 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).

D. Monitoring and Recordkeeping Requirements

1. WBI shall operate and maintain the NSCR unit and AFR controller on Unit #7, within the parameters recommended by the equipment manufacturer (ARM 17.8.749).

2. WBI shall, at a minimum, inspect on the compressor engines: the AFR controllers, the NSCR units, and the catalyst in the unit once every 6 months, as well as after every upset condition that could have caused damage to the control equipment. WBI shall conduct any subsequent maintenance to ensure that the control equipment and the catalyst will continue to perform as designed. If the catalyst fails to promote the chemical reactions required to reduce the NO_X and CO emissions to the limits stated in Section II.A, WBI shall replace the catalyst with a new catalyst capable of achieving these limits (ARM 17.8.749).

3. WBI shall keep a record of any and all inspections and maintenance conducted on the NSCR units and AFR controllers on the compressor engines (ARM 17.8.749).

4. WBI shall monitor and record the glycol flow rate on a monthly basis to prevent excessive recycle glycol flow (ARM 17.8.752).

5. WBI shall establish the glycol flow rate required to achieve the target moisture content in the natural gas product stream and demonstrate through standard operating procedures, a logbook or other site documentation that when the flowrate becomes excessively high, corrective measures are taken to return to the flowrate closer to the target flow (ARM 17.8.752).

Section III: General Conditions

A. Inspection - WBI shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting

samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver - The permit and the terms, conditions, and matters stated herein shall be deemed accepted if WBI fails to appeal as indicated below.

C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving WBI of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740 *et seq*. (ARM 17.8.756).

D. Enforcement - Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement action as specified in Section 75-2-401 *et seq*., 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 permitted source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by WBI may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. 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
WBI Energy Transmission, Inc.
Saco Compressor Station
MAQP #2822-07

I. Introduction/Process Description

A. Permitted Equipment

WBI Energy Transmission, Inc. (WBI) owns and operates a natural gas compressor station and associated equipment located in the NE¼ of the SW¼ of Section 13, Township 31 North, Range 34 East, near Saco, in Valley County Montana. The facility is known as the Saco Compressor Station. Permitted equipment includes, but is not limited to, the following:

Unit #	Year Inst.	Make	Model	Size	Source
7	1959	Ingersoll-Rand	62 KVG	660 hp [a]	04
8	1979	Ajax	DPC-600	600 hp	05
9	1979	Ajax	DPC-600	600 hp	06
10	1981	Ajax	DPC-600	600 hp	07
Furnace	1947	Petro-Chem	regeneration	2.4 MMBtu/hr[b]	09
Saco Gen #1	2005	Waukesha	F18GL	265 hp (175 kW)[c]	13

[a] Horsepower (hp)
[b] million British thermal unit per hour (MMBtu/hr)
[c] Kilowatt (kW)

Small natural gas-fired building, garage, office, and water heaters include the following:

Unit Type	Year Inst.	Make	Model	Size
Plant boiler #1	1987	Weil-McLain	LGB-6	650,000 Btu/hr[d]
Plant boiler #2	1987	Weil-McLain	LGB-6	650,000 Btu/hr
Water heater	1982	AO Smith	KGA 40	40,000 Btu/hr
Aux. bldg. heater	1983	Modine	PA 200 AB	200,000 Btu/hr
Aux. garage heater	N/A	Janitrol	68-130-81	30,000 Btu/hr
Shop heater	1980	N/A	N/A	250,000 Btu/hr
Meter house heater	N/A	Breust	N/A	10,000 Btu/hr

[1]Heaters do not include process heaters or boilers.
[d]British thermal unit per hr (Btu/hr)

New Equipment Included in #2822-06

Tri-ethylene Glycol (TEG) Dehydration System including:
- 0.75 MMBtu/hr TEG Dehydration Unit Reboiler
- TEG Dehydration Unit Still Vent
- Associated Equipment

B. Source Description

The Saco Compressor Station serves as a natural gas pipeline booster station to transport natural gas gathered in the Bowdoin Field near Saco to storage at the Cabin Creek, Montana storage area and to further sales destinations.
This facility was upgraded in order to handle the increased gas volumes of the Bowdoin area development project. The Saco compressor station is designed to boost a maximum of 32.0 million standard cubic feet per day (MMScfd) of natural gas into the pipeline system and has a current average throughput of approximately 25.0 MMScfd.

B. Permit History

The Saco Compressor Station was originally constructed by WBI's predecessor, the Montana-Dakota Utilities Company (MDU), in 1934 and the emission sources consisted of three 200-horsepower (hp) Ingersoll-Rand Imperial XG compressor engines (Units #1, #2, and #3). Over the period from 1934 to 1959, three 300-hp Ingersoll-Rand 8XVG compressor engines (Units #4, #5, and #6) and a 660-hp Ingersoll-Rand 62 KVG compressor engine (Unit #7) were added to accomplish capacity upgrades. In addition to the compressor engines, several auxiliary engines were installed during the period between 1934 and 1947. These auxiliary units consisted of the following equipment: two 45-hp Waukesha VRG 330 cooling fan drivers; one 38-hp Waukesha BZ for the gas cooler; one 45-hp Waukesha VRG 330 for the dehydration system; three 12-hp Waukesha FC drivers for jacket water pumps; two 12-hp Waukesha FC engines driving air compressors; and a 10-hp standby generator (243-hp total).

On November 20, 1974, MDU filed docket No. CP75-154 with the Federal Energy Regulatory Commission (FERC), which requested authority to construct and operate the additional facility necessary for the transportation of natural gas from the Bowdoin Field, near Saco, Montana to storage at the Cabin Creek, Montana storage area and to further sales destinations. During the period from 1974 to 1977 Kansas-Nebraska Gas, Inc. (K-N) aggressively developed the production capacity of the Bowdoin area. In November 1977, K-N completed construction of an extensive gas-gathering network in the Bowdoin Field. Coincidental to this event, and for the purpose of handling K-N's additional gas volumes, WBI initiated a pipeline capacity upgrade project, which included construction of the Vida Compressor Station and installation of two Ajax DPC-600 compressor engines at the Saco Compressor Station (Units #8 & #9).

WBI was issued a FERC certificate on May 11, 1977, to construct and operate those facilities identified in docket No. CP75-154. The purchase order for Units #8 and #9 was issued on March 31, 1978, with a no-charge cancellation date of August 15, 1978. The actual on-site construction of Units #8 and #9 at the Saco station began on April 1, 1979, and was completed by April 26, 1979.

In 1981, WBI decommissioned the three 200-hp Ingersoll-Rand Imperial XG compressor engines (Units #1, 2, & 3) and replaced their horsepower with a 600-hp Ajax DPC-600 compressor engine (Unit #10). The purchase order for Unit #10 was issued on July 28, 1980, with a no-charge cancellation date of November 1, 1980.

The actual installation of Unit #10 was on April 1, 1981, and the project was completed by June 14, 1982. Unit #10 was originally installed with the high air cylinder modification. This engine modification increases the volume of scavenged air during the purge stroke, thus effectively lowering combustion temperatures.

In 1986, WBI replaced the auxiliary drivers at the Saco station (243 hp total) with electric motors. In conjunction with this switch to electric drivers, a 190-hp Waukesha 6-NKRU/F1905G standby generator set was installed.

In June 1992, WBI modified Unit #9, a 600-hp Ajax DPC-600 compressor engine, with the high air cylinder modification. This engine modification lowered the nitrogen oxides (NO_X) emissions from 15.5 grams per brake horsepower-hour (g/bhp-hr) to 6.5 g/bhp-hr and also resulted in a minor increase in fuel efficiency.

In May 1993, WBI had an emission source test conducted to determine the NO_X and carbon monoxide (CO) emissions from the 300-hp Ingersoll-Rand 8XVG compressor engine (Unit #4) and the modified 600-hp Ajax DPC-600 compressor engine (Unit #9). The results of the source test for Unit #4, based on averaging the three tests, were 13.29 pounds per hour (lb/hr) or 20.62 g/bhp-hr for NO_X and 2.79 lb/hr or 4.34 g/bhp-hr for CO. The results of the source test for Unit #4 were inconclusive for NO_X because of errors in the testing procedures, but were used to help estimate emissions from Units #4, #5 and #6. The results of the source test for Unit #9, based on averaging the three tests, were 2.91 lb/hr or 2.87 g/bhp-hr for NO_X and 1.05 lb/hr or 1.03 g/bhp-hr for CO.

In addition to the seven compressor engines (Units #4 - #10) and the standby generator, there are eight natural gas-fired boilers/heaters. The boilers/heaters range from 10,000 British thermal units per hour (Btu/hr) to 2.4 million British thermal units per hour (MMBtu/hr) maximum heat input. All of the boilers/heaters were installed at various dates between 1934 and 1987 (Reference Section I.A of this permit analysis). At the time of the initial permit application review; the Saco compressor station had estimated potential NO_X and CO emissions of 567.3 and 176.90 tons per year (ton/yr), respectively. A Best Available Control Technology (BACT) analysis was conducted as part of the permit review process and, as a result of the Department of Environmental Quality's (Department) BACT determination, the permitted potential emissions would be reduced to 474.60 and 223.06 ton/yr for NO_X and CO, respectively, by the addition of control equipment and enforceable emission limits.

The Department issued a Department Decision (DD) for a prevention of significant deterioration of air quality (PSD) permit for the WBI Saco compressor station on January 19, 1995. The Environmental Protection Agency (EPA) filed an appeal on February 3, 1995, to challenge the BACT determination made by the Department. EPA cited a need for national uniformity in making such determinations for a PSD permit. A stipulated settlement agreement (stipulation) between the Department, EPA, and WBI was agreed to, which eliminated the issues raised by EPA in the appeal.

The stipulation required WBI to make modifications to the Saco compressor station in order to reduce the facility's potential NO_X emissions below 250 ton/yr. WBI was required to install and operate air/fuel ratio (AFR) controllers and/or non-selective catalytic reduction (NSCR) units on any or all of Units #4, 5, 6, and 7 in order to keep the combined potential emissions from Units #4, #5, #6, and #7 below 111.0 ton/yr NO_X and 149.0 ton/yr CO. WBI was also required to install and operate all necessary controls by August 1, 1996. Upon issuance of **MAQP #2822-00**, the Saco compressor station was no longer considered a major stationary source, which removed the facility from the PSD permitting requirements. After the installation of the necessary control equipment, NO_X and CO emission limits for Units #4, #5, #6, and #7 were to be established in a permit modification. MAQP #2822-00 became final on May 19, 1995.

On February 12, 1996, the Department received a request for a permit modification, with the proposed emission limits for Units #4, #5, #6, and #7. The modification incorporated the emission control requirements and established NO_X and CO emission limits for Units #4, #5, #6, and #7, as required by Section II.A.6 and II.A.7 of MAQP #2822-00. In addition, the testing, monitoring, and record keeping requirements were updated. **MAQP #2822-01** replaced MAQP #2822-00 on September 1, 1996.
On January 23, 2003, the Department received a letter from WBI dated January 20, 2003. WBI requested the Department to amend MAQP #2822-01 to remove the every 4-year testing requirements from Units #4, #5, #6, #7, #8, #9, and #10 because WBI's Title V Operating Permit #OP2822-00 requires the units to be tested every 6 months.

In addition, on March 14, 2003, the Department received an additional letter from WBI dated March 13, 2003. WBI requested to add a 600-hp Ajax DPC600LE compressor engine (Unit #11) to MAQP #2822-01 according to the provisions of Administrative Rules of Montana (ARM) 17.8.745.

The permit action removed the every 4-year testing requirement for Units #4, #5, #6, #7, #8, #9, and #10 from the permit. Also, the permit action added the 600-hp Ajax compressor engine to the permit according to the provisions of ARM 17.8.745. Emission limits and testing requirements for the 600-hp Ajax compressor engine were incorporated into the permit according to the provisions of ARM 17.8.745(2). Further, the permit format, language, and rule references were updated to reflect current Department permit format, language, and rule references. **MAQP #2822-02** replaced MAQP #2822-01.

On May 9, 2005, the Department received a letter from WBI requesting changes to MAQP #2822-02. The proposed change includes the addition of a 175-kW generator powered by an F18GL Waukesha lean burn engine at the Saco Compressor Station. The generator limits the Waukesha F18GL to 265-hp. The potential emissions from the proposed equipment are less than the de minimis threshold of 15 tons per year. WBI also requested the Department remove the 190-hp Waukesha generator engine, Source 08 (6-NKRU). The permit action updated the permit analysis with the new equipment. An emission inventory for the WBI Saco Compressor Station is contained in Section IV of the permit analysis. **MAQP #2822-03** replaced MAQP #2822-02.

On October 3, 2008, the Department received a letter from WBI requesting changes to MAQP #2822-03. The proposed change included the removal of three Ingersoll-Rand Model 8XVG integral spark ignition reciprocating internal combustion engines (SI RICE), with serial numbers 8FV1264, 9GV1450, and 8GV1718, respectively. These units have been removed from the facility. Additionally, the change request included the removal of a temporary Ajax Model DPC-600LE SI Rice unit which was replaced by an electric prime mover unit which does not have emissions. The Ajax unit was removed in June of 2004. In addition, WBI requested that the engine listings be removed from past permits as well as from the current one. The removal actions are not retroactive to past permits and therefore, under this action, they were not removed from MAQP #2822-03. **MAQP #2822-04** replaced MAQP #2822-03.

On December 10, 2012, the Department received an Administrative Amendment (AA) request from WBI to change the official name of the company from Williston Basin Interstate Pipeline Company to WBI Energy Transmission, Inc. **MAQP #2822-05** replaced MAQP #2822-04.

On April 3, 2013, the Department received a request from WBI to replace a dry bed dehydration system with a TEG dehydration unit. The TEG dehydration system was relocated from the South Baker Compressor station facility. The TEG system will remove water from the natural gas stream and in the process will produce a small increase in VOC and HAP emissions. The new emitting units associated with the equipment included a 0.75 MMBtu/hr reboiler and a TEG dehydration still vent and flash tank relocated from the South Baker Compressor station. The permit language allows concurrent operation for 180 days until the relocated equipment is operating appropriately. **MAQP #2822-06** replaced MAPQ #2822-05

C. Current Permit Action

On May 4, 2021, WBI submitted an Administrative Amendment request to the Department to reduce the emission limit for Oxides of Nitrogen (NO_X) from the Ajax DPC-600 (units 8, 9, and 10) from 8.6 pounds per hour (lb/hr) to 5.4 lb/hr and the Carbon Monoxide (CO) emissions from the Ingersoll-Rand 26KVG (unit 7) reduced from 17.5 lb/hr to 8.0 lb/hr. After these voluntary reductions in potential emissions become enforceable, the Saco Compressor Station will no longer be considered a major source of emissions with respect to the Title V Operating Permit Program. **MAQP #2822-07** replaces MAQP #2822-06.

D. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (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 of Environmental Quality

(Department). Upon request, the Department will provide references for location of complete copies of all applicable rules and regulations or copies where appropriate.

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

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices), and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq*., Montana Code Annotated (MCA).

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

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

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant which 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 Oxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Dioxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter

8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}

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

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

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

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of 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, WBI shall not cause or authorize the use of any street, road or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. (4) Commencing July 1, 1972, no person shall burn liquid or solid fuels containing sulfur in excess of 1 pound of sulfur per million Btu fired. (5) Commencing July 1, 1971, no person shall burn any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions. WBI will utilize natural gas for operating its fuel burning equipment, which will meet this limitation.

6. 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).

    a. 40 CFR 60, Subpart A – General Provisions apply to all equipment or facilities subject to an NSPS Subpart as listed below.

    b. 40 CFR 60, Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. The Saco Compressor Station is not subject to this subpart as the engines were manufactured and installed before the applicability dates outlined in the subpart. However, future engine installations, replacements, or reconstructions may be subject to 40 CFR 60 Subpart JJJJ.

7. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR Part 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 an NESHAP Subpart as listed below:

   b. 40 CFR 63, Subpart HH - National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities. Owners or operators of oil and natural gas production facilities, as defined and applied in 40 CFR Part 63, shall comply with standards and provisions of 40 CFR 63, Subpart HH. Based on previous information provided by WBI, the Saco Compressor Station facility is considered an area source of HAPs that is subject to 40 CFR 63, Subpart HH. For area sources, the affected source includes each TEG glycol dehydration unit. However, because the glycol dehydration unit emits less than 0.9 megagrams (1 ton per year (TPY)) of benzene, it is exempt from the control requirements listed in 40 CFR 63, Subpart HH. Records of the determinations applicable to this exemption must be maintained as required in 40 CFR 63.774(d)(1).

   c. 40 CFR 63, Subpart HHH National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities. In order for a natural gas transmission and storage facility to be subject to 40 CFR 63, Subpart HHH requirements, the facility must be a major source of Hazardous Air Pollutants (HAPs) as determined using the maximum natural gas throughput as calculated in either paragraphs (a)(1) and (a)(2) or paragraphs (a)(2) and (a)(3) of 40 CFR 63, Subpart HHH. Based on the information submitted by WBI, the Saco facility is not subject to the provisions of 40 CFR 63, Subpart HHH because the facility is not a major source of HAPs.

   d. 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE). As an area source, the RICE at WBI will be subject to this rule. However, although the RICE engines are an affected source, per 40 CFR 63.6590(b)(3) they do not have any requirements unless they are new or reconstructed after June 12, 2006. Any RICE engine operated by WBI that is new or reconstructed after June 12, 2006 will be subject to this Maximum Available Control Technology (MACT) standard if the engine remains or will remain at the permitted location for more than 12 months, or a shorter period of time for an engine located at a seasonal source. A seasonal source remains at a single location on a permanent basis (at least 2 years) and operates 3 months or more each year. Although the RICE engines operated by WBI at the Saco

facility were installed prior to June 12, 2006, area source provisions of the MACT requirements may apply to future engines.

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. A permit application and fee were not required because the current permit action was considered administrative.

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 facility to obtain an air quality permit or permit modification if they construct, modify, or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year of any pollutant. WBI has the potential to emit more than 25 tons per year of NO_X, CO, and 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, modification, or use of a source. A permit application was not required for the current permit action because the permit change is considered an administrative permit change. (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. The current permitting action is an administrative permit action with no increase in emissions; therefore, no public notice was required.

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 WBI of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

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

11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or 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 ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under FCAA that it would emit, except as this subchapter would otherwise allow.

   This facility is not a major stationary source since it 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 stationary source having:

   a. PTE > 100 tons/year of any pollutant;

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

   c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) in a serious PM_{10} 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 #2822-07 for WBI, the following conclusions were made:

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

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

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

   d. This facility may become subject to current NSPS 40 CFR 60, Subpart JJJJ.

   e. This facility is subject to area source provisions of a current NESHAP standard (40 CFR 63, Subpart HH) and may become subject to 40 CFR 63, Subpart ZZZZ.

   f. This source is not a Title IV affected source.

   g. This source in not a solid waste combustion unit; and

   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.

      WBI 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.

      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. WBI 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 is not required for the current permit action, because the change is considered administrative.

IV. Emission Inventory

	Tons/Year				
Source	PM_{10}	NO_X	VOC	CO	SO_X
660-hp Ingersoll-Rand 62-KVG (Unit #7)	0.26	20.10	4.80	35.04	0.01
600-hp Ajax DPC-600 (Unit #8)	0.22	23.21	28.91	17.34	0.01
600-hp Ajax DPC-600 (Unit #9)	0.22	23.21	28.91	17.34	0.01
600-hp Ajax DPC-600 (Unit #10)	0.22	23.21	28.91	17.34	0.01
265-hp Waukesha (Saco Gen #1 (175-kW))	0.13	5.11	2.55	7.69	0.01
Petro-Chem Regen. Furnace	0.13	1.09	0.12	0.23	0.01
Plant Boilers #1 & #2	0.07	0.59	0.07	0.12	0.00
Misc. Heaters	0.03	0.27	0.03	0.11	0.00
Total	1.15	96.8	94.30	95.21	0.06

660-hp Ingersoll-Rand 62-KVG (Unit #7)
Horsepower: 660 hp
Hours of operation: 8760 hr/yr

PM_{10} Emissions:

Emission Factor: 10 lb/MMScf (AP-42, Chapter 3, Table 3.2-1, 7/00)
Fuel Consumption: 8500 Btu/hp-hr (Maximum Design)
Calculations: 8500 Btu/hp-hr * 0.001041 Scf/Btu * 660 hp * 8760 hr/yr = 51,158,488 Scf/yr
51,158,488 Scf/yr * 10 lb/MMScf gas * 0.0005 ton/lb = 0.26 ton/yr

NO_X Emissions:

Emission factor: 3.16 gram/hp-hr (Based on company information)
Calculations: 3.16 gram/hp-hr * 660 hp* 0.002205 lb/gram = 4.60 lb/hr
4.60 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 20.10 ton/yr

VOC Emissions:

Emission factor: 0.75 gram/hp-hr (Based on company information)
Calculations: 0.75 gram/hp-hr* 660 hp* 0.002205 lb/gram = 1.10 lb/hr
1.10 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 4.80 ton/yr

CO Emissions:

Emission factor: 8.0 lb/hr (Based on historical testing data)
Calculations: 8.0 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 35.04 ton/yr

SO_X Emissions:

Emission factor: 0.002 gram/hp-hr (AP-42, Chapter 3, Table 3.2-1, 7/00)
Calculations: 0.002 gram/hp-hr * 660 hp* 0.002205 lb/gram = 0.003 lb/hr
0.003 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.01 ton/yr

600-hp Ajax DPC-600 (Unit #8)
Horsepower: 600 hp
Hours of operation:8760 hr/yr

PM_{10} Emissions:

Emission Factor: 10 lb/MMScf (AP-42, Chapter 3, Table 3.2-2, 7/00)
Fuel Consumption:8100 Btu/hp-hr (Maximum Design)
Calculations: 8100 Btu/hp-hr * 0.001041 Scf/Btu * 600 hp * 8760 hr/yr = 44,617,133 Scf/yr
44,617,133 Scf/yr * 10 lb/MMScf gas * 0.0005 ton/lb = 0.22 ton/yr

NO_X Emissions:

Emission factor: 5.3 lb/hr (based on historical testing data)
Calculations: 5.3 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 23.14

VOC Emissions:

Emission factor: 5.00 gram/hp-hr (Based on BACT determination)
Calculations: 5.00 gram/hp-hr* 600 hp* 0.002205 lb/gram = 6.62 lb/hr
6.62 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 28.91 ton/yr

CO Emissions:

Emission factor: 3.00 gram/hp-hr (Based on BACT determination)
Calculations: 3.00 gram/hp-hr * 600 hp* 0.002205 lb/gram = 3.97 lb/hr
3.97 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 17.34 ton/yr

SO_X Emissions:

Emission factor: 0.002 gram/hp-hr (AP-42, Chapter 3, Table 3.2-1, 7/00)
Calculations: 0.002 gram/hp-hr * 600 hp * 0.002205 lb/gram = 0.003 lb/hr
0.003 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.01 ton/yr

600-hp Ajax DPC-600 (Unit #9)
Horsepower: 600 hp
Hours of operation: 8760 hr/yr
PM_{10} Emissions:

Emission Factor: 10 lb/MMScf (AP-42, Chapter 3, Table 3.2-1, 7/00)
Fuel Consumption: 8100 Btu/hp-hr (Maximum Design)
Calculations: 8100 Btu/hp-hr * 0.001041 Scf/Btu * 600 hp * 8760 hr/yr = 44,617,133 Scf/yr
44,617,133 Scf/yr * 10 lb/MMScf gas * 0.0005 ton/lb = 0.22 ton/yr

NO_X Emissions:

Emission factor: 5.3 lb/hr (based on historical testing data)
Calculations: 5.3 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 23.14

VOC Emissions:

Emission factor: 5.00 gram/hp-hr (Based on BACT determination)
Calculations: 5.00 gram/hp-hr* 600 hp* 0.002205 lb/gram = 6.62 lb/hr
6.62 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 28.91 ton/yr

CO Emissions:

Emission factor: 3.00 gram/hp-hr (Based on BACT determination)
Calculations: 3.00 gram/hp-hr * 600 hp* 0.002205 lb/gram = 3.97 lb/hr
3.97 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 17.34 ton/yr

SO_X Emissions:

Emission factor: 0.002 gram/hp-hr (AP-42, Chapter 3, Table 3.2-1, 7/00)
Calculations: 0.002 gram/hp-hr * 600 hp * 0.002205 lb/gram = 0.003 lb/hr
0.003 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.01 ton/yr

<u>600-hp Ajax DPC-600 (Unit #10)</u>
Horsepower: 600 hp
Hours of operation: 8760 hr/yr

PM_{10} Emissions:

Emission Factor: 10 lb/MMScf (AP-42, Chapter 3, Table 3.2-1, 7/00)
Fuel Consumption:8100 Btu/hp-hr (Maximum Design)
Calculations: 8100 Btu/hp-hr * 0.001041 Scf/Btu * 600 hp * 8760 hr/yr = 44,617,133 Scf/yr
44,617,133 Scf/yr * 10 lb/MMScf gas * 0.0005 ton/lb = 0.22 ton/yr

NO_X Emissions:

Emission factor: 5.3 lb/hr (based on historical testing data)
Calculations: 5.3 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 23.14

VOC Emissions:

Emission factor: 5.00 gram/hp-hr (Based on BACT determination)
Calculations: 5.00 gram/hp-hr* 600 hp* 0.002205 lb/gram = 6.62 lb/hr
6.62 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 28.91 ton/yr

CO Emissions:

Emission factor: 3.00 gram/hp-hr (Based on BACT determination)
Calculations: 3.00 gram/hp-hr * 600 hp* 0.002205 lb/gram = 3.97 lb/hr

3.97 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 17.34 ton/yr

SO_X Emissions:

Emission factor: 0.002 gram/hp-hr (AP-42, Chapter 3, Table 3.2-1, 7/00)
Calculations: 0.002 gram/hp-hr * 600 hp * 0.002205 lb/gram = 0.003 lb/hr
0.003 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.01 ton/yr

Saco Gen #1 265-hp Waukesha (175-kW)
Brake Horse Power: 265 hp
Hours of Operation: 8,760 hr/yr
Fuel Combustion: 2.86 MMBtu/hr
Fuel Heating Value: 1,050 Btu/SCF or 0.001 MMSCF/MMBtu

PM_{10} Emissions

Emission Factor: 10.0 lb/MMSCF (AP-42, Chapter 3, Table 3.2-1, 7/00)
Calculations: 10.0 lb/MMSCF * 0.001 MMSCF/MMBtu * 2.86 MMBtu/hr = 0.03 lb/hr
0.03 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.13 ton/yr

NO_X Emissions

Emission Factor: 2.00 g/bhp-hr {BACT and de minimis Determination}
Calculations: 2.00 g/bhp-hr * 265 bhp * 0.002205 lb/gram = 1.17 lb/hr
1.17 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 5.11 ton/yr

CO Emissions

Emission Factor: 3.00 g/bhp-hr {BACT and de minimis Determination}
Calculations: 3.00 g/bhp-hr * 265 bhp * 0.002205 lb/gram = 1.76 lb/hr
1.76 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 7.69 ton/yr

VOC Emissions

Emission Factor: 1.00 g/bhp-hr {BACT and de minimis Determination}
Calculations: 1.00 g/bhp-hr * 265 bhp * 0.002205 lb/gram = 0.58 lb/hr
0.58 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 2.55 ton/yr

SO_X Emissions

Emission Factor: 0.60 lb/MMSCF (AP-42, Chapter 3, Table 3.2-1, 7/00)
Calculations: 0.60 lb/MMSCF * 0.001 MMSCF/MMBtu * 2.86 MMBtu/hr = 0.0017 lb/hr
0.0017 lb/hr * 8,760 hr/yr * 0.0005 ton/lb = 0.0075 ton/yr

2.4 MMBtu/hr Petro-Chem Regen. Furnace
Hours of Operation: 8760
Fuel Consumption: 2.40 MMBtu/hr * 0.001041 scf/Btu * 8760 hr/yr = 21.8860 MMScf/yr

PM_{10} Emissions:

Emission Factor: 12 lb/MMScf (AP-42, Chapter 1, 1.4-1, 10/92)
Fuel Consumption: 21.8860 MMScf/yr (Information from company)
Calculations: 21.89MMScf/yr * 12 lb/MMScf gas * 0.0005 ton/lb = 0.13 ton/yr

NO_X Emissions:

Emission Factor: 100 lb/MMScf (AP-42, Chapter 1, 1.4-2, 10/92)
Fuel Consumption: 21.886 MMScf/yr (Information from company)
Calculations: 21.89 MMScf/yr * 100 lb/MMScf gas * 0.0005 ton/lb = 1.09 ton/yr

VOC Emissions:

Emission Factor: 11.00 lb/MMScf (AP-42, Chapter 1, 1.4-3, 10/92)
Fuel Consumption: 21.886 MMScf/yr (Information from company)
Calculations: 21.89 MMScf/yr * 11.00 lb/MMScf gas * 0.0005 ton/lb = 0.12 ton/yr

CO Emissions:

Emission Factor: 21 lb/MMScf (AP-42, Chapter 1, 1.4-2, 10/92)
Fuel Consumption: 21.886 MMScf /yr (Information from company)
Calculations: 21.89 MMScf /yr * 21 lb/MMScf gas * 0.0005 ton/lb = 0.23 ton/yr
SO_X Emissions:

Emission Factor: 0.60 lb/MMScf (AP-42, Chapter 1, 1.4-2, 10/92)
Fuel Consumption: 21.886 MMScf /yr (Information from company)
Calculations: 21.89 MMScf/yr * 0.60 lb/MMScf gas * 0.0005 ton/lb = 0.01 ton/yr

Plant Boilers #1 & #2

Type	Make/Model	Size
Space Heater	Weil-McLain LGB-6	650,000 Btu/hr
Space Heater	Weil-McLain LGB-6	650,000 Btu/hr
		1,300,000 Btu/hr

Fuel Consumption:1.3 MMBtu/hr * 0.001041 MMScf/MMBtu * 8760 hr/yr = 11.85 MMScf/yr

PM_{10} Emissions:

Emission Factor: 12.0 lb/MMScf (AP-42, Chapter 1, 1.4-1, 10/92)
Fuel Consumption: 11.8549 MMScf/yr (Information from company)
Calculations: 11.85 MMScf/yr * 12.0 lb/MMScf gas * 0.0005 ton/lb = 0.07 ton/yr

NO_X Emissions:

Emission Factor: 100 lb/MMScf (AP-42, Chapter 1, 1.4-2, 10/92)
Fuel Consumption: 11.8549 MMScf/yr (Information from company)
Calculations: 11.85 MMScf /yr * 100 lb/MMScf gas * 0.0005 ton/lb = 0.59 ton/yr

VOC Emissions:

Emission Factor: 11.0 lb/MMScf (AP-42, Chapter 1, 1.4-3, 10/92)
Fuel Consumption: 11.8549 MMScf/yr (Information from company)
Calculations: 11.85 MMScf/yr * 11.0 lb/MMScf gas * 0.0005 ton/lb = 0.07 ton/yr

CO Emissions:

Emission Factor: 21 lb/MMScf (AP-42, Chapter 1, 1.4-2, 10/92)
Fuel Consumption: 11.8549 MMScf/yr (Information from company)
Calculations: 11.85 MMScf/yr * 21 lb/MMScf gas * 0.0005 ton/lb = 0.12 ton/yr

SO_X Emissions:

Emission Factor: 0.6 lb/MMScf (AP-42, Chapter 1, 1.4-2, 10/92)
Fuel Consumption: 11.8549 MMScf/yr (Information from company)
Calculations: 11.85 * MMScf/yr * 0.6 lb/MMScf gas * 0.0005 ton/lb = 0.00 ton/yr

Miscellaneous Heaters

Type	Make/Model	Size
Water Heater	A.O. Smith KGA 40	40,000 Btu/hr
Aux. Bldg Heater	Modine PA 200 AB	200,000 Btu/hr
Aux. Garage Heater	Janitrol 68-130-8	130,000 Btu/hr
Shop Heater	N/A	250,000 Btu/hr
Meter House Heater	Breust	10,000 Btu/hr
		630,000 Btu/hr

Fuel Consumption 0.63 MMBtu/hr * 0.001041 MMScf/MMBtu * 8760 hr/yr = 5.7451 MMScf/yr

PM_{10} Emissions:

Emission Factor: 11.18 lb/MMScf (AP-42, Chapter 1, 1.4-1, 10/92)
Fuel Consumption: 5.74507 MMScf/yr (Information from company)
Calculations: 5.75 MMScf/yr * 11.18 lb/ MMScf gas * 0.0005 ton/lb = 0.03 ton/yr

NO_X Emissions:

Emission Factor: 94 lb/ MMScf (AP-42, Chapter 1, 1.4-2, 10/92)
Fuel Consumption: 5.74507 MMScf/yr (Information from company)
Calculations: 5.75 MMScf /yr * 94 lb/MMScf gas * 0.0005 ton/lb = 0.27 ton/yr

VOC Emissions:

Emission Factor: 11.00 lb/MMScf (AP-42, Chapter 1, 1.4-3, 10/92)
Fuel Consumption: 5.74507 MMScf/yr (Information from company)
Calculations: 5.75 MMScf /yr * 11.00 lb/ MMScf gas * 0.0005 ton/lb = 0.03 ton/yr

CO Emissions:

Emission Factor: 40 lb/ MMScf (AP-42, Chapter 1, 1.4-2, 10/92)
Fuel Consumption: 5.74507 MMScf/yr (Information from company)
Calculations: 5.75 MMScf /yr * 40 lb/MMScf gas * 0.0005 ton/lb = 0.11 ton/yr

SO_X Emissions:

Emission Factor: 0.60 lb/MMScf (AP-42, Chapter 1, 1.4-2, 10/92)
Fuel Consumption : 5.74507 MMScf/yr (Information from company)
Calculations: 5.75 MMScf/yr * 0.60 lb/MMScf gas * 0.0005 ton/lb = 0.00 ton/yr

WBI Saco Dehyration System

	Emissions Tons/Year [PTE]								
Emission Source	PM	PM_{10}	$PM_{2.5}$	$PM_{Cond.}$	CO	NO_x	SO_2	VOC	Xylene
Reboiler	0.03	0.03	0.03	0.02	0.29	0.34	0.002	0.019	0.00
Dehydration Still Vent and Flash Tank (Company Provided)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.24	5.10
EMISSIONS	0.03	0.03	0.03	0.02	0.29	0.34	0.00	7.26	5.10

a. Emission Inventory reflects enforceable limits on hours of operation
CO, carbon monoxide
NO_X, oxides of nitrogen
PM, particulate matter including condensible fraction
PM_{10}, particulate matter with an aerodynamic diameter of 10 microns or less including condensible fraction
$PM_{2.5}$, particulate matter with an aerodynamic diameter of 2.5 microns or less including condensible fraction
PM_{Cond}, Condensable particulate matter
SO_2, sulfur dioxide
TPY, tons per year
VOC, volatile organic compounds

Reboiler

Process Rate:	0.75	MMBtu/hr	One Unit	960 BTU/scf	
Operating Hours	8760	hours/year		0.001042	MMSCF/MMBtu
	0.000781	MMS			
	25	cf/hr			

PM Emissions:

Emission Factor	7.6	lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)	
Calculations	(7.6 lbs MMscf) * (0.0008 MMScf/hr) =	0.006	lbs/hr
	(0.006 lbs/hr) * (8760 hrs/yr) *(0.0005 tons/lb) =	0.026	TPY

Filterable PM_{10} Emissions= $PM_{2.5}$
Emissions:

Emission Factor	1.9	lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)		
Calculations	(1.9 lbs/MMscf) * (0.0008 MMScf/hr) =		0.00 148	lbs/ hr
	(0.001 lbs/hr) * (8760 hrs/yr) *(0.0005 tons/lb) =		0.00 65	TPY

PM_{Cond}:

Emission Factor	5.7	lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)		
Calculations	(5.7 lbs/MMscf) * (0.0008 MMScf/hr) =		0.00 4	lbs/ hr
	(0.004 lbs/hr) * (8760 hrs/yr) *(0.0005 tons/lb) =		0.02 0	TPY

PM10 Filterable + Condensible.= PM2.5 Filterable + Condensible	0.00 6	lbs/ hr
	0.02 6	TPY

CO
Emissions:

Emission Factor	84	lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)		
Calculations	(5.7 lbs/MMscf) * (0.0008 MMScf/hr) =		0.06 6	lbs/ hr
	(0.066 lbs/hr) * (8760 hrs/yr) *(0.0005 tons/lb) =		0.29	TPY

NOx
Emissions:

Emission Factor	100.000	lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)		
Calculations	(100 lbs/MMscf) * (0.0008 MMScf/hr) =		0.07 8	lbs/ hr
	(0.078 lbs/hr) * (8760 hrs/yr) *(0.0005 tons/lb) =		0.34	TPY

SO_2
Emissions:

Emission Factor	0.60000	lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)		
Calculations	(0.6 lbs/MMscf) * (0.0008 MMScf/hr) =		0.00 047	lbs/ hr
	(0.0005 lbs/hr) * (8760 hrs/yr) *(0.0005 tons/lb) =		0.00 2	TPY

VOC
Emissions:

Emission Factor	5.50000	lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)		
Calculations	(5.5 lbs/MMscf) * (0.0008 MMScf/hr) =		0.00 4	lbs/ hr
	(0.004 lbs/hr) * (8760 hrs/yr) *(0.0005 tons/lb) =		0.01 9	TPY

V. Existing Air Quality

The air quality of this area is classified as either better than National Standards or unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for criteria pollutants.

VI. Ambient Air Impact Analysis

The Department determined that the impact from this permitting action will be minor. The Department believes it will not cause or contribute to a violation of any ambient air quality standard.

VII. Taking and 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?

YES	NO	
	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

This permitting action is considered an administrative action; therefore, an Environmental Assessment is not required.

Analysis Prepared By: John P. Proulx
Date: May 24, 2021