August 27, 2024

Michael R. Cashell
NorthWestern Energy
Flathead Valley Compressor Station
11 East Park Street
Butte, MT 59701

Sent via email: Michael.cashell@northwestern.com

RE: Final Permit Issuance for MAQP #5309-00

Dear Michael R. Cashell:

Montana Air Quality Permit (MAQP) #5309-00 is deemed final as of August 27, 2024, by DEQ. This permit is for NorthWestern Energy, Flathead Valley Comperssor Station, a compressor station. All conditions of the Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For DEQ,

Craig Henrikson

Craig Henrikson
Air Quality Engineer
Air Quality Bureau
(406) 444-6711

Emily Hultin
Air Quality Engineering Scientist
Air Quality Bureau
(406) 444-2049

Montana Department of Environmental Quality
Air, Energy & Mining Division
Air Quality Bureau

Montana Air Quality Permit #5309-00

NorthWestern Energy
Flathead Valley Compressor Station
Section 35, Township 32N, Range 19W
11 East Park Street, Butte, MT 59701

August 27, 2024

MONTANA AIR QUALITY PERMIT

Issued To:	MAQP: #5309-00
NorthWestern Energy Corporation	Application Complete: 06/13/2024
11 East Park Street	Preliminary Determination Issued: 07/19/2024
Butte, MT	DEQ's Decision Issued: 08/09/2024
59701	Permit Final: 8/27/2024

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to NorthWestern Energy Corporation (NWE), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended, for the following:

Section I: Permitted Facilities

A. Permitted Equipment

The proposed compressor engine station will be composed of two compressor engines rated up to 1,380 brake horsepower (bhp) each and a natural gas-fueled emergency generator with a maximum engine power of 80 bhp (60 kW). Equipment at the facility will also include two small natural gas boilers each rated up to 1 MMBtu/hr and building heaters.

B. Plant Location

The facility location is in the southeast quarter of the southeast quarter in Section 35, Township 32 North, Range 19 West, in Flathead County, Montana.

Section II: Conditions and Limitations

A. Emission Limitations

1. NWE 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).

2. NWE 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).

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

4. NWE shall utilize an Air Fuel Ratio (AFR) Controller on each of the two compressor engines (ARM 17.8.749 and ARM 17.8.752).

5. NWE shall install, operate, and maintain an oxidation catalyst to minimize the emissions for CO and VOCs (ARM 17.8.749 and ARM 17.8.752).

6. NWE shall use pipeline quality natural gas to minimize the emissions of SO_2, PM_{10} and $PM_{2.5}$ (ARM 17.8.749 and ARM 17.8.752).

7. Emissions from each compressor engine set shall not exceed the following based on a 1-hour average during steady state operation (ARM 17.8.749 and ARM 17.8.752):

   (a) NO_X 0.5 grams per brake horsepower hour (g/bhp-hr)
   (b) CO 0.5 g/bhp-hr
   (c) VOC 0.7 g/bhp-hr

8. NWE shall comply with all applicable standards and limitations, and the reporting, recordkeeping and notification requirements contained in 40 CFR 60, Subpart A, 40 CFR 60, Subpart JJJJ, 40 CFR 60, Subpart OOOOb, 40 CFR 63, Subpart ZZZZ (ARM 17.8.340 and 40 CFR 60, Subpart A, 40 CFR 60 Subpart JJJJ, 40 CFR 60, Subpart OOOOb, and 40 CFR 63, Subpart ZZZZ).

9. NWE shall limit the hours of operation, of the emergency generator such that the sum of the hours of operation of the emergency generator does not exceed 500 hours of operation during any rolling 12-month time period (ARM 17.8.749).

B. Testing Requirements

1. For the compressor engines, NWE shall conduct performance testing described in 40 CFR 60, Subpart JJJJ, or as required by the Department of Environmental Quality (DEQ) (40 CFR 60, Subpart A; 40 CFR 60 Subpart JJJJ; ARM 17.8.105, 17.8.340, and 17.8.749).

2. NWE shall conduct performance testing described in 40 CFR 60, Subpart OOOOb, or as required by the DEQ (40 CFR 60, Subpart A; 40 CFR 60 Subpart OOOOb; ARM 17.8.105, 17.8.340, and 17.8.749).

3. The compressor engines will be subject to 40 CFR 63, Subpart ZZZZ and the applicable emissions limit requirements and compliance tests identified in this regulation (40 CFR 63, Subpart A; 40 CFR 63, Subpart ZZZZ; ARM 17.8.342 and ARM 17.8.749).

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

5. DEQ may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. NWE shall supply DEQ with annual production information for all emission points, as required by DEQ 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 DEQ by the date required in the emission inventory request. Information shall be in the units required by DEQ. 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. NWE shall notify DEQ 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 DEQ, in writing, 10 days prior to startup 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(l)(d) (ARM 17.8.745).

3. All records compiled in accordance with this permit must be maintained by NWE 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 DEQ, and must be submitted to DEQ upon request. These records may be stored at a location other than the plant site upon approval by DEQ (ARM 17.8.749).

4. NWE shall document, by month, the hours of operation of the emergency generator. By the 25th day of each month, NWE shall total the hours of operation of the emergency generator for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.9. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

5. NWE 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 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. Notification

NWE shall provide DEQ with written notification of the following information within the specified time periods (ARM 17.8.749):

1. Start-up date of the two Caterpillar G3516J natural gas compressor engines within 15 days of the start-up date of the compressor engines.

2. Start-up date of the two small boilers within 15 days of the start-up of the boilers.

3. NWE shall provide any required notifications required under 40 CFR 60, Subpart JJJJ and 40 CFR 63, Subpart ZZZZ (40 CFR 60, Subpart JJJJ; 40 CFR 63, Subpart ZZZZ; ARM 17.8.340 and ARM 17.8.342).

SECTION III: General Conditions

A. Inspection – NWE shall allow DEQ'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 such as Continuous Emission Monitoring Systems (CEMS) or Continuous Emission Rate Monitoring Systems (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 NWE fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving NWE 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 DEQ's decision may request, within 15 days after DEQ renders its decision, upon affidavit setting forth the grounds therefor, 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 DEQ'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 DEQ'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, DEQ's decision on the application is final 16 days after DEQ'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 DEQ at the location of the source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by NWE 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 Analysis
NorthWestern Energy
MAQP #5309-00

I. Introduction/Process Description

NorthWestern Energy (NWE) proposes to construct and operate a compressor engine station. The facility is located in Flathead County, Montana and is known as the Flathead Valley Compressor Engine Station (FVCS)

A. Permitted Equipment

The generating units proposed for the FVCS consist of: 2 Caterpillar G3516J (Cat) compressor engines rated at 1380 bhp each, one natural gas-fueled emergency generator with a maximum engine power rating of 80 bhp (60 kW), two small natural gas boilers each rated up to 1 MMBtu/hr, and building heaters.

B. Source Description

The emitting units associated with this facility are the 2 compressor engines, the two small natural gas boilers, one emergency generator, and the building heaters.

C. Response to Public Comments

Facility Comments:

Person/Group Commenting	Permit Reference	Comment	DEQ Response
Bison Engineering on behalf of NEW	Section 11.7.b	The CO 0.2 g/bhp-hr emission limit appears to be a typographical error. The 40 CFR 60, Subpart JJJJ, Table 1 limits were proposed for 2.0 g/bhp-hr CO as displayed in Section IV: Emissions Inventory, Figure 2. The 2.0 g/bhp-hr CO limit should be updated in Section II.7.b to match the Compressor Engine Emissions Inventory. III-BACT Determination (Page 14) – NWE did not propose to install an oxidation catalyst technology with a CO emission limit of 0.2 g/bhp-hr. Bison submitted a revised BACT analysis to DEQ with a comparison to similar engines permitted by DEQ. A revised BACT limit of 0.5 g/bhp-hr was proposed by Bison.	DEQ determined that the incorrect emissions numbers were included in the CO BACT analysis in the application that was submitted to DEQ. The revised CO emission factor of 0.5 g/bhp-hr has been reviewed and approved as the new CO emission factor. The BACT analysis and CO BACT limit were updated accordingly. The Emissions Inventory has been updated to reflect this change as well.

Bison Engineering on behalf of NWE	Permit Analysis, Section II.H.2d and Section II.H.2e	The proposed facility is subject to both NSPS and MACT standards while still requiring a minor source (MAQP) permit. A Title V permit is not required for this proposed facility.	DEQ has revised the language to reflect the current NSPS and NESHAPs standards that are listed in the permit as being applicable.

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 (DEQ). Upon request, DEQ 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 DEQ, 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 DEQ.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by DEQ, 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).

   NWE 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 DEQ upon request.

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

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that

may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

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

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}
11. ARM 17.8.230 Fluoride in Forage

NWE 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, NWE 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 17.8.316 Incinerators. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any incinerator, particulate matter in excess of 0.10 grains per standard cubic foot of dry flue gas, adjusted to 12% carbon dioxide and calculated as if no auxiliary fuel had been used. Further, no person shall cause or authorize to be discharged into the outdoor

atmosphere from any incinerator emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes.

6. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.

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

8. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). NWE is considered an NSPS affected facility under 40 CFR Part 60 and is subject to the requirements of the following subparts.

    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.

    c. 40 CFR 60. Subpart OOOOb—Standards of Performance for Crude Oil and Natural Gas Facilities for Which Construction, Modification, or Reconstruction Commended After December 6, 2022

9. ARM 17.8.341 Emission Standards for Hazardous Air Pollutants. This source shall comply with the standards and provisions of 40 CFR Part 61, as appropriate.

    a. 40 CFR 61, Subpart A – General Provisions apply to all equipment or facilities subject to a NESHAP Subpart as listed below:

10. 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 any NESHAP Subpart as listed below:

    b. 40 CFR 63, Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

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

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

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

E. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to DEQ. NWE submitted the appropriate permit application fee for the current permit action.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to DEQ by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by DEQ. 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. DEQ may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.

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

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit 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. NWE has a PTE greater than 25 tons per year of 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. NWE submitted the required permit application for the current permit action. 7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. NWE submitted an affidavit of publication of public notice for the June 4, 2024, issue of the *Daily Interlake*, a newspaper of general circulation in the Town of Kalispell in Flathead County, as proof of compliance with the public notice requirements.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by DEQ 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 DEQ 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 NWE 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 DEQ's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.760 Additional Review of Permit Applications. This rule describes DEQ's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.

12. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or 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.

13. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules

adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

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

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

16. ARM 17.8.770 Additional Requirements for Incinerators. This rule specifies the additional information that must be submitted to DEQ for incineration facilities subject to 75-2-215, Montana Code Annotated (MCA).

17. ARM 17.8.771 Mercury Emission Standards for Mercury-Emitting Generating Units. This rule identifies mercury emission limitation requirements, mercury control strategy requirements, and application requirements for mercury-emitting generating units.

G. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

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

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

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:

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

b. PTE > 10 tons/year of any one hazardous air pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as DEQ 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. (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 #5309-00 for NWE, the following conclusions were made:

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

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

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

d. This facility is subject to the following NSPS Subparts: A, JJJJ, and OOOOb.

e. This facility is subject to the following NESHAP standards: Subpart A and ZZZZ.

f. This source is not a Title IV affected source, or a solid waste combustion unit.

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

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

3. ARM 17.8.1207 Certification of Truth, Accuracy, and Completeness.

NWE 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.

Based on these facts, DEQ determined that NWE will be a minor source of emissions as defined under Title V. However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit, NWE will be required to obtain a Title V Operating Permit.

III. BACT Determination

A BACT determination is required for each new or modified source. NWE 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 submitted by NWE in permit application #5309-00, addressing some available methods of controlling CO, NOx, SO_2, PM_{10}, and VOC emissions from the compressor engines. DEQ reviewed these methods, as well as previous BACT determinations. The following control options have been reviewed by DEQ in order to make the following BACT determination.

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

Carbon Monoxide BACT for Compressor Engine

The proposed compressor engines are new lean-burn engines. Emission rates for the BACT analysis were provided by the engine and catalyst manufacturers. The 40 CFR 60, Subpart JJJJ limits were also considered in the following BACT analysis. A top-down CO BACT analysis for the proposed compressor engine has been performed to determine the CO emission limit and appropriate control devices.

Generally available information that has been summarized by DEQ in current BACT determinations for compressor engines has been used as a reference to describe the available CO control options.

Step 1 - Identify All Control Technologies

Potential CO emissions from lean-burn engines can be controlled using oxidation catalysts as an add-on control. Catalytic oxidation is being proposed by NWE for the FVCS compressor engines. This technology cannot be applied to rich-burn engines because of the inherently low oxygen concentrations of the exhaust stream. Excess oxygen is needed by the catalytic oxidizers to efficiently oxidize CO to CO_2. Non-selective catalytic reduction (NSCR) units and/or air-to-fuel ratio (AFR) controllers can be used to control CO and NOx emission rates from rich burn engines. Because the proposed engines will use lean-burn technology, NSCR will not be considered further.

The following is a list of available CO control options:
-Rich-burn engines with NSCR and AFR (not considered);
-Lean-burn engines without controls;
-Lean-burn engines with catalytic oxidation and AFR

Lean-Burn Engines Without Add-on Controls
The proposed compressor engines are designed as lean-burn engines, with a target exhaust oxygen content of 9%. Lean-burn engines use a pre-combustion chamber to enclose and ignite a rich mixture of air and fuel. The resulting ignition front fires into the larger main cylinder that contains a much leaner fuel mixture. Staging the combustion allows for burning a leaner fuel mixture that results in lowering of peak flame temperatures. Lower combustion

temperature assures lower NOx concentrations in the exhaust gas stream; however, excess air in the fuel/air mixture can result in increased CO emissions.

Lean-burn engines are designed to operate with excess oxygen, which means a lean fuel mixture. Lean-burn engines with no add-on controls typically have relatively high CO emission rates and usually a catalytic oxidation unit is employed to reduce the CO emissions.

Lean-Burn Engine with Add-on Catalytic Oxidation

Catalytic oxidation is a post-combustion technology that can be applied to oxidize CO emissions from lean-burn engines. In a catalytic oxidation system, CO passes over a catalyst, usually a noble metal, which oxidizes CO into CO_2 at efficiencies of 70% to 90%. Oxidation catalysts are only applicable to lean-burn engines because a high oxygen concentration is needed for the catalyst to oxidize the CO to CO_2.

Step 2 - Eliminate Technically Infeasible Control Options

NSCR applied to a lean-burn engine is technically infeasible because the NSCR needs a rich fuel-to-air ratio to operate effectively. NSCR is not considered technically feasible for this BACT analysis.

The remaining engine control technologies are considered technically feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Table 1 lists the CO control technologies and expected CO emission rates for the various CO control options. The lean-burn control option includes both CO catalyst and AFR controllers. These control options were analyzed together in recognition of current practice in applying emission controls to compressor engines. Ranking of the control technologies was based on an emission rate in term of grams per brake horsepower-hour (g/bhp-hr). Ranking the control technologies in this manner provides an even comparison between engines and delivers a top-rated control technology that will result in the lowest level of emissions.

Table 1. Ranked CO Control Technology Effectiveness

Control Technology	CO Reduction (% Control)	CO Emission Rate (g/bhp-hr)
Lean-Burn With CO Catalyst and AFR	90	0.5
Lean-Burn Without Controls	0	2.0

Step 4 - Evaluate Most Effective Controls and Document Results

A lean-burn engine with a CO catalyst and AFR controller has the highest level of controls for CO emissions. The use of a lean-burn engine with a CO catalyst and AFR controller has been determined to be economically feasible with little potential for adverse environmental and energy impacts. Because this option offers the lowest emission rate of the feasible control technology options, no further analysis is necessary.

Step 5 - Identify BACT

NWE provided a revised BACT analysis after the preliminary determination was issued based on discussions with DEQ on whether a 2.0 or 0.2 g/bhp-hr was proposed. NWE provided the following comparison to similarly permitted engines from two other permitted NWE facilities in Montana.

Site	Engine	Permit Limit	Test Result
Absarokee EU#01	CAT G3516B, 1380 bhp AFR and oxi-cat	0.5 g/bhp-hr 1.52 lb/hr	0.036 g/bhp-hr 0.11 lb/hr (2019)
Absarokee EU#02	CAT G3516B, 1380 bhp AFR and oxi-cat	0.5 g/bhp-hr 1.52 lb/hr	0.033 g/bhp-hr 0.07 lb/hr (2020)
Absarokee EU#03	CAT G3516B, 1380 bhp AFR and oxi-cat	0.5 g/bhp-hr 1.52 lb/hr	0.029 g/bhp-hr 0.06 lb/hr (2020)
Absarokee EU#03	CAT G3516B, 1380 bhp AFR and oxi-cat	0.5 g/bhp-hr 1.52 lb/hr	0.028 g/bhp-hr 0.06 lb/hr (2023)
Belfry EU#01	CAT G3516B, 1380 bhp AFR and oxi-cat	0.5 g/bhp-hr 1.52 lb/hr	0.03 g/bhp-hr 0.08 lb/hr (2021)
Belfry EU#02	CAT G3516B, 1380 bhp AFR and oxi-cat	0.5 g/bhp-hr 1.52 lb/hr	0.05 g/bhp-hr 0.12 lb/hr (2021)
Belfry EU#03	CAT G3516B, 1380 bhp AFR and oxi-cat	0.5 g/bhp-hr 1.52 lb/hr	0.02 g/bhp-hr 0.05 lb/hr (2022)

NWE proposes to install oxidation catalyst technology on the compressor engines, with a permitted CO emission limit of 0.5 g/bhp-hr for a lean-burn engine with an oxidation catalyst and AFR controller. A lean-burn engine with an oxidation catalyst is used frequently in the natural gas compression industry. Source tests for these engines have demonstrated compliance with the proposed permit limit.

NO_x BACT

A top-down BACT analysis has been performed to determine the NO_x BACT emission limit and appropriate control devices. Generally available information that has been summarized by DEQ in current BACT determinations for compressor engines has been used as a reference to describe the available NO_x control options.

Step 1 – Identify All Available NOx Control Technologies

When appropriate, emissions from lean-burn or lean-burn retrofit engines with inherently low NO_x emission rates can be further reduced with selective catalytic reduction (SCR) units. NO_x emissions from rich-burn four-stroke compressor engines are typically controlled using non-selective catalytic reduction (NSCR) units and/or air-to-fuel ratio (AFR) controllers to control both CO and NO_x emission rates. As discussed earlier, this BACT analysis is only considering lean-burn compressor engines, as the proposed engines for this project are existing, lean-burn engines.

NSCR can be used to oxidize NO_x into N_2. However, in order to achieve maximum performance, 80% to 90% reduction of NO_x concentration, the engine must burn a rich fuel mixture, causing the engine to operate less efficiently. NSCR is not a viable control option to

control NO_x on a lean-burn engine.

AFR controllers are assumed to be required as part of all add-on pollution control options. Engines with only AFR controllers were not analyzed as control options. The following is a list of available NO_x control options for compressor engines:

-Lean-burn engines without controls;
-Lean-burn engines with SCR and AFR;
-Rich-burn engines with NSCR and AFR (not considered)

Lean-Burn Engines With No Add-on Controls

Lean-burn engines are designed to operate with excess oxygen, which means a lean fuel mixture. Lean-burn engines with no add-on controls have inherently low NOx emissions. The lean-burn engine uses a pre-combustion chamber to enclose and ignite a rich mixture of air and fuel. The resulting ignition front fires into the larger main cylinder that contains a much leaner fuel mixture. Staging the combustion allows for burning a leaner fuel mixture that results in lowering of peak flame temperatures. Lower combustion temperature assures lower NO_x concentrations in the exhaust gas stream; however, excess air in the fuel/air mixture can result in increased CO emissions.

Lean-Burn Engines With SCR and AFR Controllers

As stated earlier, SCR is only applicable to lean-burn engines because of the required oxygen content of the exhaust stream. SCR can typically control NO_x emissions by 80 to 90%. An AFR controller will ensure that the engine operates in the appropriate air-to-fuel ratio resulting in more stable control of the SCR unit.

An SCR unit selectively reduces NO_x emissions by injecting either liquid anhydrous ammonia or aqueous ammonium hydroxide into the exhaust gas stream prior to the gas stream reaching the catalyst. The catalyst is typically made from noble metals, base metal oxides such as vanadium and titanium, and zeolite-based material. NO_x, NH_3, and O_2 react on the surface of the catalyst to form N_2 and H_2. For an SCR unit to operate properly, the exhaust gas must be within a particular range (typically between 450°F and 850°F). The catalyst that is utilized dictates the temperature range. Exhaust gas temperatures greater than the upper limit will pass the NO_x and NH_3 through the catalyst prior to the reaction. NH_3 emissions, called ammonia slip, are a key consideration when specifying an SCR unit.
Typical compressor engines operate at variable loads, thereby creating technical difficulties for SCR operation such as periods of ammonia slip or periods of insufficient ammonia injection.

Step 2 - Eliminate Technically Infeasible NO_x Control Options

SCR applied to lean-burn compressor engines is considered technically infeasible because of the potential adverse environmental impacts from ammonia slip due to the typical load fluctuation that is required for compressor engines. NSCR applied to a lean-burn engine is also technically infeasible because the NSCR needs a rich fuel-to-air ratio to operate effectively.
The remaining control options are considered technically feasible and cannot be eliminated in Step 2.

Step 3 - Rank Control Technologies by NO_x Control Effectiveness

Table 2 lists the NO_x control technologies and emission rates for the various NO_x control options. No feasible add-on NO_x controls were identified for the proposed compressor engines.

Step 4 - Evaluate Most Effective NO_x Controls and Document Results

Table 2. Ranked NOx Control Technology Effectiveness

Control Technology	NO_x Reduction (% Control)	NO_x Emission Rate (g/bhp-hr)
Lean-Burn Without Controls	0	0.5

As shown in Table 2, the only technologically feasible control option is a lean-burn engine without add-on control. Because this option offers the lowest emission rate of the feasible control technology options, no further analysis is necessary.

Step 5 – Select NO_x BACT

NWE proposes a NO_x emission limit of 0.5 g/bhp-hr for a lean-burn engine based on the manufacturer information. A lean-burn engine with no add-on NO_x controls is used frequently in the natural gas compression industry. The proposed BACT control device and emission limit conform to BACT determinations made recently by DEQ for lean-burn, natural gas-fired compressor engines.

VOC BACT

A top-down BACT is not necessary since the same control measures for CO emissions can be applied to VOC emissions with similar reduction efficiencies. NorthWestern proposes a BACT VOC emission limit of 0.7 g/bhp-hr for the proposed engines. The emissions control information provided by the manufacturer states a target outlet emissions rate of 0.13 g/BHP-hr, which is well below the VOC emission limit matches the 40 CFR 60, Subpart JJJJ VOC limit or 0.7 g/bhp-hr. The proposed BACT control device and emission limit conform to BACT determinations made recently by DEQ for lean-burn, natural gas-fired compressor engines.

Table 3. Ranked VOC Control Technology Effectiveness

Control Technology	VOC Reduction (% Control)	VOC Emission Rate (g/bhp-hr)
Lean-Burn With CO Catalyst and AFR	70	0.13
Lean-Burn Without Controls	0	0.43

SO_2 and PM_{10} BACT

ARM 17.8.752 requires a BACT analysis for SO_2 emissions. Annual uncontrolled SO_2 emissions are minimal, and any add-on control would be cost-prohibitive and unreasonable on a cost per ton of SO_2 removed basis. Therefore, a top-down BACT is not presented. The proposed SO_2 BACT is low sulfur (pipeline quality) natural gas with no add-on controls. The proposed SO_2 BACT conforms to previous BACT determinations made by DEQ for similar compressor engines.

ARM 17.8.752 requires a BACT analysis for PM_{10} emissions. Annual uncontrolled PM_{10} emissions are predicted to be very low, and any add-on control would be cost-prohibitive and unreasonable on a cost per ton of PM_{10} removed basis. Therefore, a top-down BACT analysis for PM_{10} emissions is not presented. NWE proposes BACT as combustion of low-ash (pipeline quality) natural gas with no add-on controls. The proposed PM_{10} BACT conforms to previous BACT determinations made by DEQ for similar compressor engines.

IV. Emission Inventory

Figure 1. Complete Emissions Inventory

Emissions Unit ID	Emitting Unit	PM10/PM2.5 (TPY)	NOx (TPY)	CO (TPY)	SOx (TPY)	VOC (TPY)	HAPs (TPY)	CO2e (MT/yr)
EU01	Caterpillar G3516J - 1,380 bhp Compressor Engine	4.82E-01	6.66	6.66	3.00E-02	11.01	2.54	5,245
EU02	Caterpillar G3516J - 1,380 bhp Compressor Engine	4.82E-01	6.66	6.66	3.00E-02	11.01	2.54	5,245
EU03	Natural Gas Boilers <1 MMBtu/hr	3.17E-02	0.21	0.35	2.50E-03	2.30E-02	7.88E-03	465.00
EU04	Natural Gas Boilers <1 MMBtu/hr	3.17E-02	0.21	0.35	2.50E-03	2.30E-02	7.88E-03	465.00
EU05	Emergency Generator - 80 bhp	4.13E-03	0.47	0.79	1.25E-43	6.28E-03	7.00E-03	23.00
IEU01	Building Heaters (Up to 1 MMBtu/hr)	3.00E-02	0.21	0.35	2.50E-03	2.00E-02	7.90E-03	457.00
IEU02	On-Site Vehicle Traffic	2.46E+00	---	---	---	---	---	---
IEU03	Miscellaneous VOC Sources	---	---	---	---	3.00E-02	---	152.00
	Total Emissions	3.52E+00	14.42	15.16	6.75E-02	22.12	5.11	12,052

	TPY	Major HAP Threshold
Total HAPs	5.11	25
Highest Single HAP Formaldeyde	3.36	10

Figure 2. Compressor Engine Emissions Inventory

Northwestern Energy Corporation (NWE)
Flathead County
Flathead Valley Compressor Station

Engine #1 Caterpillar G3516J - 1,380 hp Compressor Engine (Four-Stroke, Lean-Burn)
Engine #2 Caterpillar G3516J - 1,380 hp Compressor Engine (Four-Stroke, Lean-Burn)

Horsepower =	1,380	bhp	(Manufacturer Specs)	Conversions
Potential Hours of Operation =	8,760	hr/yr		2000 lbs/ton
Max. Fuel Combustion Rate =	11.30	MMBtu/hr each	(Based on Fuel Consumption Rate)	453.6 grams/lb
Fuel Heating Value=	1050	MMBtu/MMscf	March Gas Analysis	2.20 lbs/kg
Number of Engines =	2		Metric tons per short ton	0.907 MT/ton
Fuel Consumption (HHV)=	8185	Btu/bhp-hr	(Manufacturer Specs)	

				Emissions Each Engine (lbs/hr)	Emissions Each Engine (MT/yr)	CO2e Each Engine (MT/yr)
CO2	53.06	kg/MMBtu	Table C-1, 40 CFR 98.3 Subpart C	1,319	5,240	5,240
CH4	1.00E-03	kg/MMBtu	Table C-2, 40 CFR 98.3 Subpart C	2.49E-02	0.099	2.48
N2O	1.00E-04	kg/MMBtu	Table C-2, 40 CFR 98.3 Subpart C	2.49E-03	0.010	2.98
			GWP of CO_2 =1, CH_4 =25 and N_2O =298			5,245

(1) VOC compliance for NSPS Subpart JJJJ excludes formaldehyde. Total VOC includes formaldehyde.

Pollutant	Emission Factor	Units	Emission Factor Reference	Emissions for Each Engine (lbs/hr)	Emissions for Each Engine (TPY)	Emission Totals (TPY)
PM10/PM2.5(filterable)	7.71E-05	lb/MMBtu	AP-42 Table 3.2-2 (07/00)	8.71E-04	3.81E-03	1.00E-02
PM Condensable	9.91E-03	lb/MMBtu	AP-42 Table 3.2-2 (07/00)	0.11	4.82E-01	0.96
PM10/PM2.5 Total	9.99E-03	lb/MMBtu	Sum of filterable and condensabl	0.11	4.82E-01	0.96
NOx	5.00E-01	g/bhp-hr	Manufacturer guarantee. , Subpart JJJJ NOx limit	1.52	6.66E+00	13.32
CO	5.00E-01	g/bhp-hr	Previous stack test history for similar engines	1.52	6.66	13.32
SOx	5.88E-04	lb/MMBtu	AP-42 Table 3.2-2 (07/00)	6.64E-03	3.00E-02	6.00E-02
Voc, excluding formaldehyde	7.00E-01	g/bhp-hr	Subpart JJJJ - Talbe 1 (06/2011) (1)	2.13	9.33E+00	18.66
VOC, total			VOC from Subpart JJJJ with formaldhyde	2.51	1.10E+01	22.02

Sample Calculation:

NOx Emissions (ton/yr) = ((Emission Factor, g/bhp-hr) / (453.6 grams/lb) x (bhp) x (Hours of Operation)) / (2,000 lb/ton)
NOx Emissions (ton/yr) = (0.5 gram/bhp-hr) / (453.6 grams/lb) x (1380 bhp) x (8760 hr/yr) / (2000 lb/ton) = 6.66 ton/yr

PM-10/2.5 Emissions (ton/yr) = (Emission Factor, lbs/MMBtu) x (Max. Fuel Combustion Rat, MMBtu/hr) x (8760 hrs/yr) / (2,000 lbs/ton)
PM-10/2.5 Emissions (ton/yr) = (0.0000771 lb/MMBtu) x (98988 MMBtu/yr) / (2000 lbs/ton) = 0.0038 ton/yr

Hazardous Air Pollutants (HAPs)

Pollutant	CAS No.	Emission Factor	Units	Emission Factor Reference	Emissions Each Engine (ton/yr)	Emissions Total (ton/yr)
Acetaldehyde	75-07-0	8.36E-03	lb/MMBtu	AP-42 Table 3.2-2 (07/00)	0.41	0.82
Acrolein	107-02-8	5.14E-03	lb/MMBtu		0.25	0.50
Benzene	71-43-2	4.40E-04	lb/MMBtu		0.02	0.04
Biphenyl	92-52-4	2.12E-04	lb/MMBtu		0.01	0.02
1,3-Butadiene	106-99-0	2.67E-04	lb/MMBtu		0.01	0.02
Carbon Tetrachloride	56-23-5	3.67E-05	lb/MMBtu		0.00	0.00
Chlorobenzene	108-90-7	3.04E-05	lb/MMBtu		0.00	0.00
Chloroform	67-66-3	2.85E-05	lb/MMBtu		0.00	0.00
1,3-Dichloropropene	542-75-6	2.64E-05	lb/MMBtu		0.00	0.00
Ethylbenzene	100-41-4	3.97E-05	lb/MMBtu		0.00	0.00
Chloroethane	75-00-3	1.87E-06	lb/MMBtu		0.00	0.00
Ethylene Dibromide	106-93-4	4.43E-05	lb/MMBtu		0.00	0.00
1,2-Dichloroethane	107-06-2	2.36E-05	lb/MMBtu		0.00	0.00
1,1-Dichloroethane	75-34-3	2.36E-05	lb/MMBtu		0.00	0.00
Formaldehyde	50-00-0	1.26E-01	g/hp-hr		1.68	3.36
Methanol	67-56-1	2.50E-03	lb/MMBtu		0.12	0.24
Methylene Chloride	75-09-2	2.00E-05	lb/MMBtu		0.00	0.00
Naphthalene	91-20-3	7.44E-05	lb/MMBtu		0.00	0.00
Phenol	684-93-5	2.40E-05	lb/MMBtu		0.00	0.00
Toluene	87-86-5	4.08E-04	lb/MMBtu		0.02	0.04
Vinyl Chloride	108-95-2	1.49E-05	lb/MMBtu		0.00	0.00
Xylene	106-50-3	1.84E-04	lb/MMBtu		0.01	0.02
1,2-Dichloropropane	78-87-5	2.69E-05	lb/MMBtu		0.00	0.00
Styrene	100-42-5	2.36E-05	lb/MMBtu		0.00	0.00
1,1,2,2-Tetrachloroethane	79-34-5	4.00E-05	lb/MMBtu		0.00	0.00
1,1,2-Trichloroethane	79-00-5	3.18E-05	lb/MMBtu		0.00	0.00
2,2,4-Trimethylpentane	540-84-1	2.50E-04	lb/MMBtu		0.01	0.02
PAH	—	2.69E-05	lb/MMBtu		0.00	0.00
Benzo(b)fluoranthene	205-99-2	1.66E-07	lb/MMBtu		0.00	0.00
Chrysene	218-01-9	6.93E-07	lb/MMBtu		0.00	0.00
Acenaphthene	83-32-9	1.25E-06	lb/MMBtu		0.00	0.00
Acenaphthylene	208-96-8	5.53E-06	lb/MMBtu		0.00	0.00
Benzo(g,h,i)perylene	191-24-2	4.14E-07	lb/MMBtu		0.00	0.00
Fluoranthene	206-44-0	1.11E-06	lb/MMBtu		0.00	0.00
Fluorene	86-73-7	5.67E-06	lb/MMBtu		0.00	0.00
Phenanthrene	85-01-8	1.04E-05	lb/MMBtu		0.00	0.00
Pyrene	129-00-0	1.36E-06	lb/MMBtu		0.00	0.00
Arsenic	7440-38-2	2.0E-04	lb/MMscf	AP-42 Table 1.4-4 (07/98)	0.00	0.00
Beryllium	7440-41-7	1.2E-05	lb/MMscf		0.00	0.00
Cadmium	7440-43-9	1.1E-03	lb/MMscf		0.00	0.00
Chromium	7440-47-3	1.4E-03	lb/MMscf		0.00	0.00
Cobalt	7440-48-4	8.4E-05	lb/MMscf		0.00	0.00
Manganese	7439-96-5	3.8E-04	lb/MMscf		0.00	0.00
Mercury	7439-97-6	2.6E-04	lb/MMscf		0.00	0.00
Nickel	7440-02-0	2.1E-03	lb/MMscf		0.00	0.00
Selenium	7782-49-2	2.4E-05	lb/MMscf		0.00	0.00
				Totals	2.64	6.08

Figure 3. Natural Gas Boiler Emissions Inventory

Northwestern Energy Corporation (NWE)
Flathead County
Flathead Valley Compressor Station
EU03 **Natural Gas Boilers <1 MMBtu/hr**
EU04 **Natural Gas Boilers <1 MMBtu/hr**

Fuel Usage =	8.34	MMscf/yr			
Horsepower =	N/A	hp			
Hours of Operation =	8,760	hr/yr			
Max. Fuel Combustion Rate =	1.00	MMBtu/hr	Size up to 1 MMBtu/hr each	Conversions:	2.205 lbs/kg
Fuel Heating Value=	1,050	MMBtu/MMscf			2000 lbs/ton
Number of Boilers=	2				0.907 MT/ton

Pollutant	Emission Factor	Units	Emission Factor Reference	Emissions Each Boiler (lbs/hr)	Emissions Each Boiler (tons/yr)	Emissions Total (tons/yr)
PM	7.6	lb/MMscf	AP-42 Table 1.4-2 (07/98)	7.24E-03	3.17E-02	0.063
NOx	50	lb/MMscf	AP-42 Table 1.4-1 (07/98)	4.76E-02	2.08E-01	0.416
CO	84	lb/MMscf	AP-42 Table 1.4-1 (07/98)	8.00E-02	3.50E-01	0.700
VOC	5.5	lb/MMscf	AP-42 Table 1.4-2 (07/98)	5.24E-03	2.30E-02	0.046
SO_2	0.6	lb/MMscf	AP-42 Table 1.4-2 (07/98)	5.71E-04	2.50E-03	0.005
				Emissions Each Boiler (lbs/hr)	Emissions Each Boiler (MT/yr)	CO2e Each Boiler (MT/yr)
CO2	53.06	kg/MMBtu	Table C-2, 40 CFR 98.3 Subpart C	117.00	464.80	464.80
CH4	1.00E-03	kg/MMBtu	Table C-2, 40 CFR 98.3 Subpart C	2.21E-03	8.78E-03	2.20E-01
N2O	1.00E-04	kg/MMBtu	Table C-2, 40 CFR 98.3 Subpart C	2.21E-04	8.78E-04	2.62E-01
Total CO2e			GWP of CO2 =1, CH4 =25 and N2O =298			465.28

Sample Calculation:
PM Emissions = (Emission Factor, lbs/MMscf) x (Fuel Combustion Rate MMBtu/hr)
PM Emissions (lb/hr) = (7.6 lb/MMscf) x (1 MMBtu/hr) = 0.0072 lbs/hr
PM Emissions (tons/yr) = (0.007 lbs/hr) x (8760 hrs/yr) / (2000 lbs/ton) = 0.032 tons/yr

Hazardous Air Pollutants (HAPs)

Pollutant	Emission Factor	Units	Emission Factor Reference	Emissions Each Boiler (ton/yr)	Emissions Total (ton/yr)
2-Methylnaphthalene	2.40E-05	lb/MMscf	AP-42 Table 1.4-3	1.00E-07	2.00E-07
3-Methylchloranthene	1.80E-06	lb/MMscf		7.51E-09	1.50E-08
7-12-Dimethylbenz(a)anthrace	1.60E-05	lb/MMscf		6.67E-08	1.33E-07
Acenaphthene	1.80E-06	lb/MMscf		7.51E-09	1.50E-08
Acenaphthylene	1.80E-06	lb/MMscf		7.51E-09	1.50E-08
Anthracene	2.40E-06	lb/MMscf		1.00E-08	2.00E-08
Benz(a)anthracene	1.80E-06	lb/MMscf		7.51E-09	1.50E-08
Benzene	2.10E-03	lb/MMscf		8.76E-06	1.75E-05
Benzo(a)pyrene	1.20E-06	lb/MMscf		5.00E-09	1.00E-08
Benzo(b)Fluoranthene	1.80E-06	lb/MMscf		7.51E-09	1.50E-08
Benzo(g,h,I)perylene	1.20E-06	lb/MMscf		5.00E-09	1.00E-08
Benzo(k)Fluoranthene	1.80E-06	lb/MMscf		7.51E-09	1.50E-08
Chrysene	1.80E-06	lb/MMscf		7.51E-09	1.50E-08
Dibenzo(a,h)anthracene	1.20E-06	lb/MMscf		5.00E-09	1.00E-08
Dichlorobenzene	1.20E-03	lb/MMscf		5.00E-06	1.00E-05
Fluoranthene	3.00E-06	lb/MMscf		1.25E-08	2.50E-08
Fluorene	2.80E-06	lb/MMscf		1.17E-08	2.34E-08
Formaldehyde	7.50E-02	lb/MMscf		3.13E-04	6.26E-04
Hexane	1.80E+00	lb/MMscf		7.51E-03	1.50E-02
Indeno(1,2,3-cd)pyrene	1.80E-06	lb/MMscf		7.51E-09	1.50E-08
Naphthalene	6.10E-04	lb/MMscf		2.54E-06	5.08E-06
Phenanathrene	1.70E-05	lb/MMscf		7.09E-08	1.42E-07
Pyrene	5.00E-06	lb/MMscf		2.09E-08	4.18E-08
Toluene	3.40E-03	lb/MMscf		1.42E-05	2.84E-05
Arsenic	2.00E-04	lb/MMscf	AP-42 Table 1.4-4	8.34E-07	1.67E-06
Beryllium	1.20E-05	lb/MMscf		5.00E-08	1.00E-07
Cadmium	1.10E-03	lb/MMscf		4.59E-06	9.18E-06
Chromium	1.40E-03	lb/MMscf		5.84E-06	1.17E-05
Cobalt	8.40E-05	lb/MMscf		3.50E-07	7.00E-07
Manganese	3.80E-04	lb/MMscf		1.58E-06	3.16E-06
Mercury	2.60E-04	lb/MMscf		1.08E-06	2.16E-06
Nickel	2.10E-03	lb/MMscf		8.76E-06	1.75E-05
Selenium	2.40E-05	lb/MMscf		1.00E-07	2.00E-07
Total				7.88E-03	1.57E-02

Figure 4. Emergency Generator Emissions Inventory

Northwestern Energy Corporation (NWE)
Flathead County
Flathead Valley Compressor Station
EU05 - 60 kW Emergency Generator

Power Rating=	60	kW	(Manufacturer Spec)
Fuel Heating Value=	1050	MMBtu/MMscf	
Engine Fuel Consumption =	808	scf/hr, at 100% load	(Manufacturer Spec)
Heat Input =	0.8484	MMBtu/hr	
Horsepower =	80.4	bhp	(Converted from kw)
Fuel Usage =	8.08E-04	MMscf/hr	
Hours of Operation =	500	hrs/yr	
Conversions:	2000	lb/ton	
	2.2046	lbs/kg	
	0.907	MT/ton	

Pollutant	Emission Factor	Units	Emission Factor Reference	Emissions (lb/hr)	Emissions (ton/yr)
PM (includes PM-10 & PM_{cond})	1.94E-02	lb/MMBtu	AP-42 3.2-3 (4 stroke, rich burn)	1.65E-02	4.13E-03
NOx	2.21E+00	lb/MMBtu	AP-42 3.2-3 (4 stroke, rich burn)	1.87	0.47
CO	3.72E+00	lb/MMBtu	AP-42 3.2-3 (4 stroke, rich burn)	3.16	0.79
VOC	2.96E-02	lb/MMBtu	AP-42 3.2-3 (4 stroke, rich burn)	2.51E-02	6.28E-03
SO_2	5.88E-04	lbs/MMBtu	AP-42 3.2-3 (4 stroke, rich burn)	4.99E-04	1.25E-04
				Emissions (lbs/hr)	**Emissions (MT/yr)**	**CO2e (MT/yr)**
CO2	5.31E+01	kg/MMBtu	Table C-1, 40 CFR 98.3 Subpart C	99.24	22.50	22.50
CH4	1.00E-03	kg/MMBtu	Table C-2, 40 CFR 98.3 Subpart C	1.87E-03	4.2E-04	1.1E-02
N2O	1.00E-04	kg/MMBtu	Table C-2, 40 CFR 98.3 Subpart C	1.87E-04	4.2E-05	1.3E-02
Total CO2e			GWP of CO_2 =1, CH_4 =25 and N_2O =298			22.52

Sample Calculation:

Emissions (lbs/hr)= (Emission Factor, lbs/MMBtu)x(Heat Input, MMBtu/hr)
PM Emissions (lbs/hr)= (0.0194 lbs/MMBtu) x (0.8484 MMBtu/hr)
PM Emissions (lbs/hr)= 0.017 lb/hr

Emissions (ton/yr)= (Emissions, lb/hr) x (Hours of Operation) / (2000 lbs/ton)
PM Emissions (ton/yr)= (0.017 lb/hr) x (500 hrs) / (2000 lb/ton)
PM Emissions (ton/yr)= 0.004 ton/yr

Hazardous Air Pollutants (HAPs)

Pollutant	CAS No.	Emission Factor	Units	Emission Factor Reference	Emissions (tons/yr)
1,1,2,2-Tetrachloroethane	79-34-5	2.53E-05	lb/MMBtu	AP-42 Table 3.2-3	5.37E-06
1,1,2-Trichloroethane	79-00-5	1.53E-05	lb/MMBtu		3.25E-06
1,3-Butadiene	106-99-0	6.63E-04	lb/MMBtu		1.41E-04
1,3-Dichloropropene	542-75-6	1.27E-05	lb/MMBtu		2.69E-06
Acetaldehyde	75-07-0	2.79E-03	lb/MMBtu		5.92E-04
Acrolein	107-02-8	2.63E-03	lb/MMBtu		5.58E-04
Benzene	71-43-2	1.58E-03	lb/MMBtu		3.35E-04
Carbon Tetrachloride	56-23-5	1.77E-05	lb/MMBtu		3.75E-06
Chlorobenzene	108-90-7	1.29E-05	lb/MMBtu		2.74E-06
Chloroform	67-66-3	1.37E-05	lb/MMBtu		2.91E-06
Ethylbenzene	100-41-4	2.48E-05	lb/MMBtu		5.26E-06
Ethylene Dibromide	106-93-4	2.13E-05	lb/MMBtu		4.52E-06
Formaldehyde	50-00-0	2.05E-02	lb/MMBtu		4.35E-03
Methanol	67-56-1	3.06E-03	lb/MMBtu		6.49E-04
Methylene Chloride	75-09-2	4.12E-05	lb/MMBtu		8.74E-06
Naphthalene	91-20-3	9.71E-05	lb/MMBtu		2.06E-05
PAH	---	1.41E-04	lb/MMBtu		2.99E-05
Styrene	100-42-5	1.19E-05	lb/MMBtu		2.52E-06
Toluene	87-86-5	5.58E-04	lb/MMBtu		1.18E-04
Vinyl Cloride	108-95-2	7.18E-06	lb/MMBtu		1.52E-06
Xylene	106-50-3	1.95E-04	lb/MMBtu		4.14E-05
Arsenic	7440-38-2	2.0E-04	lb/MMscf	AP-42 Table 1.4-4	4.04E-08
Beryllium	7440-41-7	1.2E-05	lb/MMscf		2.42E-09
Cadmium	7440-43-9	1.1E-03	lb/MMscf		2.22E-07
Chromium	7440-47-3	1.4E-03	lb/MMscf		2.83E-07
Cobalt	7440-48-4	8.4E-05	lb/MMscf		1.70E-08
Manganese	7439-96-5	3.8E-04	lb/MMscf		7.68E-08
Mercury	7439-97-6	2.6E-04	lb/MMscf		5.25E-08
Nickel	7440-02-0	2.1E-03	lb/MMscf		4.24E-07
Selenium	7782-49-2	2.4E-05	lb/MMscf		4.85E-09
				Total HAPs:	**0.007**

Figure 5. Building Heaters Emissions Inventory

Northwestern Energy Corporation (NWE)
Flathead County
Flathead Valley Compressor Station

Building Heaters < 1.0 MMBtu/hr combined

Potential Hours of Operation =	8,760	hr/yr	
Max. Fuel Combution Rate =	1.00	MMBtu/hr	(Maximum Combined)
Fuel Heating Value=	1,050	MMBtu/MMscf	
Fuel Usage =	8.34	MMscf/yr	(Calculated)
	2,000	lbs/ton	
	0.907	MT/ton	

Pollutant	Emission Factor	Units	Emission Factor Reference	Potential Emissions (ton/yr)
PM-10[a]	7.60	lb/MMscf	AP-42 Table 1.4-2 (07/98)	0.03
PM-Condensable	5.70	lb/MMscf	AP-42 Table 1.4-2 (07/98)	0.02
NOx	50	lb/MMscf	AP-42 Table 1.4-1 (07/98)	0.21
CO	84	lb/MMscf	AP-42 Table 1.4-1 (07/98)	0.35
SOx	0.60	lb/MMscf	AP-42 Table 1.4-2 (07/98)	2.50E-03
VOC	5.50	lb/MMscf	AP-42 Table 1.4-2 (07/98)	0.02

				Emissions (MT/yr)	CO2e (MT/yr)
CO2	120,000	lb/MMscf	AP-42 Table 1.4-2 (07/98)	454.02	454.02
CH4	2.30	lb/MMscf	AP-42 Table 1.4-2 (07/98)	8.70E-03	0.22
N2O	2.20	lb/MMscf	AP-42 Table 1.4-2 (07/98)	8.32E-03	2.48
Total CO2e	120,713	lb/MMscf	AP-42 Table 1.4-2 (07/98)	503.55	456.72

Notes:
a. Value is for Total PM (Includes both Filterable and Condensible)

Sample Calculation:
PM-10 Emissions (ton/yr) = (Emission Factor, lbs/MMscf) x (Fuel Usage, MMscf/yr) / (2,000 lbs/ton)
PM-10 Emissions (ton/yr) = (7.6 lbs/MMscf) x (8.34 MMscf/yr) / (2000 lbs/ton) = 0.03 ton/yr

Hazardous Air Pollutants (HAPs)

Pollutant	CAS No.	Emission Factor (lb/MMscf)	Emission Factor Reference	Potential Emissions (ton/yr)
2-Methylnaphthalene	91-57-6	2.4E-05	AP-42 Table 1.4-3 (07/98)	1.0E-07
3-Methylchloranthrene	56-49-5	1.8E-06		7.5E-09
7,12-Dimethylbenz(a)anthracene		1.6E-05		6.7E-08
Acenaphthene	83-32-9	1.8E-06		7.5E-09
Acenaphthylene	203-96-8	1.8E-06		7.5E-09
Anthracene	120-12-7	2.4E-06		1.0E-08
Benz(a)anthracene	56-55-3	1.8E-06		7.5E-09
Benzene	71-43-2	2.1E-03		8.8E-06
Benzo(a)pyrene	50-32-8	1.2E-06		5.0E-09
Benzo(b)fluoranthene	205-99-2	1.8E-06		7.5E-09
Benzo(g,h,I)perylene	191-24-2	1.2E-06		5.0E-09
Benzo(k)fluoranthene	205-82-3	1.8E-06		7.5E-09
Chrysene	218-01-9	1.8E-06		7.5E-09
Dibenzo(a,h)anthracene	53-70-3	1.2E-06		5.0E-09
Dichlorobenzene	25321-22-6	1.2E-03		5.0E-06
Fluoranthene	206-44-0	3.0E-06		1.3E-08
Fluorene	86-73-7	2.8E-06		1.2E-08
Formaldehyde	50-00-0	7.5E-02		3.1E-04
Hexane	110-54-3	1.8E+00		7.5E-03
Indeno(1,2,3-cd)pyrene	193-39-5	1.8E-06		7.5E-09
Naphthalene	91-20-3	6.1E-04		2.5E-06
Phenanathrene	85-01-8	1.7E-05		7.1E-08
Pyrene	129-00-0	5.0E-06		2.1E-08
Toluene	108-88-3	3.4E-03		1.4E-05
Arsenic	7440-38-2	2.0E-04	AP-42 Table 1.4-4 (07/98)	8.3E-07
Beryllium	7440-41-7	1.2E-05		5.0E-08
Cadmium	7440-43-9	1.1E-03		4.6E-06
Chromium	7440-47-3	1.4E-03		5.8E-06
Cobalt	7440-48-4	8.4E-05		3.5E-07
Manganese	7439-96-5	3.8E-04		1.6E-06
Mercury	7439-97-6	2.6E-04		1.1E-06
Nickel	7440-02-0	2.1E-03		8.8E-06
Selenium	7782-49-2	2.4E-05		1.0E-07
			Totals	**0.0079**

Figure 6. On-Site Vehicle Traffic Emissions Inventory

Northwestern Energy Corporation (NWE)
Flathead County
Flathead Valley Compressor Station

On-Site Vehicle Traffic

On-site Traffic 5 VMT/day
1825 VMT/yr

Pollutant	Emission Factor	Units	Emission Factor Reference	Actual Emissions (ton/yr)
PM-10	2.70	lb/VMT	MDEQ Emission Factor	2.46

Sample Calculation:

On-site Vehicle Traffic Emissions (tons/yr) = (Emission Factor, lb/VMT) x (Traffic, VMT/yr) / (2,000 lb/ton)
On-site Vehicle Traffic Emissions (tons/yr) = (2.7 lb/VMT) x (1825 VMT/yr) / (2000 lbs/ton) = 2.46 ton/yr

Figure 7. Miscellaneous VOC Sources Emissions Inventory

NorthWestern Energy
Flathead Valley Compressor Station
Miscellaneous VOC Sources

VOC Content[3] = 0.43% % VOC
CH_4 Content[3] = 93.64% % CH4
Hours of Operation = 8,760 hr
Conversions: 2000 lbs/ton
2.20 lbs/kg
0.907 MT/ton

Gas Component	Service	Count[4]	TOC EF[1] (kg/hr/source)	VOC Emiss (lb/hr)	VOC Emiss (ton/yr)	CH_4 Emiss (lb/hr)	CH_4 Emiss (MT/yr)	CO2e Emiss (MT/yr)
Valves	Gas	45	4.50E-03	1.92E-03	8.41E-03	4.17E-01	1.66	41.50
Other[2]	Gas	58	8.80E-03	4.83E-03	2.12E-02	1.05E+00	4.17	104.25
Flanges	Gas	76	3.90E-04	2.80E-04	1.23E-03	6.11E-02	2.43E-01	6.08
Total Fugitive Emissions =				0.007	0.031	1.53	6.07	151.83

1. From Table 2-4 of Protocol for Equipment Leak Emissions Estimates (EPA-453/R-95-017), November, 1995.
2. The "other" equipment factor is for compressors, diaphragms, drains, dump arms, hatches, instruments, meters, PRVs, polished rods, relief valves and vents.
3. From site-specific gas analysis located in Appendix E.
4. Count provided by NWE Plant Engineer

V. Existing Air Quality

The air quality of Flathead County is classified as "unclassifiable/attainment." There are three PM_{10} limited maintenance plans in the area. Each of these areas were designated as limited maintenance areas since 2020. The closest of the three areas to the proposed project is the Columbia Falls limited maintenance plan at approximately 10.5 miles from the proposed FVCS.

VI. Air Quality Impacts

This permit contains conditions and limitations that would protect air quality for the site and surrounding area.

DEQ believes this action will not cause or contribute to a violation of any ambient air quality standard.

VII. Ambient Air Impact Analysis

Based on the information provided and the conditions established in MAQP #5309-00, the DEQ determined, based on the impacts from this permitting action will be minor. DEQ believes it will not cause or contribute to a violation of any ambient air quality standard.

VIII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, DEQ conducted a private property taking and damaging assessment which is located in the attached environmental assessment and is located in the attached environmental assessment.

IX. Environmental Assessment

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

FINAL ENVRIONMENTAL ASSESSMENT

NorthWestern Energy
Flathead Valley Compressor Station

08/09/2024

Air Quality Bureau

Air, Energy, and Mining Division

Montana Department of Environmental Quality

Table of Contents

Project Overview

COMPANY NAME:	NorthWestern Energy
EA DATE:	August 9, 2024
SITE NAME:	Flathead Valley Compressor Engine Station
MAQP#:	5309
Version #:	00
Application Received Date:	May 31, 2024

Location

Township 32 North, Range 19 West, Section 35
County: Flathead
PROPERTY OWNERSHIP: FEDERAL STATE PRIVATE X

Compliance with the Montana Environmental Policy Act

Under the Montana Environmental Policy Act (MEPA), Montana agencies are required to prepare an environmental review for state actions that may have an impact on the human environment. The proposed action is considered to be a state action that may have an impact on the human environment and, therefore, the Department of Environmental Quality (DEQ) must prepare an environmental review. This Environmental Assessment (EA) will examine the proposed action and alternatives to the proposed action and disclose potential impacts that may result from the proposed and alternative actions. DEQ will determine the need for additional environmental review based on consideration of the criteria set forth in Administrative Rules of Montana (ARM) 17.4.608. DEQ may not withhold, deny, or impose conditions on the Permit based on the information contained in this EA (§ 75-1- 201(4), MCA).

Proposed Action

NorthWestern Energy (NWE) has applied for a Montana Air Quality permit modification under the Clean Air Act of Montana to construct and operate this facility. The state law that regulates air quality permitting in Montana is the Clean Air Act of Montana, §§ 75-2-101, et seq., (CAA) Montana Code Annotated (MCA). DEQ may not approve a proposed project contained in an application for an air quality permit unless the project complies with the requirements set forth in the CAA of Montana and the administrative rules adopted thereunder, ARMs 17.8.101 et. seq. The proposed action would be located on privately owned land, in Flathead County, Montana. All information included in this EA is derived from the permit application, discussions with the applicant, analysis of aerial photography, topographic maps, and other research tools.

Purpose and Need

Under MEPA, Montana agencies are required to prepare an environmental review for state actions that may have an impact on the human environment. The Proposed Action is considered to be a state action that may have an impact on the human environment and, therefore, DEQ must prepare an environmental review. This EA will examine the proposed action and alternatives to the proposed action and disclose potential impacts that may result from the proposed and alternative actions. DEQ will determine the need for additional environmental review based on consideration of the criteria set forth in ARM 17.4.608.

Table 1: Summary of Proposed Action

Proposed Action	
General Overview	This permitting action is to acquire a Montana Air Quality Permit (MAQP) for a compressor station in Flathead County, Montana, to boost the pressure of natural gas in the Kalispell and Flathead Valley gas transmission lines to accommodate increased natural gas usage in the area.
Duration & Hours of Operation	**Construction:** July 2024 until December 2024. **Operation:** Site would be monitored monthly by one NWE employee and during peak cold events.
Estimated Disturbance	Approximately 1.9 acres of land would be affected for construction of the new facility.
Construction Equipment	Standard construction equipment would be utilized, such as, but not limited to: multiple pickup trucks, semi-trucks, air compressors, excavators, telehandler, skidsteer, ariel booms, and cranes.
Personnel Onsite	**Construction:** During the piping phase, 4-5 workers for 10 hours/day, 5 days a week, for 2 months. During the Building and General Construction phase, 10 workers, 5 days/week, for 3 months. The NorthWestern Assembly Crew would also have 5 workers onsite 5 days/week, for 8 hours/day for 3 months. **Operation:** Site would be monitored monthly by one NWE employee and during peak cold events.
Location and Analysis Area	**Location**: Section 35, Township 32 North, Range 19 West, in Flathead County, Montana **Analysis Area:** The area being analyzed as part of this environmental review includes the immediate project area (Figure 1), as well as neighboring lands surrounding the analysis area, as reasonably appropriate for the impacts being considered.
The applicant is required to comply with all applicable local, county, state, and federal requirements pertaining to the following resource areas.	
Air Quality	The applicant proposes to receive an air quality permit for a new compressor engine station adjacent to an existing natural gas pipeline, on land already owned by NWE.
Water Quality	This permitting action would not affect water quality. NWE is required to comply with the applicable local, county, state and federal requirements pertaining to water quality.
Erosion Control and Sediment Transport	This permitting action would not affect erosion control and sediment transport. NWE is required to comply with the applicable local, county, state and federal requirements pertaining to erosion control and sediment transport.

Solid Waste	This permitting action would not affect solid waste in the area. NWE is required to comply with the applicable local, county, state and federal requirements pertaining to solid waste.
Cultural Resources	This permitting action would not affect cultural resources. NWE is required to comply with the applicable local, county, state and federal requirements pertaining to cultural resources.
Hazardous Substances	This permitting action would not contribute to any hazardous substances. NWE is required to comply with the applicable local, county, state and federal requirements pertaining to hazardous substances.
Reclamation	This permitting action would not require any reclamation.

Cumulative Impact Considerations	
Past Actions	No previous actions as this is a new permit.
Present Actions	Issuing an MAQP for the construction and operation of a new compressor station.
Related Future Actions	DEQ is not currently aware of any future projects from NWE. Any future projects would be subject to a new permit application.

See Figures 1 and 2 below for the project location of the NWE site.

Figure 1: Site Location Map

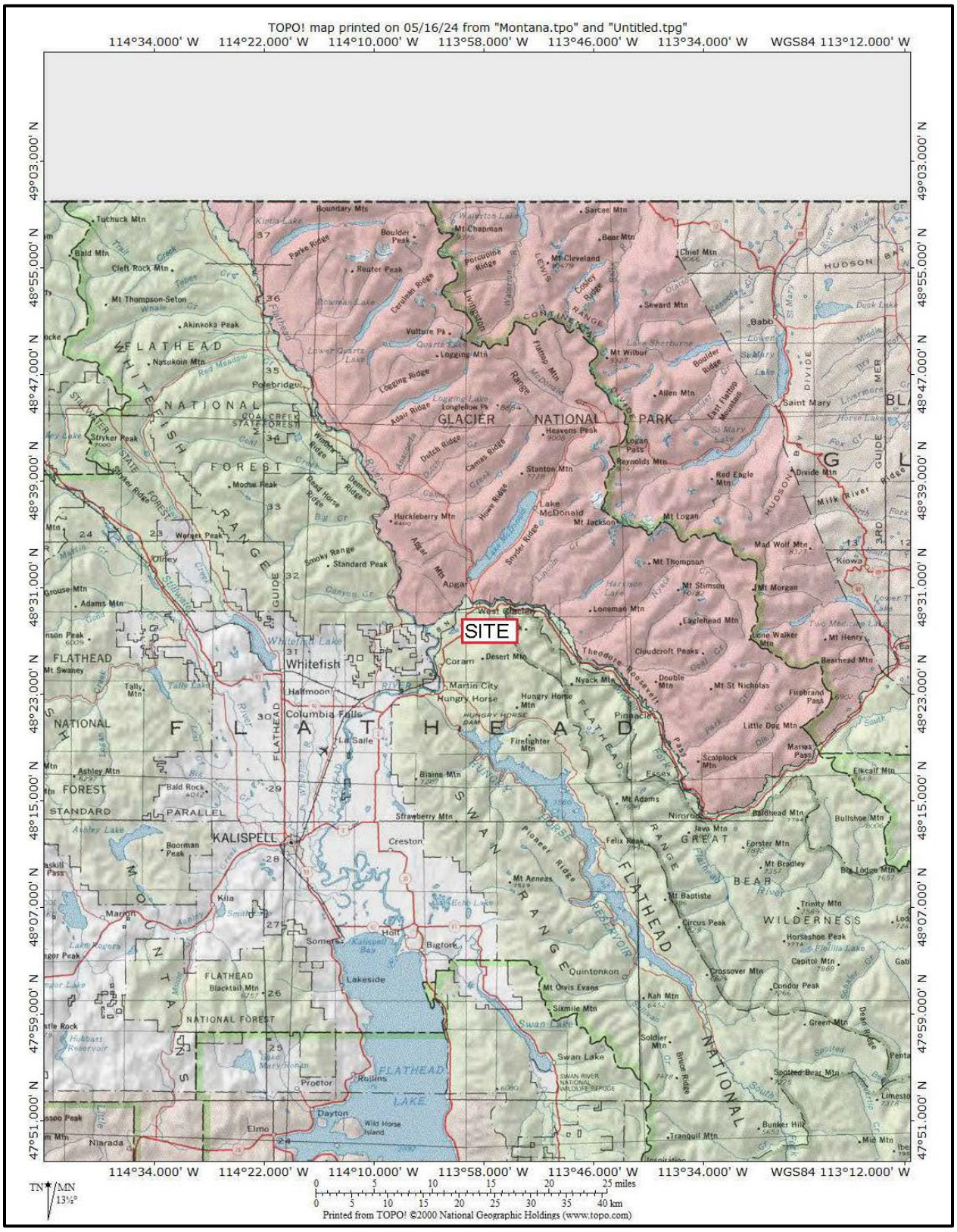

Figure 2. Site Location Map 2

EVALUATION OF AFFECTED ENVIRONMENT AND IMPACT BY RESOURCE:

The impact analysis will identify and evaluate whether the impacts are direct or secondary impacts to the physical environment and human population in the area to be affected by the proposed project. Direct impacts occur at the same time and place as the action that causes the impact. Secondary impacts are a further impact to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action (ARM 17.4.603(18)). Where impacts would occur, the impacts will be described.

Cumulative impacts are the collective impacts on the human environment within the borders of Montana that could result from the Proposed Action when considered in conjunction with other past and present actions related to the Proposed Action by location and generic type. Related future impacts must also be considered when these actions are under concurrent consideration by any state agency through pre-impact statement studies, separate impact statement evaluation, or permit processing procedures. The activities identified in Table 1 were analyzed as part of the cumulative impacts assessment for each resource.

The duration is quantified as follows:

- Construction Impacts (short-term): These are impacts to the environment during the construction period. When analyzing duration, please include a specific range of time.

- Operation Impacts (long-term): These are impacts to the environment during the operational period. When analyzing duration, please include a specific range of time.

The intensity of the impacts is measured using the following:

++No impact: There would be no change from current conditions.

- Negligible: An adverse or beneficial effect would occur but would be at the lowest levels of detection.
- Minor: The effect would be noticeable but would be relatively small and would not affect the function or integrity of the resource.
- Moderate: The effect would be easily identifiable and would change the function or integrity of the resource.
- Major: The effect would alter the resource.

1. Geology and Soil Quality, Stability, and Moisture

The Flathead County area is characterized in a Montana Bureau of Mines and Geology (MBMG) report as forested north-west trending mountain ranges that are separated by narrow valleys. The mountainous regions of Flathead County consist mainly of sedimentary stones like sandstone, shale, limestone and dolomite (MBMG).
The proposed construction area is currently used for typical natural gas transmission and product distribution activities by NWE. Prior to the proposed construction of the NWE FVCS there is an existing natural gas pipeline routed through the NWE property. The proposed construction area has been previously disturbed by human activity. The area near the NWE FVCS site consists of residential structures, Glacier National Park and the Great Bear Wilderness Area. Based on the information provided to DEQ by NWE, the compressor station would be located approximately 500 feet from the northern property boundary.

Direct Impacts:

The permit application included additional information like analysis of aerial photography, topographic maps, information provided by NWE and other research tools. The initial construction of the NWE FVCS would not be a new disturbance, as the land was previously disturbed by human activity which resulted in the existing natural gas pipeline that is on this property. Soil would be disturbed during construction and operation of the proposed action, approximately 1.9 acres of disturbance from initial construction and startup. There are minor impacts expected to topography and geology from this permitting action as it allows for the construction of the new FVCS.

Secondary Impacts:

No secondary impacts to geology, stability, and moisture would be expected because the NWE FVCS would be located within the existing NWE property boundary.

Cumulative Impacts:

Minor cumulative impacts to geology, stability, and moisture would be expected because the NWE facility already has an existing natural gas pipeline adjacent to the FVCS, therefore the land was already utilized for natural gas activities by NWE.

2. Water Quality, Quantity, and Distribution

The NWE FVCS is located approximately 4 miles from Lake McDonald, a popular recreational lake in the region, and approximately 0.52 miles from the Middle Fork Flathead River, a frequented place for river-related recreation. Discharges would not be released to ground or surface water and no impacts to wetlands are anticipated.

Direct Impacts:

NWE has not submitted any other permit applications that DEQ is aware of related to this proposed compressor station or any other projects associated with this natural gas pipeline.

No fragile or unique water resources or values are present. No impacts to water quality and quantity, which are resources of significant statewide and societal importance are expected.

Secondary Impacts:

No secondary impacts to water quality, quantity and distribution would be expected, nor any impacts from stormwater runoff.

Cumulative Impacts:

Minor cumulative impacts to water quality, quantity and distribution are anticipated from the original construction of the facility, but once in operation, impacts are minor. No major impacts are anticipated from this permitting action once in operation.

3. Air Quality

As of June 3, 2024, Flathead County is designated as an Unclassifiable/Attainment area for all criteria pollutants according to 40 CFR 81.327. There are three PM_{10} limited maintenance plans in the area. Each of these areas were designated as limited maintenance areas since 2020. The closest of the three areas to the proposed project is the Columbia Falls limited maintenance plan at approximately 10.5 miles from the proposed FVCS. Applicants are required to comply with all laws relating to air, such as the Federal Clean Air Act, National Ambient Air Quality Standards set by the Environmental Protection Agency (EPA), and the Clean Air Act of Montana. NWE FVCS is a minor source of emissions.

Direct Impacts:

Expected emissions from the construction and operation of the facility are shown in the Permit Analysis Section within the Emission Inventory. An assessment of greenhouse gases (GHGs) is described in Section 23 of this EA.

Air quality standards, set by the federal government and DEQ are enforced by the AQB and allow for pollutants at the levels permitted within the MAQP. The NWE FVCS emissions include particulate matter (PM) species, oxides of nitrogen (NO_X), carbon monoxide (CO), sulfur dioxide (SO_2), volatile organic compounds (VOCs), Hazardous Air Pollutants (HAPs), and GHG emissions.

Air pollution control equipment must be operated at the maximum design for which it is intended ARM 17.8.752(2). Limitations would be placed on the allowable emissions for the new emission sources. As part of the air quality permit application, NWE submitted a Best Available Control Technology (BACT) analysis for each emitting unit. These proposed limits were reviewed by DEQ and incorporated into MAQP #5309-00 as federally enforceable conditions. These permit limits cover NO_X, CO, SO_2, VOCs, PM, and HAPs with associated ongoing compliance demonstrations, as determined by DEQ.

Air quality standards are regulated by the federal Clean Air Act, 42 U.S.C. 7401 *et seq.* and CAA, § 50-40-101 *et seq.* MCA, and are implemented and enforced by DEQ's AQB. As stated above, NWE is required to comply with all applicable state and federal laws. Minor air quality impacts would be anticipated for the proposed action.

Secondary Impacts:

Impacts to air quality from the operation of the NWE FVCS facility are to be restricted by an MAQP and therefore should have minor secondary air quality impacts.

Cumulative Impacts:

Cumulative impacts to air quality from the operation of the NWE FVCS facility are to be restricted by an MAQP and therefore should have minor air quality impacts. Major impacts are anticipated upon initial startup and operation as a new facility would be constructed where there previously was not one before. However, adjacent to the FVCS is an existing natural gas pipeline on the property. The nearby area also has other stationary sources, the F.H. Stolze Land and Lumber Co, MAQP #2934-01 and the Weyerhaeuser – Columbia falls, MAQP #2667-14 that both contribute to the air quality in the area.

4. Vegetation Cover, Quantity, and Quality

No fragile or unique resources of values, or resources of statewide or societal importance, are present. The area around the NWE land is previously disturbed by burning. Where regrowth has begun, the area is a mainly conifer-based forest. DEQ conducted research using the Montana Natural Heritage Program (MTNHP) website and ran the query titled "Environmental Summary Report" dated June 6, 2024, that produced the following Species of Concern (SOC) for the following plants:
Beardless Wildrye, Treelike Clubmoss, Velvetleaf Huckleberry, Western Moonwort, Tufted Club-rush, Roundleaf Sundew, Whitebark Pine, and the Norwegian Syntrichia Moss.
The proposed action is located at the existing NWE property.
The polygon area analyzed using the MTNHP website produces an area inherently larger than the specific disturbance area, so some additional species may be reported that are not necessarily present in this exact area, but nearby.

Glacier National Park is located just North of the NWE FVCS at approximately a one-mile distance, which consists of forested areas.
No important plant areas are present in the area.

Direct Impacts:

The information provided above is based on the information that DEQ had available to it at the time of completing this EA and provided by the applicant. The permit application provided an analysis of aerial photography, topographic maps, geologic maps, soil maps, and other research tools. As the proposed action would be located within the NWE facility property boundary, minor impacts to vegetation cover are anticipated. With the addition of

the FVCS, some land area would be disturbed, losing minor amounts of vegetation cover. The site is part of a parcel which has a natural gas pipeline and this would remain the same with the addition of the FVCS.

Secondary Impacts:

No secondary impacts to vegetation cover, quantity, and quality are expected since land disturbance would just be for the addition of the FVCS.

Cumulative Impacts:

Minor cumulative impacts to vegetation cover, quantity, and quality are expected from this facility as it did reduce the amount of Vegetation cover, but the land is still being utilized for industrial purposes. However, any future actions would not be considered first time disturbance.

5. Terrestrial, Avian, and Aquatic Life and Habitats

As described earlier in Section 4. Vegetation Cover, the area is represented by agricultural and industrial operations and DEQ conducted research using the MTNHP website and ran the query titled "Environmental Summary Report" dated June 6, 2024, which produced the following species of concern (SOC): Bull Trout, Westslope Cutthroat Trout, Grizzly Bear, Fisher, Evening Grosbeak, Pileated Woodpecker, Canada Lynx, Brown Creeper, Varied Thrush, Wolverine, Pacific Wren, Harlequin Duck, Cassin's Finch, Hoary Bat, Veery, Little Brown Myotis, Clark's Nutcracker, Lewis's Woodpecker, Hooked Snowfly, Alberta Snowfly, Brush-tipped Emerald, and the Bat Roost (Non-Cave).

The polygon area analyzed using the MTNHP website produces an area inherently larger than the specific disturbance area, so some additional species may be reported that are not necessarily present in this exact area, but nearby.

No important bird areas are present on the NWE property, but Glacier National Park is located nearby, which is an important bird area.

Direct Impacts:

The potential impact to terrestrial, avian and aquatic life and habitats would be negligible, due to the long-term industrial nature of the site.

Secondary Impacts:

No secondary impacts to terrestrial, avian and aquatic life and habitats stimulated or induced by the direct impacts analyzed above or from the development and operation of the NWE FVCS would be expected.

Cumulative Impacts:

Minor cumulative impacts to terrestrial, avian and aquatic life and habitats stimulated or induced by the direct impacts analyzed above or from the development and operation of the NWE FVCS, as the land is already in industrial use.

6. Unique, Endangered, Fragile, or Limited Environmental Resources

As described in Section 5 above, DEQ conducted a search using the MTNHP webpage. The search used a polygon that overlapped the site and produced the list of species of concern identified in Section 5. The project would not be in core, general or connectivity sage grouse habitat, as designated by the Sage Grouse Habitat Conservation Program (Program) at: http://sagegrouse.mt.gov.

Direct Impacts:

Among the SOC from the MTNHP list, these species would not be displaced by the proposed action as the land where the new FVCS would be constructed is already owned by NWE and has an existing natural gas pipeline adjacent. The potential impact would be negligible.

Secondary Impacts:

The proposed action and the development and operation of the NWE FVCS facility would have no secondary impacts to endangered species because the permit conditions are protective of human and animal health and all lands involved in the proposed action are currently used for industrial operations and would not change the effect to the environment.

Cumulative Impacts:

The proposed action and the development and operation of the NWE FVCS facility would have minor cumulative impacts to endangered species because the permit conditions are protective of human and animal health and all lands involved in the proposed action are currently used for industrial operations and would not change the effect to the environment outside of the original construction of the facility.

7. Historical and Archaeological Sites

The Montana State Historic Preservation Office (SHPO) was contacted to conduct a file search for historical and archaeological sites within Section 35 Township 32 North, Range 19 West. SHPO provided a letter dated June 6, 2024, that indicated there have been a few previously recorded sites within the designated search location. Some of these sites were eligible, one was NHL, one was NR Listed, and others undetermined. The type of sites that have been recorded include several identified as “Historic District” and “Historic Commercial Development.” There previously have been a few reports run for this area as well. It is SHPO’s position that any structure over fifty years of age is considered historic and

is potentially eligible for listing on the National Register of Historic Places. If any structures are within the Area of Potential Effect, and are over fifty years old, SHPO recommends that they be recorded, and a determination of their eligibility be made prior to any disturbance taking place.

However, should structures need to be altered, or if cultural materials are inadvertently discovered during this proposed action, SHPO requests their office be contacted for further investigation.

Direct Impacts:

Although the search by SHPO has identified some sites, the NWE FVCS project is not expected to impact any new locations the likelihood of any cultural properties being impacted is low.

Secondary Impacts:

No secondary impacts to historical and archaeological sites are anticipated since the proposed action is located on land currently in industrial use.

Cumulative Impacts:

No cumulative impacts to historical and archaeological sites are anticipated since the proposed action is located on land currently in industrial use.

8. Aesthetics

The site is located in an area mostly surrounded by forested areas and residential homes, the closest of which is approximately 0.14 miles away from the facility. The proposed action would occur on private land. The nearest residences to the proposed site would potentially experience changes in noise levels. NWE is implementing noise reduction practices on site, with the addition of compressor engine mufflers.

The NWE FVCS is situated on approximately 1.9 acres. There would be construction activity at the site from approximately Q3 2024 to December 2024 as the FVCS is constructed.

Noise levels for compressors must not exceed a day-night level of 55 decibels (dBa) at any noise-sensitive areas, for example, schools, hospitals, or residences (Penn State Extension). The addition of the mufflers will reduce the decibels by approximately 22-29 dBA (NWE Application).

Typical Sound Levels Measured in the Environment

Examples of Common, Easly Recognized Sounds	Decibels (dBa, at 50 feet)	Subjectve Evaluations
Near Jet Engine	140	Deafening
Threshold of Pain (Discomfort)	130	
threshed of Feeling - Hard Rock Band	120	
Accelerating Motorcycle (at a few feet away)	110	
Loud Horn (at 10 feet away)	100	Very Loud
Noisy Urban Street	90	
Noisy Factory	85	
School Cafeteria with Untreated Surfaces	80	Loud
Near Freeway Auto Traffic	60	Moderate
Average Office	50	
Soft Radio Music in Apartment	40	Faint
Average Residence Without Stereo Playing	30	
Average Whisper	20	Very Faint
Rustle of Leaves in Wind	10	
Human Breathing	5	
Threshold of Audibility	0	

Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor (%)	Specified Lmax at 50 feet (dBa)	Specified Lmax at 100 feet (dBa)	Specified Lmax at 1000 feet (dBa)	Specified Lmax at 2000 feet (dBa)	Specified Lmax at 4000 feet (dBa)
All Other Equipment >5 Horsepower	50	85	76	56	50	44
Auger Drill Rig	20	85	72	52	46	40
Backhoe	40	80	70	50	44	38
Crane	16	85	71	51	45	39
Dump Truck	40	84	74	54	48	42
Grader	40	85	75	55	49	43
Pickup Truck	40	55	45	25	19	13
Tractor	40	84	74	54	48	42

Note: Continuous exposure above 85 dBA is likely to degrade the hearing of most people. Range of speech is 50 to 70 dBa.
Source: U.S. Department of Housing and Urban Development, The Noise Guidebook,1985

Source: PG&E Cressey-Gallo 115 kV Power Line Project Initial Study

Direct Impacts:

A minor increase in permanent noise levels is anticipated from this permitting action but would be mitigated with the addition of compressor engine mufflers. The compressor station will operate continuously, 24 hours a day. Noise levels would be further increased through December 2024, during the construction phase. Once construction is completed, the noise from construction would dissipate. A minor change in noise levels is anticipated beyond the property boundary. The NWE profile would change with the addition of the FVCS once construction is completed. Impacts are major from the construction, but the property already has an existing natural gas pipeline and is utilized for industrial purposes.

Secondary Impacts:

There would be minor secondary impacts on the aesthetics because the property currently is in industrial use. Noise levels are anticipated to increase but would be mitigated with the compressor engine mufflers.

Cumulative Impacts:

While in construction phase, the proposed project may cause major, short-term impacts to area aesthetics. Long-term and minor cumulative impacts are anticipated as the land is currently used for natural gas activities adjacent to the proposed FVCS (MAQP #5309-00). Noise levels would increase, but noise reducing measures would be put in place, therefore the impacts would be minor.

9. Demands on Environmental Resources of Land, Water, Air, or Energy

The site is located on land owned by NWE with existing natural gas activities, including an existing natural gas pipeline. On the property, there are existing forested areas, with water sources nearby, see Sections 2 and 4 of this EA for details.

Direct Impacts:

During construction of the period of the NWE FVCS, there was an increase on the demands of land, water, air, and energy. Once operational, energy and electric demands would continue for the duration of the facility's lifetime at or near current levels. See the Air Quality and Water Quality sections of the EA to review the potential impacts from the proposed action regarding air and water resources.

Secondary Impacts:

No secondary impacts to demands on land, water, air, and energy are anticipated as a result of this permitting action. Minor impacts are anticipated after the initial construction of the facility as it includes building structures where there were none previously, but since the location has been used for industrial purposes prior to the construction of the FVCS, those impacts are now negligible.

Cumulative Impacts:

Minor cumulative impacts to demands on land, water, air, and energy are anticipated as a result of this permitting action. Minor impacts are anticipated after the initial construction of the facility as it includes building structures where there were none previously, but the site has been used for industrial purposes prior to the construction and operation of the FVCS.

10. Impacts on Other Environmental Resources

The site currently has a natural gas pipeline, and the nearby areas are mainly the Great Bear Wilderness Area and Glacier National Park.

Direct Impacts:

No other environmental resources are known to have been identified in the area beyond those discussed above. Hence, there is no impact to other environmental resources.

Secondary Impacts:

No secondary impacts to other environmental resources are anticipated as a result of the proposed permitting action.

Cumulative Impacts:

No cumulative impacts to other environmental resources are anticipated as a result of the proposed permitting action.

11. Human Health and Safety

The applicant would be required to adhere to all applicable state and federal safety laws. The Occupational Safety and Health Administration (OSHA) has developed rules and guidelines to reduce the risks associated with this type of labor. Few, if any, members of the public would be in immediate proximity to the project during construction or operations. The access to the public would continue to be restricted to this property.

Direct Impacts:

Negligible changes in impacts to human health and safety are anticipated as a result of this project action. Upon initial startup of operation there would be additional traffic in and out of this area, but these activities, however, are regulated by other state and federal laws to ensure they are operated safely.

Secondary Impacts:

No secondary impacts to human health and safety are anticipated as a result of the proposed permitting action.

Cumulative Impacts:

No cumulative impacts to human health and safety are anticipated as a result of the proposed permitting action.

12. Industrial, Commercial, and Agricultural Activities and Production

This site is currently zoned as Middle Canyon zoning designation. The land is situated in the Flathead County Canyon Area Land Use Regulatory System (CALURS) zoning district of Flathead Valley. NWE has obtained a minor land use permit for public utility structures in accordance with Section 6.2, Subsection B1 (public utility structures) of the Flathead Valley CALURS guidelines. This site is used for industrial purposes as it was previously owned by NWE and there is an existing natural gas pipeline adjacent to the FVCS.

Direct Impacts:

The construction of the FVCS would not change the purpose of the property as it is currently being used for industrial purposes, with the existing natural gas pipeline. Once operational impacts on the industrial, commercial, and agricultural activities and production in the area would be negligible.

Secondary Impacts:

No secondary impacts to industrial, commercial, and agricultural activities and production are anticipated as a result of the proposed permitting action.

Cumulative Impacts:

Cumulative impacts upon startup of construction and operational are minor major as the land is used for industrial purposes. Once operational, the cumulative impacts are negligible as the facility is now used for industrial purposes on land that was already used for industrial purposes.

13. Quantity and Distribution of Employment

There currently are approximately no permanent jobs at the NWE FVCS site. During the construction phase of the project, it would be broken up into three parts. The piping phase would employee approximately 4-5 temporary construction workers for 10 hours/day, 5 days/week, for approximately 2 months. Phase two of building and general construction would employee approximately 10 temporary construction workers for 5 days/week, for approximately 3 months. The NorthWestern Assembly Crew would have approximately 5 NWE employees onsite 5 days/week, 8 hours/day, for approximately 3 months.

No new full-time jobs would result from this permitting action. The site, once operational, would have monthly site visits from existing NWE employees. During peak cold events (a few days per year during winter storms), staff would be on-site as well.

Direct Impacts:

The proposed action would be expected to have no impact on the overall distribution of employment as the facility no new additional employment is resulting from this permitting action, apart from the temporary employment of the construction personnel during the construction of the FVCS.

Secondary Impacts:

No secondary impact to the quality and distribution of employment is expected on long-term employment from the proposed action as no new employees are being added from this permitting action.

Cumulative Impacts:

Minor impacts upon the startup and construction of the facility happened in relation to employment, with the temporary employment of the construction personnel. Once operational, there would be no impacts on employment for this permitting action. No new employees would be added as a result of this permitting action.

14. Local and State Tax Base and Tax Revenues

The proposed action would be expected to have minor impacts on the local and state tax base and tax revenue.

Direct Impacts:

Local, state, and federal governments would be responsible for appraising the property, setting tax rates, collecting taxes, from the companies, employees, or landowners benefiting from this operation. A minor impact is expected on the tax base and revenue with the proposed action.

Secondary Impacts:

No secondary impacts to local and state tax base and tax revenues are anticipated as a result of the proposed permitting action.

Cumulative Impacts:

Minor impacts to local and state tax base and tax revenues were anticipated with the construction and operation of a new facility in the area.

15. Demand for Government Services

The area surrounding the NWE FVCS site consists of the adjacent existing natural gas pipeline, along with various wilderness areas, including West Glacier KOA Resort, John F Stevens Canyon, the West Entrance to Glacier National Park, and the Glacier National Park Headquarters all located within one mile of this facility.

Direct Impacts:

Compliance review and assistance oversight by DEQ AQB would be conducted in concert with other area activity when in the vicinity The proposed action would have only minor impacts on demand for government services, mainly through oversight by DEQ AQB.

Secondary Impacts:

No secondary impacts are anticipated on government services with the proposed action and a minimal increase in impact would occur from the permitting and compliance needs associated with this newly permitted facility.

Cumulative Impacts:

Minor cumulative impacts are anticipated on government services with the proposed action and a minimal increase in impact would occur from the permitting and compliance needs associated with this newly permitted facility.

16. Locally-Adopted Environmental Plans and Goals

A review was also conducted on June 6, 2024, for a City of West Glacier website, however locally adopted plans and goals are in existence. Therefore, no impacts are anticipated.

Direct Impacts:

NWE's FVCS facility is on property already owned by NWE, adjacent to an existing natural gas pipeline. No impacts from the proposed action would be expected relative to any locally adopted community planning goals.

Secondary Impacts:

No secondary impacts to the locally adopted environmental plans and goals are anticipated as a result of the proposed permitting action.

Cumulative Impacts:

No cumulative impacts to the locally adopted environmental plans and goals are anticipated as a result of the proposed permitting action.

17. Access to and Quality of Recreational and Wilderness Activities

The NWE FVCS is located approximately 3 miles from the Great Bear Wilderness area to the South. It is also located approximately one mile South of Glacier National Park. Lake McDonald is approximately 5 miles north of the FVCS. The West Glacier KOA Resort, John F Stevens Canyon, the West Entrance to Glacier National Park, and the Glacier National Park Headquarters all located within one mile of this facility.

Direct Impacts:

There would be no impacts to the access to wilderness activities as none are in the vicinity of the proposed action. Recreationalists in the nearby area could potentially have an increase in noise levels, which would be mitigated by the addition of compressor engine mufflers. Due to the distance of the recreational areas, minor changes in aesthetics would be noticed once the construction of the FVCS was complete. The addition of the FVCS would have minor impacts on the surrounding wilderness areas. Access to the wilderness areas would not change.

Secondary Impacts:

No secondary impacts to access and quality of recreational and wilderness activities are anticipated as a result of the proposed permitting action which is wholly contained within the boundary of the NWE property.

Cumulative Impacts:

No cumulative impacts to access and quality of recreational and wilderness activities are anticipated as a result of the proposed permitting action which is wholly contained within the boundary of the NWE property. Even upon startup of construction of the FVCS facility, those nearby would notice an increase in noise levels and traffic, but once construction is completed, those would no longer be a factor. Noise levels would have a minor increase, but with a mitigation plan in place. The addition of the FVCS would change the aesthetics of the location.

18. Density and Distribution of Population and Housing

The proximity of the proposed action to the Cities of West Glacier, Kalispell, Columbia Falls, and Whitefish would accommodate housing needs for workers.

Direct Impacts:

This permitting action would not add to the population or require additional housing, therefore, no impacts to density and distribution of population and housing are anticipated.

Secondary Impacts:

No secondary impacts to density and distribution of population and housing are anticipated as a result of the proposed permitting action or the operation of the NWE FVCS.

Cumulative Impacts:

No cumulative impacts to density and distribution of population and housing are anticipated as a result of the proposed permitting action as no new employees would be added as result of this permitting action. A minor increase would be seen during the construction phase, as construction personnel would be needed, but once the construction is over, those employees would no longer be on-site.

19. Social Structures and Mores

Based on the required information provided by NWE DEQ is not aware of any native cultural concerns that would be affected by the proposed action on this existing facility. The NWE FVCS is located within 50 miles of the Blackfeet Indian Reservation and within 50 miles of the Flathead Reservation.

Direct Impacts:

The proposed action is located on an existing industrial site, no disruption of native or traditional lifestyles would be expected, therefore, no impacts to social structure and mores are anticipated.

Secondary Impacts:

No secondary impacts to social structures and mores are anticipated as a result of the proposed actions.

Cumulative Impacts:

Outside of original construction of the facility, no cumulative impacts to social structures and mores are anticipated as a result of the proposed actions. Cumulative impacts are anticipated to be minor as the location is already in industrial use.

20. Cultural Uniqueness and Diversity

Based on the required information provided by NWE, DEQ is not aware of any unique qualities of the area that would be affected by the proposed action at this existing facility.

Direct Impacts:

No impacts to cultural uniqueness and diversity are anticipated from this project.

Secondary Impacts:

No secondary impacts to cultural uniqueness and diversity are anticipated as a result of the proposed permitting action or from the operation of the NWE FVCS facility on existing industrial property.

Cumulative Impacts:

No cumulative impacts to cultural uniqueness and diversity are anticipated as a result of the proposed permitting action or from the operation of the NWE FVCS facility on what is now existing industrial property.

21. Private Property Impacts

The proposed action would take place on privately-owned land. The analysis below in response to the Private Property Assessment Act indicates no impact. DEQ does not plan to

deny the application or impose conditions that would restrict the regulated person's use of private property so as to constitute a taking. Further, if the application is complete, DEQ must take action on the permit pursuant to § 75-2-218(2), MCA. Therefore, DEQ does not have discretion to take the action in another way that would have less impact on private property—its action is bound by a statute.

There are private residences in the area of the proposed action. The closest residence, including homes or structures, is located approximately 0.14 miles to the south of 232 Highline Boulevard.

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 DEQ determined there are no taking or damaging implications associated with this permit action.

22. Other Appropriate Social and Economic Circumstances

Due to the nature of the proposed action, no further direct or secondary impacts are anticipated from this project.

23. Greenhouse Gas Assessment

Issuance of this permit would authorize the construction and operation of the NWE FVCS facility, a compressor engine station, including the utilization of two compressor engines, two gas boilers, an emergency generator, and building heaters.

The analysis area for this resource is limited to the activities regulated by the issuance of MAQP#5309-00, which is to permit the construction and operation of the Flathead Valley Compressor Station. The amount of natural gas fuel utilized at this site may be impacted by a number of factors including seasonal weather impediments and equipment malfunctions. To account for these factors DEQ has calculated the max amount of emissions using 8760 hours per year of operation.

For the purpose of this analysis, DEQ has defined greenhouse gas emissions as the following gas species: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and many species of fluorinated compounds. The range of fluorinated compounds includes numerous chemicals which are used in many household and industrial products. Other pollutants can have some properties that also are similar to those mentioned above, but the EPA has clearly identified the species above as the primary GHGs. Water vapor is also technically a greenhouse gas, but its properties are controlled by the temperature and pressure within the atmosphere, and it is not considered an anthropogenic species.

The combustion of diesel fuel at the site would release GHGs primarily being carbon dioxide (CO_2), nitrous oxide (N_2O) and much smaller concentrations of uncombusted fuel components including methane (CH_4) and other volatile organic compounds (VOCs).

DEQ has calculated GHG emissions using the EPA Simplified GHG Calculator version May 2023, for the purpose of totaling GHG emissions. This tool totals carbon dioxide (CO_2), nitrous oxide (N_2O), and methane (CH_4) and reports the total as CO_2 equivalent (CO_2e) in metric tons CO_2e. The calculations in this tool are widely accepted to represent reliable calculation approaches for developing a GHG inventory.

Direct Impacts:

Operation of the two compressor engines, two gas boilers, an emergency generator, and building heaters throughout the life of the facility would produce exhaust fumes containing GHGs.

DEQ estimates that approximately 11,934 metric tons of CO2e would be produced per year. To account for variability due to the factors described above, DEQ has calculated the maximum amount of emissions using a factor of 8760 hours per year for operation in combination with the maximum heat input value. Using the Environmental Protection Agency's (EPA) simplified GHG Emissions Calculator for mobile sources, approximately 11,934 metric tons of CO_2e would be produced per year.

The construction of the NWE FVCS would result in temporary GHG emissions. The total construction would result in approximately 163 metric tons of CO2e. Once construction was completed, no future emissions would occur from this action.

Secondary Impacts:

GHG emissions contribute to changes in atmospheric radiative forcing, resulting in climate change impacts. GHGs act to contain solar energy loss by trapping longer wave radiation emitted from the Earth's surface and act as a positive radiative forcing component (BLM 2021). The impacts of climate change throughout the Northern part of Montana may include changes in flooding and drought, rising temperatures, the spread of invasive species (BLM 2021).

Cumulative Impacts:

Montana recently used the EPA State Inventory Tool (SIT) to develop a greenhouse gas inventory in conjunction with preparation of a possible grant application for the Community Planning Reduction Grant (CPRG) program. This tool was developed by EPA to help states develop their own greenhouse gas inventories, and this relies upon data already collected by the federal government through various agencies. The inventory specifically deals with carbon dioxide, methane, and nitrous oxide and reports the total as CO_2e. The SIT consists of eleven Excel based modules with pre-populated data that can be used as default settings or in some cases, allows states to input their own data when the state believes their own data provides a higher level of quality and accuracy. Once each of the eleven modules is filled out, the data from each module is exported into a final "synthesis" module which summarizes all of the data into a single file. Within the synthesis file, several worksheets display the output data in a number of formats such as emissions by sector and emissions by type of greenhouse gas.

DEQ has determined the use of the default data provides a reasonable representation of the greenhouse gas inventory for the various sectors of the state, and an estimated annual greenhouse gas inventory by year. The SIT data is currently only updated through the year 2021, as it takes several years to validate and make new data available within revised modules.

Future GHG emissions from operations such as this site would be represented within the module Carbon Dioxide Emissions from Fossil Fuel Combustion, and emissions from the Transportation Sector within the Commercial and Industrial sectors. At present, the total GHG emissions for the state of Montana are approximately 47.77 $MMTCO_2e$ annually. If

the NWE FVCS were to exist for 30 years, the total project lifetime emissions would be approximately 238,843 metric tons of CO_2e. The operation of the NWE FVCS accounts for 0.025% of GHG emissions in Montana per year.

GHG emissions that would be emitted as a result of the proposed activities would add to GHG emissions from other sources. The current private land utilization[1] or No Action Alternative of the site also produces GHGs.

Reference

Bureau of Land Management (BLM) 2021. Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends from Coal, Oil, and Gas Exploration and Development on the Federal Mineral Estate. Available at: https://www.blm.gov/content/ghg/2021/. Accessed February 28, 2024.

PROPOSED ACTION ALTERNATIVES:

No Action Alternative:

In addition to the analysis above for the proposed action, DEQ is considering a "no action" alternative. The "no action" alternative would deny the approval of the proposed permitting action. The applicant would lack the authority to conduct the proposed activity. Any potential impacts that would result from the proposed action would not occur. The no action alternative forms the baseline from which the impacts of the proposed action can be measured.

Other Ways to Accomplish the Action:

In order to meet the project objective to permit the new NWE FVCS facility, there are no other ways to accomplish this action outside of creating a new MAQP for the FVCS facility.

If the applicant demonstrates compliance with all applicable rules and regulations as required for approval, the "no action" alternative would not be appropriate. Pursuant to, § 75-1-201(4)(a), (MCA) DEQ "may not withhold, deny, or impose conditions on any permit or other authority to act based on" an environmental assessment.

CONSULTATION

DEQ engaged in internal and external efforts to identify substantive issues and/or concerns related to the proposed project. Internal scoping consisted of internal review of the environmental assessment document by DEQ staff. External scoping efforts also included queries to the following websites/databases/personnel:

MAQP#5309-00 Application, EPA State Inventory Tool, the EPA GHG Calculator Tool, the Montana Natural Heritage Program Website, the Montana Cadastral Mapping Program, the City of Shelby Website, and the State Historical Preservation Office.

PUBLIC INVOLVEMENT:

The public comment period for this permit action wass from July 19, 2024, through August 5, 2024. Public comments are included in Section I of the Permit Analysis.

OTHER GOVERNMENTAL AGENCIES WITH JURSIDICTION:

The proposed project would be located on private land. All applicable state and federal rules must be adhered to, which, at some level, may also include other state, or federal agency jurisdiction.

This environmental review analyzes the proposed project submitted by the Applicant. The project would be negligible and would be fully reclaimed to the permitted postmining land uses at the conclusion of the project and thus would not contribute to the long-term cumulative effects of mining in the area.

NEED FOR FURTHER ANALYSIS AND SIGNIFICANCE OF POTENTIAL IMPACTS

When determining whether the preparation of an environmental impact statement is needed, DEQ is required to consider the seven significance criteria set forth in ARM 17.4.608, which are as follows:

- The severity, duration, geographic extent, and frequency of the occurrence of the impact;
- The probability that the impact will occur if the proposed action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur;
- Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts – identify the parameters of the proposed action;
- The quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources and values;
- The importance to the state and to society of each environmental resource or value that would be affected.
- Any precedent that would be set as a result of an impact of the proposed action that would commit the department to future actions with significant impacts or a decision in principle about such future actions; and
- Potential conflict with local, state, or federal laws, requirements, or formal plans.

CONCLUSIONS AND FINDINGS

DEQ finds that this action results in negligible impacts to air quality and GHG emissions in Flathead County, Montana.

The severity, duration, geographic extent and frequency of the occurrence of the impacts associated with the proposed air quality project would be limited. The proposed action would result in new disturbance with the construction of the FVCS. The site would be permitted to operate the NWE FVCS facility.

As discussed in this EA, DEQ has not identified any significant impacts associated with the proposed actions for any environmental resource. DEQ does not believe that the proposed activities by the Applicant would have any growth-inducing or growth-inhibiting aspects, or contribution to cumulative impacts. The proposed site does not appear to contain known unique or fragile resources.
There are no unique or known endangered fragile resources in the project area. No underground disturbance would be required for this project.

There would be major impacts to view-shed aesthetics as the facility would be constructed where there previously was not one.

Demands on the environmental resources of land, water, air, or energy would not be significant, as it is already an operational facility.

Impacts to human health and safety would not be significant as access roads would be closed to the public and because the site is on Privately Owned Land. The public is not allowed on the NWE FVCS site.

As discussed in this EA, DEQ has not identified any significant impacts associated with the proposed activities on any environmental resource.

Issuance of a Montana Air Quality Permit to the Applicant does not set any precedent that commits DEQ to future actions with significant impacts or a decision in principle about such future actions If the Applicant submits another modification or amendment, DEQ is not committed to issuing those revisions. DEQ would conduct an environmental review for any subsequent permit modifications sought by the Applicant that require environmental review. DEQ would make permitting decisions based on the criteria set forth in the Clean Air Act of Montana.

Issuance of the Permit to the Applicant does not set a precedent for DEQ's review of other applications for Permits, including the level of environmental review. The level of environmental review decision is made based on case-specific consideration of the criteria set forth in ARM 17.4.608.

Finally, DEQ does not believe that the proposed air quality permitting action by the Applicant would have any growth-inducing or growth inhibiting impacts that would conflict with any local, state, or federal laws, requirements, or formal plans.

Based on a consideration of the criteria set forth in ARM 17.4.608, the proposed operation is not predicted to significantly impact the quality of the human environment. Therefore, preparation of an EA is the appropriate level of environmental review for MEPA.

PREPARATION AND APPROVAL

EA and Significance Determination Table prepared by:

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Environmental Assessment Reviewed by:

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References

1.) **Air Quality Permit Application Received May 31, 2024**
2.) **Montana State Historical Preservation Office (SHPO) Report Received June 6, 2024**

HIS SHPO. (n.d.). Svc.mt.gov. https://svc.mt.gov/adsams/DocumentSubmission.aspx

3.) **Montana Natural Heritage Program (Website Search Downloads) Last Download June 6, 2024**

NHP Mapviewer. (n.d.). Mtnhp.org. https://mtnhp.org/MapViewer/?t=4

4.) **Montana Cadastral GIS Layer – Through-Out Project Up Until Decision Issuance** (2014). Mtdeq.us. https://gis.mtdeq.us/portal/home/webmap/viewer.html?webmap=bb443b5b50d74f1d83f040497010882e

5.) **Air Quality Permit MAQP #2667-14**
6.) **Air Quality Permit MAQP #2934-01**
7.) **Montana Bureau of Mining and Geology**
"MBMG | 3D | Viewer." *Data.mbmg.mtech.edu*, data.mbmg.mtech.edu/3D/DataViewer.asp?Database=2&focus=Menu&. Accessed 8 July 2024.
b_79-text.pdf (mtech.edu)

8.) **Bureau of Land Management (BLM) 2021**. Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends from Coal, Oil, and Gas Exploration and Development on the Federal Mineral Estate. Available at: https://www.blm.gov/content/ghg/2021/. Accessed February 28, 2024.

9.) **Penn State Extension.** (2015, March 26). *Understanding Natural Gas Compressor Stations*. Penn State Extension. https://extension.psu.edu/understanding-natural-gas-compressor-stations

ABBREVIATIONS and ACRONYMS

AQB – Air Quality Bureau
ARM - Administrative Rules of Montana
BACT – Best Available Control Technology
BMP - Best Management Practices
CAA – Clean Air Act of Montana
CFR - Code of Federal Regulations
CO - carbon monoxide
DEQ – Department of Environmental Quality
DNRC – Department of Natural Recourses and Conservation
EA – Environmental Assessment
EIS – Environmental Impact Statement
EPA - U.S. Environmental Protection Agency
FCAA- Federal Clean Air Act
FVCS – Flathead Valley Compressor Engine Station
MAQP – Montana Air Quality Permit
MCA – Montana Code Annotated
MEPA – Montana Environmental Policy Act
MTNHP - Montana Natural Heritage Program
NO_X - oxides of nitrogen
NWE- NorthWestern Energy
PM - particulate matter
PM_{10} - particulate matter with an aerodynamic diameter of 10 microns and less
$PM_{2.5}$ - particulate matter with an aerodynamic diameter of 2.5 microns and less
PPAA - Private Property Assessment Act
Program - Sage Grouse Habitat Conservation Program
PSD - Prevention of Significant Deterioration
SHPO - Montana State Historic Preservation Office
SOC - Species of Concern
SO_2 - sulfur dioxide
tpy – tons per year
U.S.C. - United States Code
VOC - volatile organic compound