August 26, 2024

John Rae, General Manager
Potentate Mining, LLC.
Yellow Dog Mine
P.O. Box 1110
Phillipsburg, MT 59858

Sent via email: johnrae@magma.ca

RE: Final Permit Issuance for MAQP #5291-01

Dear Mr. Rae:

Montana Air Quality Permit (MAQP) #5291-01 is deemed final as of August 22, 2024, by DEQ. This permit is for a nonmetallic and metallic mineral mine. All conditions of the Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For DEQ,

Craig Henrikson
Permitting Services Section Supervisor
Air Quality Bureau
(406) 444-6711

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

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

Montana Air Quality Permit #5291-01

Potentate Mining, LLC.
Yellow Dog Mine
Section 21, Township 6 North, Range 16 West
P.O. Box 1110
Phillipsburg, MT 59858

August 22, 2024

MONTANA AIR QUALITY PERMIT

Issued To:	Potentate Mining, LLC Yellow Dog Mine P.O. Box 1110 Philipsburg, MT 59858	MAQP: #5291-01 Application Complete: 06/12/2024 Preliminary Determination (PD) Issued: 07/01/2024 Departments Decision (DD) Issued: 08/06/2024 Permit Final: 08/22/2024

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Potentate Mining, LLC. – Yellow Dog Mine (Potentate), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended, for the following:

Section I: Permitted Facilities

A. Plant Location

Potentate is located approximately 24 miles west of Phillipsburg along Highway 1 at latitude 46.25353, longitude -113.61688. The legal description of the mine site is Section 21, Township 6 North, Range 16 West in Granite County.

B. Current Permit Action

On May 20, 2024, DEQ received an application from Elkhorn Engineering, LLC. on behalf of Potentate Mining, LLC., to add two (2) additional diesel fired generators and accept legally enforceable limits on hours of operation for all diesel fired generator sets.

Section II: Conditions and Limitations

A. Emission Limitations

1. Potentate shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 Code of Federal Regulations (CFR), Chapter 60, Subchapter LL - Standards of Performance for Metallic Mineral Processing Plants (ARM 17.8.340, ARM 17.8.749 and 40 CFR 60, Subpart LL).

2. Potentate shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR 60, Subchapter OOO - Standards of Performance for Nonmetallic Mineral Processing Plants (ARM 17.8.340, ARM 17.8.749 and 40 CFR 60, Subpart OOO).

3. All visible emissions from any non-NSPS affected equipment shall not exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).

4. Water and spray bars shall be available on-site at all times and operated as necessary to maintain compliance with the opacity limitations in Sections II.A.1, II.A.2, and II.A.3 (ARM 17.8.752).

5. Operation of each of the diesel fired generator engines shall not exceed 5,136 hours per calendar year (ARM 17.8.749 and 17.8.1204)

6. Potentate 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).

7. Potentate 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.6 (ARM 17.8.752).

8. Potentate shall not operate more than 3 screens at any given time and the total combined maximum rated design capacity of the screens shall not exceed 252 tons per hour (tph) (ARM 17.8.749).

9. Potentate shall not operate or have on-site more than four (4) diesel engine/generator(s). The maximum combined capacity of the engine(s) that drive the generator(s) shall not exceed 1,432 horsepower (hp) (ARM 17.8.749).

10. Potentate shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Engines and 40 CFR 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocation Internal Combustion Engines, for any applicable diesel or gasoline engine (ARM 17.8.340, 40 CFR 60, Subpart IIII; ARM 17.8.342; and 40 CFR 63, Subpart ZZZZ).

11. Potentate 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).

B. Testing Requirements

1. Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup, and Environmental Protection Agency (EPA) Method 9 opacity test and/or other methods and procedures, as specified in 40 CFR Part 60.675 must be performed on all NSPS-affected equipment (ARM 17.8.340, 40 CFR 60, Subpart A and Subpart OOO).

2. Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup, and Environmental Protection Agency (EPA) Method 9 opacity test and/or other methods and procedures, as specified in 40 CFR Part 60.675 must be performed on all NSPS-affected equipment to demonstrate compliance with the emissions limitations contained in Section II.A.2 (ARM 17.8.340, 40 CFR 60, Subpart A and Subpart LL).

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

4. The Department of Environmental Quality (DEQ) may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. Potentate 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. Potentate 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 Potentate 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 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).

SECTION III: General Conditions

A. Inspection – Potentate 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 Potentate fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Potentate 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 Potentate 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
Potentate Mining, LLC. – Yellow Dog Mine
MAQP #5291-01

I. Introduction/Process Description

Potentate Mining, LLC., (Potentate) owns and operates a nonmetallic and metallic metal mining facility. The facility is located in Section 21, Township 6 North, Range 16 West, and is known as the Yellow Dog Mine.

A. Permitted Equipment

- four (4) diesel fired generators
- one (1) grizzly feeder
- three (3) screens
- four (4) jigs
- two (2) separators
- three (3) conveyors
- associated mining equipment

B. Source Description

The Yellow Dog Mine contains sapphire and gold bearing ore. The process starts by mining and loading the ore from stockpiles into a grizzly feeder where large rocks and debris are separated. The ore flows through the grizzly feeder onto conveyor belts and heads to the trommel wash plant. Once the ore reaches the trommel, it is washed with high pressure water to separate the fine material. As the ore travels down the trommel, the material passes over a vibratory screen deck and jigs for concentrating the sapphires. Additional screens separate material larger than ¾" (¾" plus) and smaller than ¾" (¾"minus). The ¾"- material falls into a slurry pump and is pumped into a slurry distributer where is passes through high pressure jigs to separate the materials again with 1/8"minus material falls into a secondary jig. At this point, all the material is considered saturated and with no emissions. The material flows from the primary jig into a centrifugal bowl separator that rotates continuously to separate materials of differing densities.

The ¾" plus material leaves the trommel and passes through a double vibratory deck and screen. After passing through the screen, the 1¼"plus material is transported via conveyer to stockpiles. The ¾" to 1 ¼" materials are slurried to a duplex jig where it is combined with material from the primary jig and centrifugal bowl and flows into an addition double deck vibratory screen for final separation. After final separation, the waste material is dewatered and stockpiled for later use in mine site reclamation.

C. Permit History

DEQ issued Montana Air Quality Permit **MAQP #5291-00** to Potentate Mining, LLC., on August 15, 2023.

D. Current Permit Action

On May 20, 2024, DEQ received an application from Elkhorn Engineering, LLC., on behalf of Potentate Mining, LLC., to add two (2) additional diesel fired generators. Potentate has accepted legally enforceable limitations on hours of operation for the diesel fired generators for the mine site to avoid becoming a major source. The application was deemed administratively compete on June 13, 2024, due to the publisher's limited print schedule. **MAQP #5291-01** replaces MAQP #5291-00.

E. Response to Public Comment (If received)

Person/Group Commenting	Permit Reference	Comment	DEQ Response
Dusty Webber	None	"Please approve Potentate Mining's Permit Application to install and operate two additional (2) diesel fired generator engines."	No response.

F. Additional Information

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

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from DEQ of Environmental Quality (DEQ). Upon request, DEQ will provide references for the 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).

Potentate 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

Potentate 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, Potentate 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). Potentate 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 LL – Standard of Performance for Metallic Mineral Processing Plants. This subpart applies to because it commenced construction after August 24, 1982, meets the definition of metallic minerals, and operates equipment listed in the subpart and is not located underground and does not process uranium ore.

    c. 40 CFR 60, Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants. In order for a processing plant to be subject to this subpart, the facility must meet the definition of an affected facility and the affected equipment must have been constructed, reconstructed, or modified after August 31, 1983. Potentate operates equipment subject to this subpart because it meets the definition of an effected facility and has been constructed or modified after August 31, 1983.

d. 40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE). Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are manufactured after April 1, 2006, and are not fire pump engines, and owners and operators of stationary CI ICE after July 11, 2005, are subject to this subpart. Potentate operates CI ICE that may be subject to this subpart because they meet the definition of an affected facility if operated as a stationary source.

9. 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 a NESHAP Subpart as listed below:

b. 40 CFR 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants (HAPs) for Stationary Reciprocating Internal Combustion Engines (RICE). An owner or operator of a stationary reciprocating internal combustion engine (RICE) at a major or area source of HAP emissions is subject to this rule except if the stationary RICE is being tested at a stationary RICE test cell/stand. An area source of HAP emissions is a source that is not a major source. Garnet operates RICE equipment subject to this subpart when operated as a stationary source.

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

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

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

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

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify, or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year of any pollutant. Potentate has a PTE greater than 25 tons per year of Particulate Matter (PM), Particulate Matter with an aerodynamic diameter of 10 microns (PM_{10}) and Oxides of Nitrogen (NO_X); 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. Potentate 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. Potentate submitted an affidavit of publication of public notice for the *June 5, 2024*, issue of the *Silver State Post*, a newspaper of general circulation in the Town of Phillipsburg in Granite 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 Potentate 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.

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

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

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

This facility is not a major stationary source 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).

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

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

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

   b. PTE > 10 tons/year of any one 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 #5291-01 for Potentate, 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 current NSPS (Subpart(s) A, LL, OOO, and IIII).

   e. This facility is subject to current NESHAP (Subpart(s) 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.

   h. As allowed by ARM 17.8.1204(3), DEQ may exempt a source from the requirement to obtain an air quality operating permit by establishing federally enforceable limitations which limit that source's potential to emit.

i. In applying for an exemption under this section, the owner or operator of the source shall certify to DEQ that the source's potential to emit does not require the source to obtain an air quality operating permit.
ii. Any source that obtains a federally enforceable limit on potential to emit shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit.

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

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.

Potentate 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 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 Potentate will be a minor source of emissions as defined under Title V based on a requested legally enforceable permit limit.

III. BACT Determination

A BACT determination is required for each new or modified source. Potentate 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 Potentate in permit application #5291-01, addressing some available methods of controlling emissions from diesel 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.

A. Diesel Engines

Non-Selective Catalytic Reduction (NSCR)
Non-selective catalytic reduction is generally the most widely accepted method for NOX-reduction technologies, as well as the most economically feasible.
The exhaust from the engine is routed through a metallic catalyst, which supports the reduction/oxidation reaction of NO_X and CO into N_2 and CO_2, respectively. The efficiency of the reaction is directly related to the oxygen content in the exhaust gas, and thus related to the air to fuel (A/F) ratio of the combustion. Therefore, this control technology is ideal for rich-burn combustion scenarios. The two engines at the facility are diesel fired, which are inherently lean burn, and cannot operate in a rich burn scenario. NSCR is a technically infeasible control technology for use at the facility since it is designed for rich-burn engines.

Selective Catalytic Reduction (SCR)
Selective catalytic reduction (SCR) is a technology applicable to diesel fired and other lean burn engines, that utilizes injected ammonia or urea into the engine exhaust. The ammonia then acts as the reducing agent for the conversion of NO_X into N_2. A metallic catalyst is also required for SCR to keep the exhaust properties at suitable conditions to support the reduction reactions. Potentate considers SCR control technology to have a negative energy impact. Additional tankage and pump capacity would be necessary for ammonia/urea injection. The injection pumps would require additional electrical power at the facility, which would require adding additional generators or replacing an existing generator for a larger size model.

Lean NOx Catalyst (LNC)
Lean NOx Catalyst (LNC) technology uses additional diesel fuel (or another hydrocarbon reducing agent) injected into the exhaust of a rich or lean burn engine, to support the reduction of NO_X to N_2. It is also possible to passively reduce the NO_X emissions, without the need of additional diesel fuel (or hydrocarbon), but the observed conversion rate is much lower. This technology also requires a precious metal catalyst, as well as a porous zeolite structure. The zeolite structure provides conversion sites on its surface area for the hydrocarbons to support the reduction of NO_X to N_2.

Good Combustion Practices
Any new diesel-fired engine would likely be required to comply with the federal engine emission limitations including, for example, EPA Tier emission standards for non-road engines (40 CFR Part 89 or 1039), New Source Performance Standard emission limitations for stationary compression ignition engines (40 CFR 60, Subpart IIII) and stationary spark ignition engines (40 CFR 60, Subpart JJJJ), or National Emission Standards for Hazardous Air Pollutant Sources for Reciprocation Internal Combustion Engines (40 CFR 63, Subpart ZZZZ).

Based on the above analysis and information, DEQ agrees with Potentate that compliance with applicable federal standards and proper operation and maintenance of the engines and good combustion practices constitute BACT. The control option selected has controls and control costs comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

IV. Emission Inventory (uncontrolled with annual limits)

Emission Source	PM	PM_{10}	$PM_{2.5}$	NO_X	CO	VOC	SO_2
Cold Aggregate Storage Piles	3.36	1.59	0.24	--	--	--	--
Cold Aggregate Handling/Conveyors	0.61	0.20	0.06	--	--	--	--
TPH Screen	1.43	0.48	0.03	--	--	--	--
Haul Roads / Vehicle Traffic	54.57	9.38	1.67	--	--	--	--
671 HP Engine	3.79	3.79	3.79	41.36	7.74	6.51	3.53
587 HP Engine	0.66	0.66	0.66	18.69	10.07	3.72	3.09
134 HP Engine	0.01	0.01	0.01	0.23	2.83	0.11	0.71
40 HP engine	0.18	0.18	0.18	2.15	0.69	0.25	0.21
Total Emissions	105.50	16.10	6.46	60.05	17.81	10.24	6.62

Cold Aggregate Storage Piles

Maximum Process Rate = 84 ton/hr (Maximum plant process rate)	84.2	**ton/hr**
Maximum Hours of Operation = 5,136 hrs/yr	5136	**hrs/yr**
Number of Piles = 1 piles	1	**piles**
PM Emissions:		
Predictive equation for emission factor provided per AP 42, Sec. 13.2.4.3, 11/06.		
Emission Factor = k (0.0032) * (U/5)^1.3 * (M / 2)^-1.4 = 0.00388 lb/ton	0.0039	**lb/ton**
Where: k = particle size multiplier = 0.74 (Value for PM < 30 microns per AP 42, Sec. 13.2.4.3, 11/06)	0.74	
U = mean wind speed = 9.3 mph (Average from values provided in AP 42, Sec. 13.2.4.3, 11/06)	9.3	**mph**
M = material moisture content = 2.5% (Average from values provided in AP 42, Sec. 13.2.4.3, 11/06)	2.5	**%**
Calculation: (84 ton/hr) * (5136 hrs/yr) * (1 piles) * (ton/2000 lb) * (0.00388216962566822 lb/ton) = 0.84 ton/yr	0.84	**ton/yr**
PM10 Emissions:		
Predictive equation for emission factor provided per AP 42, Sec. 13.2.4.3, 11/06.		
Emission Factor = k (0.0032) * (U/5)^1.3 * (M / 2)^-1.4 = 0.00184 lb/ton	0.0018 4	**lb/ton**
Where: k = particle size multiplier = 0.35 (Value for PM < 10 microns per AP 42, Sec. 13.2.4.3, 11/06)	0.35	
U = mean wind speed = 9.3 mph (Average from values provided in AP 42, Sec. 13.2.4.3, 11/06)	9.3	**mph**
M = material moisture content = 2.5% (Average from values provided in AP 42, Sec. 13.2.4.3, 11/06)	2.5	**%**
Calculation: (84 ton/hr) * (5136 hrs/yr) * (1 piles) * (ton/2000 lb) * (0.0018361613094376 7 lb/ton) = 0.40 ton/yr	0.40	**ton/yr**
PM2.5 Emissions:		
Predictive equation for emission factor provided per AP 42, Sec. 13.2.4.3, 11/06.		
Emission Factor = k (0.0032) * (U/5)^1.3 * (M / 2)^-1.4 = 0.00028 lb/ton	0.0002 78	**lb/ton**
Where: k = particle size multiplier = 0.053 (Value for PM < 2.5 microns per AP 42, Sec. 13.2.4.3, 11/06)	0.053	
U = mean wind speed = 9.3 mph (Average from values provided in AP 42, Sec. 13.2.4.3, 11/06)	9.3	**mph**
M = material moisture content = 2.5% (Average from values provided in AP 42, Sec. 13.2.4.3, 11/06)	2.5	**%**
Calculation: (84 ton/hr) * (5136 hrs/yr) * (1 piles) * (ton/2000 lb) * (0.000278047284000562 lb/ton) = 0.06 ton/yr	0.06	**ton/yr**

Conveyor Transfer Point (SCC 3-05-020-06)

Maximum Process Rate = 84 ton/hr (Maximum plant process rate)	84.2	**ton/hr**
Maximum Hours of Operation = 5,136 hrs/yr	5136	**hrs/yr**
Number of Transfers = 20 transfer (Company Information)	20	**transfer**
Total PM Emissions:		
Emission Factor = 0.00014 lb/ton (0.00014 controlled, AP 42, Table 11.19.2-2, 8/04)	0.0001 4	**lb/ton**
Calculation: (84 ton/hr) * (5136 hrs/yr) * (20 transfer) * (ton/2000 lb) * (0.00014 lb/ton) = 0.61 ton/yr	0.61	**ton/yr**
Total PM10 Emissions:		
Emission Factor = 0.000046 lb/ton (0.000046 controlled, AP 42, Table 11.19.2-2, 8/04)	0.0000 46	**lb/ton**
Calculation: (84 ton/hr) * (5136 hrs/yr) * (20 transfer) * (ton/2000 lb) * (0.00014 lb/ton) = 0.20 ton/yr	0.20	**ton/yr**
Total PM2.5 Emissions		
Emission Factor = 0.000013 lb/ton (0.000013 controlled, AP 42, Table 11.19.2-2, 8/04)	0.0000 13	**lb/ton**
Calculation: (84 ton/hr) * (5136 hrs/yr) * (20 transfer) * (ton/2000 lb) * (0.00014 lb/ton) = 0.06 ton/yr	0.06	**ton/yr**

Screening (SCC 3-05-020-02, 03)

Maximum Process Rate = 84 ton/hr (Maximum plant process rate)	84.2	**ton/hr**
Maximum Hours of Operation = 5,136 hrs/yr 1297353.6 tons/year	5136	**hrs/yr**
Number of Screens = 3 screen(s) (Company Information)	3	**screen(s)**
Total PM Emissions:		
Emission Factor = 0.0022 lb/ton (0.0022 controlled, AP 42, Table 11.19.2-2, 8/04)	0.0022	**lb/ton**
Calculation: (84 ton/hr) * (5136 hrs/yr) * (3 screen(s)) * (ton/2000 lb) * (0.0022 lb/ton) = 1.43 ton/yr	1.43	**ton/yr**
Total PM10 Emissions:		
Emission Factor = 0.00074 lb/ton (0.00074 controlled, AP 42, Table 11.19.2-2, 8/04)	0.0007 4	**lb/ton**
Calculation: (84 ton/hr) * (5136 hrs/yr) * (3 screen(s)) * (ton/2000 lb) * (0.0022 lb/ton) = 0.48 ton/yr	0.48	**ton/yr**
Total PM2.5 Emissions		
Emission Factor = 0.00005 lb/ton (0.000050 controlled, AP 42, Table 11.19.2-2, 8/04)	0.0000 5	**lb/ton**
Calculation: (84 ton/hr) * (5136 hrs/yr) * (3 screen(s)) * (ton/2000 lb) * (0.0022 lb/ton) = 0.03 ton/yr	0.03	**ton/yr**

Haul Roads

Vehicle Miles Traveled (VMT) per Day = 117 VMT/day (Estimate)	117	**VMT/day**
VMT per hour = (116.88 VMT/day) * (day/24 hrs) = 4.87 VMT/hr	4.87	**VMT/hr**
Hours of Operation = 5,136 hrs/yr	5136	**hrs/yr**
	0.5	**Control Efficiency**
PM Emissions: Predictive equation for emission factor for unpaved roads at industrial sites provided per AP 42, Ch. 13.2.2, 11/06.		
Emission Factor = k * (s / 12)^a * (W / 3)^b = 8.73 lb/VMT	8.73	**lb/VMT**
Where: k = constant = 4.9 lbs/VMT (Value for PM30/TSP, AP 42, Table 13.2.2-2, 11/06)	4.9	**lbs/VMT**
s = surface silt content = 4.8 % (Mean value, sand/gravel processing, material storage area, AP 42, Table 13.2.2-1, 11/06)	4.8	**%**
W = mean vehicle weight = 45 tons (1994 average loaded/unloaded or a 40 ton truck)	45	**tons**
a = constant = 0.7 (Value for PM30/TSP, AP 42, Table 13.2.2-2, 11/06)	0.7	
b = constant = 0.45 (Value for PM30/TSP, AP 42, Table 13.2.2-2, 11/06)	0.45	
Calculation: (5136 hrs/yr) * (4.87 VMT/hr) * (8.73 lb/VMT) * (ton/2000 lb) * (0.50 Control Efficiency) = 54.57 tons/yr (Controlled Emissions)	54.57	**tons/yr**
PM10 Emissions: Predictive equation for emission factor for unpaved roads at industrial sites provided per AP 42, Ch. 13.2.2, 11/06.		
Emission Factor = k * (s / 12)^a * (W / 3)^b = 2.22 lb/VMT	2.22	**lb/VMT**
Where: k = constant = 1.5 lbs/VMT (Value for PM10, AP 42, Table 13.2.2-2, 11/06)	1.5	**lbs/VMT**
s = surface silt content = 4.8 % (Mean value, sand/gravel processing, material storage area, AP 42, Table 13.2.2-1, 11/06)	4.8	**%**
W = mean vehicle weight = 45 tons (1994 average loaded/unloaded or a 40 ton truck)	45	**tons**
a = constant = 0.9 (Value for PM10, AP 42, Table 13.2.2-2, 11/06)	0.9	
b = constant = 0.45 (Value for PM10, AP 42, Table 13.2.2-2, 11/06)	0.45	
Calculation: (5136 hrs/yr) * (4.87 VMT/hr) * (2.22 lb/VMT) * (ton/2000 lb) * (0.50 Control Efficiency) = 13.91 tons/yr (Controlled Emissions)	13.91	**tons/yr**
PM2.5 Emissions Predictive equation for emission factor for unpaved roads at industrial sites provided per AP 42, Ch. 13.2.2, 11/06.		
Emission Factor = k * (s / 12)^a * (W / 3)^b = 0.27 lb/VMT	0.27	**lb/VMT**

Where: k = constant = 0.15 lbs/VMT (Value for PM2.5, AP 42, Table 13.2.2-2, 11/06)	0.15	**lbs/VMT**
s = surface silt content = 4.8 % (Mean value, sand/gravel processing, material storage area, AP 42, Table 13.2.2-1, 11/06)	4.8	**%**
W = mean vehicle weight = 45 tons (1994 average loaded/unloaded or a 40 ton truck)	45	**tons**
a = constant = 0.7 (Value for PM2.5, AP 42, Table 13.2.2-2, 11/06)	0.7	
b = constant = 0.45 (Value for PM2.5, AP 42, Table 13.2.2-2, 11/06)	0.45	
Calculation: (5136 hrs/yr) * (4.87 VMT/hr) * (0.27 lb/VMT) * (ton/2000 lb) * (0.50 Control Efficiency) = 1.67 tons/yr (Controlled Emissions)	1.67	**tons/yr**

671 Brake horse Power Diesel Generator

Note: Emissions are based on the power output of the engine (671 hp).		
Operational Capacity of Engine = 671 hp	671	**hp**
Hours of Operation = 5,136 hours	5136	**hours**
PM Emissions:		
PM Emissions = 3.79 ton/yr ton/yr	3.79	**ton/yr**
PM-10 Emissions:		
Emission Factor = 0.0022 lbs/hp-hr	2.20E-03	**lbs/hp-hr**
Calculation: (0) * (0) * (0.0022 lbs/hp-hr) * (ton/2000 lb) = 3.79 ton/yr ton/yr	3.79	**ton/yr**
PM2.5 Emissions		
Emission Factor = 0.0022 lbs/hp-hr	2.20E-03	**lbs/hp-hr**
Calculation: (0.0022 lbs/hp-hr) * (671 hp) * (5,136 hours) * (ton/2000 lb) = 3.79 ton/yr ton/yr	3.79	**ton/yr**
NOx Emissions:		
Emission Factor = 0.024 lbs/hp-hr	2.40E-02	**lbs/hp-hr**
Calculation: (0.0240 lbs/hp-hr) * (671 hp) * (5,136 hours) * (ton/2000 lb) = 41.36 ton/yr ton/yr	41.36	**ton/yr**
CO Emissions:		
Emission Factor = 0.00449 lbs/hp-hr	4.49E-03	**lbs/hp-hr**
Calculation: (0.00449 lbs/hp-hr) * (671 hp) * (5,136 hours) * (ton/2000 lb) = 7.74 ton/yr ton/yr	7.74	**ton/yr**
VOC Emissions:		
Emission Factor = 0.00378 lbs/hp-hr	3.78E-03	**lbs/hp-hr**
Calculation: (0.00378 lbs/hp-hr) * (671 hp) * (5,136 hours) * (ton/2000 lb) = 6.51 ton/yr ton/yr	6.51	**ton/yr**
SOx Emissions:		
Emission Factor = 0.00205 lbs/hp-hr	2.05E-03	**lbs/hp-hr**
Calculation: (0.00205 lbs/hp-hr) * (671 hp) * (5,136 hours) * (ton/2000 lb) = 3.53 ton/yr ton/yr	3.53	**ton/yr**

587 Brake horse Power Diesel Generator

Note: Emissions are based on the power output of the engine (587 hp).		
Operational Capacity of Engine = 587 hp	587	**hp**
Hours of Operation = 5,136 hours	5136	**hours**
PM Emissions:		
PM Emissions = 0.66 ton/yr ton/yr	0.66	**ton/yr**

PM-10 Emissions:

Emission Factor = 0.000441 lbs/hp-hr	4.41E-04	**lbs/hp-hr**
Calculation: (0) * (0) * (0.000441 lbs/hp-hr) * (ton/2000 lb) = 0.66 ton/yr ton/yr	0.66	**ton/yr**

PM2.5 Emissions

Emission Factor = 0.000441 lbs/hp-hr	4.41E-04	**lbs/hp-hr**
Calculation: (0.0022 lbs/hp-hr) * (671 hp) * (5,136 hours) * (ton/2000 lb) = 0.66 ton/yr ton/yr	0.66	**ton/yr**

NOx Emissions:

Emission Factor = 0.0124 lbs/hp-hr	1.24E-02	**lbs/hp-hr**
Calculation: (0.0240 lbs/hp-hr) * (671 hp) * (5,136 hours) * (ton/2000 lb) = 18.69 ton/yr ton/yr	18.69	**ton/yr**

CO Emissions:

Emission Factor = 0.00668 lbs/hp-hr	6.68E-03	**lbs/hp-hr**
Calculation: (0.00449 lbs/hp-hr) * (671 hp) * (5,136 hours) * (ton/2000 lb) = 10.07 ton/yr ton/yr	10.07	**ton/yr**

VOC Emissions:

Emission Factor = 0.00668 lbs/hp-hr	6.68E-03	**lbs/hp-hr**
Calculation: (0.00378 lbs/hp-hr) * (671 hp) * (5,136 hours) * (ton/2000 lb) = 10.07 ton/yr ton/yr	10.07	**ton/yr**

SOx Emissions:

Emission Factor = 0.00205 lbs/hp-hr	2.05E-03	**lbs/hp-hr**
Calculation: (0.00205 lbs/hp-hr) * (671 hp) * (5,136 hours) * (ton/2000 lb) = 3.09 ton/yr ton/yr	3.09	**ton/yr**

134 Brake horse Power Diesel Generator

Note: Emissions are based on the power output of the engine (134 hp).

Operational Capacity of Engine = 134 hp	134	**hp**
Hours of Operation = 5,136 hours	5136	**hours**

PM Emissions:

PM Emissions = 0.01 ton/yr (Assume all PM < 1.0 um)	0.01	**ton/yr**

PM-10 Emissions:

Emission Factor = 0.0000329 lbs/hp-hr	3.29E-05	**lbs/hp-hr**
Calculation: (0.00003 lbs/hp-hr) * (0 hp) * (5,136 hours) * (ton/2000 lb) = 0.01 ton/yr	0.01	**ton/yr**

PM2.5 Emissions

Emission Factor = 0.0000329 lbs/hp-hr	3.29E-05	**lbs/hp-hr**
Calculation: (0.00003 lbs/hp-hr) * (671 hp) * (5,136 hours) * (ton/2000 lb) = 0.01 ton/yr (Assume all PM < 1.0 um)	0.01	**ton/yr**

NOx Emissions:

Emission Factor = 0.000658 lbs/hp-hr	6.58E-04	**lbs/hp-hr**
Calculation: (0.00066 lbs/hp-hr) * (134 hp) * (5,136 hours) * (ton/2000 lb) = 0.23 ton/yr	0.23	**ton/yr**

CO Emissions:

Emission Factor = 0.00822 lbs/hp-hr	8.22E-03	**lbs/hp-hr**
Calculation: (0.00822 lbs/hp-hr) * (671 hp) * (5,136 hours) * (ton/2000 lb) = 2.83 ton/yr	2.83	**ton/yr**
VOC Emissions:		
Emission Factor = 0.000312 lbs/hp-hr	3.12E-04	**lbs/hp-hr**
Calculation: (0.00205 lbs/hp-hr) * (134 hp) * (5,136 hours) * (ton/2000 lb) = 0.11 ton/yr	0.11	**ton/yr**
SOx Emissions:		
Emission Factor = 0.00205 lbs/hp-hr	2.05E-03	**lbs/hp-hr**
Calculation: (0.00205 lbs/hp-hr) * (134 hp) * (5,136 hours) * (ton/2000 lb) = 0.71 ton/yr	0.71	**ton/yr**

40 Brake horse Power Diesel Generator

Note: Emissions are based on the power output of the engine (40 hp).		
Operational Capacity of Engine = 40 hp	40	**hp**
Hours of Operation = 5,136 hours	5136	**hours**
PM Emissions:		
PM Emissions = 0.18 ton/yr ton/yr	0.18	**ton/yr**
PM-10 Emissions:		
Emission Factor = 0.00176 lbs/hp-hr	1.76E-03	**lbs/hp-hr**
Calculation: (0) * (0) * (0.00176 lbs/hp-hr) * (ton/2000 lb) = 0.18 ton/yr ton/yr	0.18	**ton/yr**
PM2.5 Emissions		
Emission Factor = 0.00176 lbs/hp-hr	1.76E-03	**lbs/hp-hr**
Calculation: (0.0022 lbs/hp-hr) * (671 hp) * (5,136 hours) * (ton/2000 lb) = 0.18 ton/yr ton/yr	0.18	**ton/yr**
NOx Emissions:		
Emission Factor = 0.0209 lbs/hp-hr	2.09E-02	**lbs/hp-hr**
Calculation: (0.0240 lbs/hp-hr) * (671 hp) * (5,136 hours) * (ton/2000 lb) = 2.15 ton/yr ton/yr	2.15	**ton/yr**
CO Emissions:		
Emission Factor = 0.00668 lbs/hp-hr	6.68E-03	**lbs/hp-hr**
Calculation: (0.00449 lbs/hp-hr) * (671 hp) * (5,136 hours) * (ton/2000 lb) = 0.69 ton/yr ton/yr	0.69	**ton/yr**
VOC Emissions:		
Emission Factor = 0.00247 lbs/hp-hr	2.47E-03	**lbs/hp-hr**
Calculation: (0.00378 lbs/hp-hr) * (671 hp) * (5,136 hours) * (ton/2000 lb) = 0.25 ton/yr ton/yr	0.25	**ton/yr**
SOx Emissions:		
Emission Factor = 0.00205 lbs/hp-hr	2.05E-03	**lbs/hp-hr**
Calculation: (0.00205 lbs/hp-hr) * (671 hp) * (5,136 hours) * (ton/2000 lb) = 0.21 ton/yr ton/yr	0.21	**ton/yr**

V. Existing Air Quality

This permit is for a metallic and nonmetallic mineral processing plant which will be located at Section 21, Township 6 North, Range 16 West, in Granite County, Montana, and in those areas for which this facility is permitted to operate, have been designated unclassified/attainment with all ambient air quality standards, and where there are no major air pollution sources in the surrounding area. The location of the mine has been designated as unclassified/attainment with all ambient air quality standards.

The limitations and conditions in MAQP #5291-01 ensure the facility would not cause or contribute to a violation of the National Ambient Air Quality Standards (NAAQS).

VI. Air Quality Impacts

This permit contains conditions and limitations that would protect air quality for the site and surrounding area. Furthermore, this facility is a seasonal source that would operate on an intermittent and temporary basis, so any effects to air quality will be minor and of limited duration.

VII. Ambient Air Impact Analysis

DEQ determined, based on the information provided by Potentate, and the attached Environmental Assessment, that 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.

IX. Environmental Assessment

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

FINAL ENVIRONMENTAL ASSESSMENT

Potentate Mining, LLC. – Yellow Dog Mine

8/22/2024

Air Quality Bureau

Air, Energy, and Mining Division

Table of Contents

Project Overview

COMPANY NAME:	Potentate Mining, LLC.
EA DATE:	July 1, 2024
SITE NAME:	Yellow Dog Mine
MAQP#:	5291-01
Application Received Date:	May 20, 2024
Additional Information Received Date:	June 12, 2024

Location

Township Section 21, Township 6 North, Range 16 West
County: Granite
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

Potentate plans to operate two (2) diesel fired generator engines to provide power for existing mining equipment located at the Yellow Dog Mine.

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. The purpose and need for the applicant is to install and operate two (2) diesel fired generator engines to provide power to existing mining equipment. 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 ACTIVITIES PROPOSED IN APPLICATION

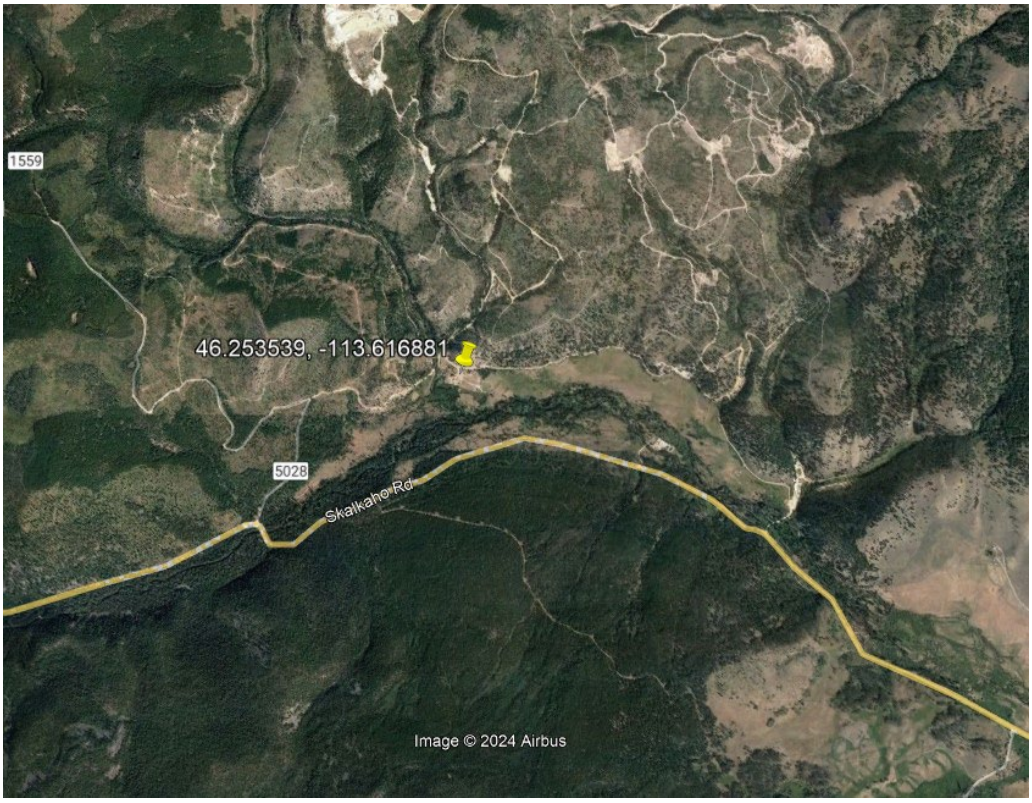
Table 1. Summary of Proposed Activities in Application	
General Overview	Install and operate two (2) diesel fired generator engines for the purpose of providing power to mining equipment.
Duration and Timing	Construction: The generator sets would be placed on the mine site. Operation: These units each may operate up to 5,136 hours per calendar year for the life of the mine. Demobilization would be limited to removing electrical connections and engines.
Estimated Disturbance	There would be minimal disturbance to existing land as the engines would occupy an active mining site.
Equipment	Two (2) diesel fired generator engines.
Location	Location: Section 21, Township 6 North, Range 16 West. See Figure 1.
Personnel on-site	Construction: Installation limited to engine setup and minor electric connections. Operation: No additional personnel are expected with the proposed project.
Location and Analysis Area	The site is currently used for metallic and nonmetallic mineral mining and processing.
Air Quality	The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to air quality.
Water Quality	This project would not affect water quality because water is not part of the daily operation of the engines.
Erosion Control and Sediment Transport	This project is on property currently in use for mining operations, and it would not contribute to additional erosion or sediment transport. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to erosion control and sediment transport.
Solid Waste	This project would have no effect on solid waste in the area. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to solid waste.

Cultural resources	The property is already in use for mineral mining and processing, and there would be no effects on cultural resources. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to cultural resources.
Aesthetics	The property is already in use for mineral mining and processing, and there would be minor effects on aesthetics with the installation of two (2) diesel fired engines. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to aesthetics.
Hazardous Substances	This project does not contribute any hazardous substances to the facility. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to hazardous substances.
Weed Control	The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to weed control.
Reclamation Plans	The property is already in use as a mine and would require minor reclamation at the end of the project's lifespan.

Cumulative Impact Considerations	
Past Actions	This is an established mine site.
Present Actions	Install and operate two additional (2) diesel fired generator engines.
Related Future Actions	No future actions are foreseen at this site.

See Figure 1 below for the project location on the Yellow Dog Mine Site.

Figure 1. Yellow Dog Mine Site



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 current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site.

Direct Impacts:

No impacts to geology, soil quality, stability or moisture would occur with the proposed permit action. The generator sets would sit on develop ground in an already prepared area or would be installed on a portable engine stand.

Secondary Impacts:

No secondary impacts to topography, geology, stability, and moisture are anticipated with the proposed action.

Cumulative Impacts:

There are no cumulative impacts to topography, geology, stability, and moisture anticipated from this project.

2. Water Quality, Quantity, and Distribution

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site.

Direct Impacts:

There are no direct impacts expected to water quality, quantity, and distribution from this project.

Secondary Impacts:

There are no secondary impacts expected to water quality, quantity, and distribution from this project.

Cumulative Impacts:

There are no cumulative impacts expected to water quality, quantity, and distribution from this project.

3. Air Quality

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site. The area where the proposed project is located is classified as attainment/unclassifiable for all pollutants by DEQ. The proposed engines are expected to be a seasonal source of pollution, starting in early spring operating into late fall/early winter, depending on temperatures. Potentate has also taken legally enforceable hourly limits for all generator sets on the mine site to limit the amount of pollution during the operating season. When compared to MAQP #5291-00, the potential to emit is less than without the hourly limits contained in MAQP #5291-01, Section II.A.5.

An Emissions Inventory is located in Section IV of the MAQP Analysis.

Direct Impacts:

DEQ determined, based on the amount of allowable emissions, that the impacts to air quality

from this permitting action will be minor.

DEQ believes it will not cause or contribute to a violation of any ambient air quality standard based on the amount of potential emissions and air dispersion characteristics of the area.

Secondary Impacts:
Negligible impacts to air quality could be expected with the proposed action in the event of equipment malfunction.

Cumulative Impacts:
Cumulative impacts to air quality would be negligible based on the hours of operation, Best Available Control Technology for this project, and air dispersion characteristics of the area.

4. Vegetation Cover, Quantity, and Quality

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site.

Direct Impacts:
No direct impacts to vegetation cover, quantity and quality are expected with the proposed project because the new engines would be set in place in an already developed area on a gravel pad or an engine stand.

Secondary Impacts:
No secondary impacts to vegetation are expected as a result of this project.

Cumulative Impacts:
Cumulative impacts to vegetation are minor due to the size and scope of the project.

5. Terrestrial, Avian, and Aquatic Life and Habitats

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site.

Direct Impacts:
No impacts to terrestrial, avian, or aquatic life are expected with the proposed project because the new engines would be set in place in an already developed area on a gravel pad or an engine stand.

Secondary Impacts:
No secondary impacts to terrestrial, avian and aquatic life and habitats would be expected.

Cumulative Impacts:
There are no cumulative impacts to terrestrial, avian and aquatic life and habitats expected from this project.

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

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site.

A survey of endangered or fragile species was conducted for the area where the proposed project would occur. Eleven (11) species of concern was identified;

Bird – Brewer's Sparrow, Clark's Nutcracker, Pileated Woodpecker

Fish – Westslope Cutthroat Trout, Bull Trout

Mammals – Wolverine, Long-eared Myotic, Fisher

Vascular Plants – Candystick, Whitebark Pine, Keeled Bladderpod

Additionally, the proposed project is not in core, general or connectivity sage grouse habitat, as designated by the Sage Grouse Habitat Conservation Program (Program) at: http://sagegrouse.mt.gov. Impacts to sage grouse would not be expected.

Direct Impacts:
Negligible impacts to unique, endangered, fragile, or limited environmental resources could be caused by the proposed action. The new engines would be installed in predetermined locations on developed pads or on engine stands. It is expected that the local wildlife would avoid most human activities in the immediate location.

The Sage Grouse Habitat Conservation Program has stated that the proposed project would not occur in core, general or connectivity sage grouse habitat. Therefore, impacts to sage grouse would not occur.

Secondary Impacts:
No secondary impacts to unique, endangered, fragile, or limited environmental resources that could be stimulated or induced by the direct impacts analyzed above would be expected.

Cumulative Impacts:
No cumulative impacts to unique, endangered, fragile, or limited environmental resources, or sage grouse would be expected.

7. Historical and Archaeological Sites

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site.

The State Historic Preservation Office was consulted on the proposed project and stated that there have been no previously recorded sites within the designated search locale. 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.

Direct Impacts:
No direct impacts to historical and archaeological sites are expected from this project.

Secondary Impacts:
No secondary impacts to historical and archaeological sites are anticipated.

Cumulative Impacts:
No cumulative impacts to historical and archeological sites would be expected.

8. Aesthetics

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site.

Direct Impacts:
No direct impacts to aesthetics are expected from this project because the site is already an active metallic and nonmetallic mining operation.

Secondary Impacts:
No secondary impacts to aesthetics are anticipated.

Cumulative Impacts:
No cumulative impacts to aesthetics would be expected from this project.

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

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site. The engines would utilize diesel fuel that is supplied from refueling trucks on the mine site.

Direct Impacts:
No direct impacts to environmental resources of land, water, air, or energy are expected with the proposed permitting action.

Secondary Impacts:
No secondary impacts to demands on environmental resources of land, water, air, or energy would be anticipated.

Cumulative Impacts:
Negligible cumulative impacts to demands on environmental resources of land, water, air, or energy would be expected.

10. Impacts on Other Environmental Resources

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site.

Direct Impacts:
No direct impacts to other environmental resources are anticipated as a result of the proposed project.

Secondary Impacts:
No secondary impacts to other environmental resources are anticipated as a result of the proposed project.

Cumulative Impacts:
No cumulative impacts to other environmental resources would be expected.

11. Human Health and Safety

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site. The proposed engines being installed must comply with the permit conditions included in MAQP #5291-01, which are protective of human health and safety. There are no residents in the immediate area.

Direct Impacts:
Impacts to human health and safety are anticipated to be short-term and minor as a result of this project. The proposed location of the mine is classified as unclassified/attainment for all National Ambient Air Quality Standards for criteria pollutants. DEQ believes the proposed permit action will not cause or contribute to a violation of any ambient air quality standards.

Secondary Impacts:
No secondary impacts to Human Health and Safety would be expected.

Cumulative Impacts:
Negligible cumulative impacts to Human Health and Safety are expected from this project.

12. Industrial, Commercial, and Agricultural Activities and Production

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site.

Direct Impacts:
No direct impacts to industrial, commercial, or agricultural activities or production are anticipated as a result of the proposed project.

Secondary Impacts:
No secondary impacts to industrial, commercial, and agricultural activities and production would be expected.

Cumulative Impacts:
No cumulative impacts to industrial, commercial, and agricultural activities and production are expected as a result of this project.

13. Quantity and Distribution of Employment

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site.

Direct Impacts:
No direct impacts to quantity and distribution of employment are anticipated as a result of the proposed project.

Secondary Impacts:
No secondary impacts to quantity and distribution of employment are anticipated as a result this project.

Cumulative Impacts:
No cumulative impacts to the quantity and distribution of employment would be expected.

14. Local and State Tax Base and Tax Revenues

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site.

Direct Impacts:
No direct impacts to the local and state tax base or revenues are anticipated as a result of this project.

Secondary Impacts:
No secondary impacts to local and state tax base and tax revenues would be expected.

Cumulative Impacts:
No cumulative impacts to local and state tax base and tax revenues would be expected.

15. Demand for Government Services

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site. The engines would be required to be inspected by state agencies for compliance with emission limitation as well as required source testing oversight.

Direct Impacts:
Negligible direct impacts to demand for government services would be expected as a result of source testing, and site inspection requirements.

Secondary Impacts:
No secondary impacts to government services are anticipated as a result of the proposed project.

Cumulative Impacts:
No cumulative impacts to government services are anticipated as a result of this project.

16. Locally Adopted Environmental Plans and Goals

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site. The proposed operation would occur within Granite County. DEQ is not aware of any additional policies and plans.

Direct Impacts:

DEQ is not aware of any other locally adopted environmental plans or goals that would be impacted by this proposed project or in the project area. Impacts from or to locally adopted environmental plans and goals would not be expected as a result of this project.

Secondary Impacts:

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

Cumulative Impacts:

No cumulative impacts to locally adopted environmental plans and goals would be expected.

17. Access to and Quality of Recreational and Wilderness Activities

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site.

The mine site has one road along the property boundary, Skalkaho Rd., with a connecting road the travels through Forest Service property. Additional roads are located to the north that are no connected to Skalkaho Rd. via the mine site.

Direct Impacts:

No primary impacts to access and quality of recreational and wilderness activities are anticipated as a result of the proposed action. The mine site has US Forest Service property to the south, private property the west, north, and east.

Secondary Impacts:

No secondary impacts to wilderness or recreational areas are anticipated.

Cumulative Impacts:

No cumulative impacts to access to, and quality of, recreational and wilderness activities would be expected.

18. Density and Distribution of Population and Housing

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site.

Direct Impacts:

It is unlikely this project would add to the population significantly. No direct impacts are anticipated.

Secondary Impacts:
No secondary impacts to density and distribution of population and housing are anticipated as a result of the proposed project.

Cumulative Impacts:
No cumulative impacts to density and distribution of population and housing are anticipated as a result of this project.

19. Social Structures and Mores

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site. DEQ is not aware of any social structures and mores that would be affected by the proposed activity. Based on the information provided by the applicant, it is not anticipated that this project would disrupt traditional lifestyles or communities.

Direct Impacts:
No direct impacts to social structures and mores are anticipated as a result of the proposed project.

Secondary Impacts:
No secondary impacts to social structures and mores are anticipated as a result of the proposed project.

Cumulative Impacts:
No cumulative impacts to social structures and mores would be expected.

20. Cultural Uniqueness and Diversity

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site. Based on the information provided by the Applicant, DEQ is not aware of any cultural uniqueness and diversity of the area that would be affected by the proposed activity.

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 project.

Cumulative Impacts:
No cumulative impacts to cultural uniqueness and diversity would be expected.

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.

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)

The proposed project would take place on private land. DEQ has determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements under the Montana Clean Air Act. Therefore, DEQ's approval of MAQP #5291-01 would not have private property-taking or damaging implications.

22. Other Appropriate Social and Economic Circumstances

Due to the nature and scope of the proposed project activities, no further direct or secondary impacts would be anticipated from this project.

23. Greenhouse Gas Assessment

The current permit action is for the installation of two (2) diesel fired generator sets at a fully developed mine site. The analysis area for this resource is limited to the activities regulated by the issuance of MAQP #5291-01 which is the operation of two (2) diesel fired generator engines.

The GHG emissions were calculated from the manufacturer's technical data sheet based on the hourly consumption of diesel fuel in gallons and 5,136 hours per year (hr/yr) 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 Greenhouse Gases (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.

Montana recently used the EPA State Inventory Tool (SIT) to develop a greenhouse gas inventory. 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 CO_2, CH_4, and N_2O 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. The SIT data is currently updated through the year 2021, as it takes several years to validate and make new data available within revised modules.

The combustion of diesel fuel at the site would release GHGs primarily being CO_2, N_2O, and much smaller concentrations of incomplete combustion of fuel components including CH_4 and other volatile organic compounds (VOCs). Emissions associated with the generator operations were estimated using caterpillar performance data.

Additionally, there are no compressed gases, fire suppressants or refrigerants/air conditioning associated with this project which would have been considered Scope 1 emissions.

Direct Impacts

Operation of diesel fired generator engines for the proposed project would produce exhaust fumes containing GHGs. DEQ has calculated GHG emissions using the EPA Simplified GHG Calculator version May 2023, for the purpose of totaling GHG emissions. This tool totals CO_2, N_2O, and CH_4 and reports the total as CO_2 equivalent (CO_2e) in metric tons CO_2e.

If there are also fluorinated compounds associated with the project those may also be input into the GHG calculator. The calculations in this tool are widely accepted to represent reliable calculation approaches for developing a GHG inventory.

Application information indicates that at max load, diesel fuel consumed on an hourly basis for both engines, operating for 5,136 hours would be approximately 592,694 gallons.

Using the EPA's simplified GHG Emissions Calculator for sources, a maximum of 6,051.7 metric tons of CO_2e would be produced per year of operation.

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).

Per EPA's website "Climate Change Indicators", the lifetime of carbon dioxide cannot be represented with a single value because the gas is not destroyed over time. The gas instead moves between air, ocean, and land mediums with atmospheric carbon dioxide remaining in the atmosphere for thousands of years, due in part to the very slow process by which carbon is transferred to ocean sediments. Methane remains in the atmosphere for approximately 12 years. Nitrous oxide has the potential to remain in the atmosphere for about 109 years.

The impacts of climate change throughout the Northern Great Plains of Montana include changes in flooding and drought, rising temperatures, and the spread of invasive species (BLM 2021).

Cumulative Impacts

DEQ has determined that the use of the default data provides a reasonable representation of the GHG inventory for all of the state sectors, and an estimated annual GHG inventory by year. At present, Montana accounts for 47.77 million metric tons of CO_2e based on the EPA State Inventory Tool for the year 2021. This project may contribute up to 0.0060517 million metric tons per year of CO_2e. Based on the MAQP analysis and the analysis as mentioned above, the estimated emission of 0.0060517 million metric tons of CO_2e of the proposed permitting action is a negligible impact to air quality in Granite County. The total increase from this project would contribute 0.0135% to Montana's annual CO_2e emissions.

GHG emissions that would be emitted as a result of the proposed activities would add to GHG emissions from other sources.

PROPOSED ACTION ALTERNATIVES

No Action Alternative: In addition to the proposed action, DEQ must also considered a "no action" alternative. The "no action" alternative would deny the approval of MAQP #5291-01. 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.

If the Applicant demonstrates compliance with all applicable rules and regulations required for approval, the "no action" alternative would not be appropriate.
Other Reasonable Alternative(s):

No Action – the no action alternative would have resulted the operational capacity of the mine to be severely diminished or stopped completely. The two (2) diesel fired generator engines are used to provide electrical power to the mining equipment on site.

Alternatives considered but dismissed from further detailed review:

Alternative Energy Source– the use of a fuel source that does not have any CO_2e properties does not exist for this type of emitting unit. Natural gas, propane, or gasoline generator engines are cost prohibitive as the two engines proposed for the project are already owned by Potentate.

The use of solar power or wind power is also cost prohibitive based on the amount of power needed and available space for installation of solar panels and/or wind turbines.

Reduction in the Project Operation – the alternative of reduction of the amount of time the engines could run was dismissed. This would not meet the purpose and need for the operation of the Proposed Project. The mine cannot operate when ambient temperatures are low enough to cause water to freeze.

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 #5291-01 Application, EPA State Inventory Tool, and the EPA GHG Calculator Tool, State Historical Preservation Office, and NRIS

PUBLIC INVOLVEMENT

The public comment period for this permit action was from July 1, 2024 through July 31, 2024. Public comments were received for this permitting action and can be referenced in Section I.E. of the MAQP Analysis.

OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION

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 Granite 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 Applicant is proposing to install two (2) diesel fired generator sets at a fully developed mine site as explained in MAQP #5291-01 to generate electricity to power mine equipment. The site would be permitted to operate the generators for 5,136 hours per year.

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 no impacts to view-shed aesthetics as the generators would be installed and operated on an active mine site.

Demands on the environmental resources of land, water, air, or energy would not be significant. When the generators are no longer needed, they would be removed from the site.

Impacts to human health and safety would not be significant due to the conditions listed in MAQP# 5291-01.

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.

REFERENCES

- 5291-01_2024_05_20_APP – Application received from Elkhorn Engineering, LLC., on behalf of Potentate Mining, LLC., on May, 2024.

- EPA GHG Calculator Tool https://www.epa.gov/statelocalenergy/state-inventory-and-projection-tool

- EPA State Inventory Tool, https://www.epa.gov/statelocalenergy/state-inventory-and-projection-tool

- EPA – Climate Change Indicators, https://www.epa.gov/climate-indicators/greenhouse-gases

- EPA. Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances. November 2023. https://www.epa.gov/system/files/documents/2023-12/epa_scghg_2023_report_final.pdf. Accessed on 5/22/24.

- 2021 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends, https://www.blm.gov/

- 5291-01_2024_06_11_SHPO – State Historical Preservation Office Investigation

- 5291-01_NRIS – Natural Resource Information System Endangered Species Investigation, https://mtnhp.org