DEQ
Montana Department
of Environmental Quality

January 18, 2017

Chuck Forgey
Glacier Lake Sand and Gravel, LLC.
P.O. Box 250
Big Arm, MT 59910

Dear Mr. Forgey:

Montana Air Quality Permit #3342-04 is deemed final as of January 18, 2017, by the Department of Environmental Quality (Department). This permit is for a Portable Crushing and Screening Facility. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

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

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

JM:JP
Enclosure

Montana Department of Environmental Quality
Air, Energy, and Mining Division

Montana Air Quality Permit #3342-04

Glacier Lake Sand and Gravel, LLC.
P.O. Box 250
Big Arm, MT 59910

January 18, 2017

MONTANA AIR QUALITY PERMIT

Issued to: Glacier Lake Sand and Gravel, LLC
P.O. Box 250
Big Arm, MT 59910

MAQP: #3342-04
Administrative Amendment (AA)
Request Received: 12/28/2016
Department Decision on AA: 12/30/2016
Permit Final: 01/18/2017
AFS #: 777-3342

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Glacier Lake Sand and Gravel, LLC (Glacier Lake), 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

Glacier Lake operates a portable crushing/screening facility at various locations throughout Montana. The initial "home pit" location is located at Township 10 North, Range 2 West, Section 22 in Lake County, Montana. However, MAQP #3342-04 applies while operating at any location in Montana, except those areas having a Montana Department of Environmental Quality (Department)-approved permitting program, areas considered tribal lands, or areas in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) nonattainment areas. *A Missoula County air quality permit will be required for locations within Missoula County, Montana.* An addendum will be required for locations in or within 10 km of certain PM_{10} nonattainment areas.

Addendum #3 will apply to the Glacier Lake facility while operating at locations in or within 10 km of certain PM_{10} nonattainment areas during the summer months (April 1 – September 30) and sites approved by the Department during the winter months (October 1 – March 31).

B. Current Permit Action

During a Department of Environmental Quality (Department) review, staff discovered that Montana Air Quality Permit (MAQP) #3342-03 was missing a necessary permit condition and corresponding permit analysis language pertaining to production limits. Because Glacier Lake accepted limits in its MAQP to stay below the Title V permit threshold, the Department established such limits in the MAQP. With such limits, Glacier Lake is required to annually certify that its actual emissions are less than those that would require the source to obtain an air quality Title V operating permit. This annual certification is required to be submitted with the annual emission inventory and production and equipment information, and is required to be submitted on or before February 25th of each year. The annual certification is required by ARM 17.8.1204(3)(b), but was not included in MAQP #3342-03. MAQP #3342-04 specifically clarifies the certification obligation and also updates language in the permit analysis pertinent to this issue.

SECTION II: Conditions and Limitations

A. Emission Limitations

1. All visible emissions from any Standards of Performance for New Stationary Source (NSPS)-affected crusher shall not exhibit an opacity in excess of the following averaged over 6 consecutive minutes (ARM 17.8.340 and 40 CFR Part 60, Subpart OOO)

   - For crushers that commence construction, modification, or reconstruction on or after April 22, 2008: 12% opacity

   - For crushers that commence construction, modification, or reconstruction after August 31, 1983, but before April 22, 2008: 15% opacity

2. All visible emissions from any other NSPS-affected equipment, other than a crusher (such as screens or conveyors), shall not exhibit opacity in excess of the following averaged over 6 consecutive minutes (ARM 17.8.340 and 40 CFR, Subpart OOO).

   - For equipment that commences construction, modification, or reconstruction on or after April 22, 2008: 7% opacity

   - For equipment that commences construction, modification, or reconstruction after August 31, 1983, but before April 22, 2008: 10% opacity

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 17.8.749).

5. Glacier Lake shall not cause or authorize the use of any street, road or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).

6. Glacier Lake shall treat all unpaved portions of the haul roads, access roads, parking lots, or the general plant area with water and/or chemical dust suppressant, as necessary, to maintain compliance with the reasonable precautions limitation in Section II.A.5 (ARM 17.8.749).

7. Glacier Lake shall not operate more than four (4) crushers at any given time and the maximum combined rated design capacity of the crushers shall not exceed 1,200 tons per hour (TPH) (ARM 17.8.749).

8. Glacier Lake shall not operate more than four (4) screens at any given time and the maximum combined rated design capacity of the screens shall not exceed 1,200 TPH (ARM 17.8.749).

9. Glacier Lake shall not operate more than one (1) wash plant at any given time and the maximum combined rated design capacity of the wash plant shall not exceed 200 TPH (ARM 17.8.749).

10. Glacier Lake shall not operate more than one (1) pugmill at any given time and the maximum combined rated design capacity of the pugmill shall not exceed 500 TPH (ARM 17.8.749).

11. Glacier Lake shall not operate or have on-site more than three (3) diesel engines/generators at any given time and the maximum combined rated design capacity of the diesel engines/generators shall not exceed 1,950 horsepower (hp) (ARM 17.8.749).

12. Operation of the three diesel engines/generators shall not exceed 2,630 hours during any rolling 12-month time period (ARM 17.8.1204).

13. If the permitted equipment is used in conjunction with any other equipment owned or operated by Glacier Lake, at the same site, production shall be limited to correspond with an emission level that does not exceed 250 tons during any rolling 12-month period. Any calculations used to establish production levels shall be approved by the Department (ARM 17.8.749).

14. Glacier Lake shall comply with all applicable standards and limitations, and the reporting, recordkeeping, testing, and notification requirements contained in 40 CFR 60, Subpart OOO, *Standards of Performance for Nonmetallic Mineral Processing Plants* (ARM 17.8.340 and 40 CFR 60, Subpart OOO).

15. Glacier Lake 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 Combustion Engines* and 40 CFR 63, Subpart ZZZZ, *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, for any applicable diesel engine (ARM 17.8.340; 40 CFR 60, Subpart IIII; ARM 17.8.342 and 40 CFR 63, Subpart ZZZZ).

B. Testing Requirements

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

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

C. Operational Reporting Requirements

1. If this crushing/screening plant is moved to another location, an Intent to Transfer form must be sent to the Department and a Public Notice Form for Change of Location must be published in a newspaper of general circulation in the area to which the transfer is to be made, at least 15 days prior to the move. The proof of publication (affidavit) of the Public Notice Form for Change of Location must be submitted to the Department prior to the move. These forms are available from the Department (ARM 17.8.749 and ARM 17.8.765).

2. Glacier Lake shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but not be limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

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

3. Glacier Lake shall notify the Department of any construction or improvement project conducted, pursuant to ARM 17.8.745, that would include ***the addition of a new emissions unit,*** change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation. The notice must be submitted to the Department, in writing, 10 days prior to 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).

4. Glacier Lake shall document, by month, the hours of operation of the diesel engines/generators. By the 25th day of each month, Glacier Lake shall calculate the hours of operation of the diesel engines/generators for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.12. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

5. Glacial Lake shall annually certify that its emissions are less than those that would require the source to obtain an air quality operating permit as required by ARM 17.8.1204(3)(b). The annual certification shall comply with the certification requirements of ARM 12.8.1207. The annual certification shall be submitted along with the annual emission inventory information (ARM 17.8.749 and ARM 17.8.1204).

SECTION III: General Conditions

A. Inspection - Glacier Lake shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (Continuous Emission Monitoring Systems (CEMS)/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 all the terms, conditions, and matters stated herein shall be deemed accepted if Glacier Lake fails to appeal as indicated below.

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

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

E. Appeals - Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.

F. Permit Inspection - As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by Department personnel at the location of the permitted source.

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

I. The Department may modify the conditions of this permit based on local conditions of any future site. These factors may include, but are not limited to, local terrain, meteorological conditions, proximity to residences, etc.

J. Glacier Lake shall comply with the conditions contained in this permit while operating in any location in Montana, except within those areas that have a Department-approved permitting program or areas considered tribal lands.

Montana Air Quality Permit (MAQP) Analysis
Glacier Lake Sand and Gravel, LLC
MAQP #3342-04

I. Introduction/Process Description

A. Permitted Equipment

Glacier Lake Sand and Gravel, LLC (Glacier Lake) owns and operates a portable crushing/screening facility consisting of four crushers (up to 1,200 tons per hour (TPH)), four screens (up to 1,200 TPH), one wash plant (up to 200 TPH), one pugmill (up to 500 TPH), three diesel-fired generator engines (up to 1,950 horsepower (hp)), and associated equipment.

B. Source Description

Glacier Lake proposes to use this crushing/screening plant and associated equipment to crush sand and gravel materials for use in various construction operations. For a typical operational setup, materials are loaded into the crushing/screening plant by a hopper, transferred by conveyor, and passed through the crushers. Materials are crushed by the crusher and sent to the three screens. The pugmill is used to mix small diameter materials, including sand, with water to ensure optimum moisture and to minimize product segregation. Materials are screened, separated, and sent to stockpile for sale and use in construction operations.

C. Permit History

On June 10, 2004, Jim Phillips Contracting, Inc. (Phillips) submitted a complete permit application for the operation of a portable crushing/screening facility consisting of a portable 2004 Trio Jaw Crusher (up to 400 TPH), a Telesmith Cone Crusher (up to 400 TPH), a 1988 Spomatic Dozer Feeder (up to 400 TPH), a 2004 Trio Vibrating Grizzly Feeder (up to 400 TPH), a 1985 EL-Jay 3-deck screen (up to 400 TPH), a diesel generator (up to 300 Kilowatt (kW)), and associated equipment. The proposed original location for the facility is the SE ¼ of Section 20, Township 9 North, Range 17 West, in Granite County, Montana. Montana Air Quality Permit (MAQP) #3342-00 applied to the source while operating at any location in Montana, except within those areas having a Department of Environmental Quality (Department) approved permitting program, those areas considered tribal lands, or those areas in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) nonattainment areas. *A Missoula County air quality permit would be required for locations within Missoula County, Montana.* An addendum to this air quality permit was also required for locations in or within 10 km of certain PM_{10} nonattainment areas. **MAQP #3342-00** was issued final on August 5, 2004.

On April 24, 2006, the Department received a request from Phillips for a modification to MAQP #3342-00. The modification requested the addition of seven pieces of equipment: two crushers, two screens, one wash plant, and two diesel generators (800 kW and 400 kW). The modification also requested to add an Addendum (Addendum #1) to MAQP #3342-00. MAQP #3342-01 was written to

include Addendum #1 that would allow Phillips Lake to operate at any location in or within 10 km of certain PM_{10} nonattainment areas during the summer months (April 1 – September 30) and at sites approved by the Department during the winter months (October 1 – March 31). Also, the permit was updated to reflect the current permit language and rule references used by the Department. **MAQP #3342-01** replaced MAQP #3342-00.

On February 11, 2010, the Department received a request from Glacier Lake for a company name change via administrative amendment from Phillips to Glacier Lake and also a request to change via administrative amendment their identified "home pit" location. In addition to accounting for these changes, the permit updates the rule references, permit format, and the emissions inventory. The previous version of this permit, including the emissions inventory, inadvertently omitted a portion of the total capacity of the generators utilized at the facility. The correction has been included within this version; modifying the total engine/generator capacity from the three engines/generators from 1,200 kW (2,298 hp) to 1,500 kW (2,914 hp). Permit limitations have been adjusted accordingly to remain below Title V operating permit thresholds. **MAQP #3342-02** replaced MAQP #3342-01.

On January 10, 2012, the Department received an application for administrative amendment under the Department's S source project. The Department under took this project in the last quarter of 2011 to reduce the number of sources subject to the Compliance Monitoring Strategy (CMS) program; whereby reducing the Department's burden associated with maintaining the CMS. Sources eligible for participation in this program were those with MAQP's containing federally enforceable permit limitations to remain a minor source of emissions with respect to Title V and that had permit allowable emissions at or above 80 tons per year (tpy). These sources were provided the option to amend their permits to allow incorporation of permit limits to maintain allowable emissions below 80 tpy. The permit action amended Glacier Lake's MAQP to incorporate those limits, additionally the action updated rule references, permit format, and the emissions inventory. **MAQP #3342-03** replaced MAQP #3342-02. **Addendum #2** replaced Addendum #1.

D. Current Permit Action

During a Department review, staff discovered that MAQP #3342-03 was missing a necessary permit condition and corresponding permit analysis language pertaining to production limits. Because Glacial Lake accepted limits in its MAQP to stay below the Title V permit threshold, the Department established such limits in the MAQP. With such limits, Glacial Lake is required to annually certify that its actual emissions are less than those that would require the source to obtain an air quality Title V operating permit. This annual certification is required to be submitted with the annual emission inventory and production and equipment information, and is required to be submitted on or before February 25th of each year. The annual certification is required by ARM 17.8.1204(3)(b), but was not included in MAQP #3342-03. MAQP #3342-04 specifically clarifies the certification obligation and also updates language in the permit analysis pertinent to this issue. **MAQP #3342-04** replaces MAQP #2821-03. No changes were made to the attached Addendum; **Addendum #3** replaces Addendum #2.

E. Additional Information

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

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department. Upon request, the Department will provide references for locations 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 is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

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

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

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

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

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

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

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM10
11. ARM 17.8.230 Fluoride in Forage

Glacier Lake 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 are taken to control emissions of airborne particulate matter. (2) Under this rule, Glacier Lake 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 or authorize to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this section.

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

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

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

7. ARM 17.8.340 Standards of Performance for New Stationary Sources. This rule incorporates, by reference, 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS).

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

   b. 40 CFR 60, Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants. In order for a crushing 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. Based on the information submitted by Glacier Lake, the portable crushing equipment to be used under MAQP #3342-04 is subject to this subpart because it meets the definition of an affected facility and has been constructed or modified after August 31, 1983.

   c. 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 that modify or reconstruct their stationary CI ICE after July 11, 2005, are subject to this subpart. Since the permit is written in a de minimis-friendly manner, applicability to this subpart is dependent upon the age of the CI ICE equipment utilized and the nature of operation.

8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. This rule incorporates, by reference, 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Source Categories. This facility is considered an area source of hazardous air pollutants (HAP); therefore, the following national emissions standards for hazardous air pollutants (NESHAP) apply:

   a. 40 CFR 63, Subpart A – General Provisions apply to all equipment or facilities subject to a NESHAPs 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. As Glacier Lake is considered an area source of HAP emissions and operates RICE equipment, the engine(s) are potentially subject to this subpart.

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

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. A permit fee is not required for the current permit action because the permit action is considered an administrative permit change.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department. This air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

   An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that pro-rate 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 asphalt plant, crusher, or screen that has the potential to emit (PTE) greater than 15 tpy of any pollutant. Glacier Lake has a PTE greater than 15 tpy of total PM, 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. A permit application was not required for the current permit action because the permit change is

considered an administrative permit change. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. An affidavit of publication of public notice was not required for the current permit action because the permit change is considered an administrative permit change.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Glacier Lake of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

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

11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or modified source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as

a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. (1) This rule states that an air quality permit may be transferred from one location to another if the Department receives a complete notice of intent to transfer location, the facility will operate in the new location for less than 1 year, the facility will comply with the FCAA and the Clean Air Act of Montana, and the facility complies with other applicable rules. (2) This rule states that an air quality permit may be transferred from one person to another if written notice of intent to transfer, including the names of the transferor and the transferee, is sent to the Department.

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

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

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

   This facility is not a major stationary source because it is not a listed source and the facility's PTE is less than 250 tpy of any pollutant (excluding fugitive emissions).

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

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

   a. PTE > 100 tpy of any pollutant.

   b. PTE > 10 tpy of any single Hazardous Air Pollutant (HAP), PTE > 25 tpy of any combination of HAPs, or lesser quantity as the Department may establish by rule, or

   c. PTE > 70 tpy of PM_{10} in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #3343-03 for Glacier Lake, the following conclusions were made:

   a. Glacier Lake has requested federally-enforceable permit operating limits be established to maintain the facility's PTE below 100 tpy and 80 tpy.
   b. The facility's PTE is less than 10 tpy for any single HAP and less than 25 tpy of any combination of HAPs.
   c. This source is not located in a serious PM_{10} nonattainment area.
   d. This facility is subject to current NSPS (40 CFR 60, Subpart OOO and 40 CFR 60, Subpart IIII (potentially)).
   e. This facility is potentially subject to area source provisions of a current NESHAP (40 CFR 63, Subpart ZZZZ).
   f. This source is not a Title IV affected source.
   g. This source is not a solid waste combustion unit.
   h. This source is not an EPA designated Title V source.

   Glacier Lake requested federally-enforceable permit limitations to remain a minor source of emissions with respect to Title V. Based on these limitations, the Department determined that this facility is not subject to the Title V Operating Permit Program. However, in the event that the EPA makes minor sources that are subject to NSPS obtain a Title V Operating Permit; this source will be subject to the Title V Operating Permit Program.

   i. ARM 17.8.1204(3). The Department may exempt a source from the requirement to obtain an air quality operating permit by establishing federally enforceable limitations which limit that source's PTE.

      i. In applying for an exemption under this section the owner or operator of the facility shall certify to the Department that the source's PTE does not require the source to obtain an air quality operating permit.

      ii. Any source that obtains a federally enforceable limit on PTE shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit.

3. ARM 17.8.1207 Certification of Truth, Accuracy, and Completeness. The compliance certification submittal required by ARM 17.8.1204(3) shall contain a certification of truth, accuracy, and completeness by a responsible official.

This certification and any other certification required under this subchapter shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

III. BACT Analysis

A BACT determination is required for each new or modified source. Glacier Lake 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 determination was not required for the current permit action because the permit change is considered an administrative permit change.

IV. Emission Inventory

Emission Source	Emissions Tons/Year [PTE] (a)(b) PM	PM_{10}	$PM_{2.5}$	PM_{cond}	CO	NOx	SO_2	VOC
Aggregate Crushers [1,200 TPH]	6.31	2.84	0.53	--	--	--	--	--
Aggregate Deck Screens [1,200 TPH]	11.56	3.89	0.26	--	--	--	--	--
Wash Plant [200 TPH]	1.93	0.65	0.04	--	--	--	--	--
Pug Mill [500 TPH]	4.82	1.62	0.11					
Material Handling	53.09	23.31	4.08	--	--	--	--	--
Diesel Genset [1,950 hp]	5.64	5.64	1.00	0.14	17.13	79.49	5.26	6.45
Unpaved Roadways (Haul Roads)	4.20	1.16	0.12	--	--	--	--	--
TOTAL EMISSIONS ▶	87.54	39.10	6.14	0.14	17.13	79.49	5.26	6.45

(a) Emission Inventory reflects enforceable limits on hours of operation of the diesel-fired generator engine to keep allowable NO_x emissions below the Title V threshold [100 tpy] and the SM Source threshold [80 tpy].

(b) PM emissions presented in the table represent the sum of the filterable and condensable particulate matter (CPM) fractions. All CPM is considered to be $PM_{2.5}$.

CO, carbon monoxide
hp, horsepower
MMBtu, million British Thermal Units
NO_X, oxides of nitrogen
PTE, Potential To Emit
PM, particulate matter
PM_{COND}, condensable particulate matter
PM_{10}, particulate matter with an aerodynamic diameter of 10 microns or less
$PM_{2.5}$, particulate matter with an aerodynamic diameter of 2.5 microns or less [Sum of condensable and filterable]
SO_2, sulfur dioxide
TPH, tons per hour
TPY, tons per year
VOC, volatile organic compounds

Production Rate:

Crushers (4)	1,200 tons/hour (Maximum)	10,512,000 tons/year (Maximum)
Deck Screen (4)	1,200 tons/hour (Maximum)	10,512,000 tons/year (Maximum)
Allowable Hours of Operation:	8760 hours/year	

Material Processing:

Aggregate Crushers [SCC 3-05-020-01]

Process Rate: 1200 tons/hour
Operating Hours: 8760 hours/year

Particulate Emissions (controlled):

PM Emissions:

Emission Factor 0.0012 lbs/ton processed [AP-42 Table 11.19.2-2, 8/04]

Calculations (0.0012 lbs/ton) * (1200 tons/hr) = 1.44 lbs/hr
(1.44 lbs/hr) * (8760 hrs/yr) * (0.0005 tons/lb) = 6.31 TPY

PM_{10} Emissions:

Emission Factor 0.00054 lbs/ton processed [AP-42 Table 11.19.2-2, 8/04]

Calculations (0.00054 lbs/ton) * (1200 tons/hr) = 0.65 lbs/hr

	(0.648 lbs/hr) * (8760 hrs/yr) * (0.0005 tons/lb) =		2.84 TPY

$PM_{2.5}$ Emissions:

Emission Factor	0.0001 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0001 lbs/ton) * (1200 tons/hr) =		0.12 lbs/hr
	(0.12 lbs/hr) * (8760 hrs/yr) * (0.0005 tons/lb) =		0.53 TPY

Aggregate Cold Deck Screens [SCC 3-05-020-02]

Process Rate:	1200 tons/hour
Operating Hours:	8760 hours/year

Particulate Emissions (controlled):

PM Emissions:

Emission Factor	0.0022 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0022 lbs/ton) * (1200 tons/hr) =		2.64 lbs/hr
	(2.64 lbs/hr) * (8760 hrs/yr) * (0.0005 tons/lb) =		11.56 TPY

PM_{10} Emissions:

Emission Factor	0.00074 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00074 lbs/ton) * (1200 tons/hr) =		0.89 lbs/hr
	(0.888 lbs/hr) * (8760 hrs/yr) * (0.0005 tons/lb) =		3.89 TPY

$PM_{2.5}$ Emissions:

Emission Factor	0.00005 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00005 lbs/ton) * (1200 tons/hr) =		0.06 lbs/hr
	(0.06 lbs/hr) * (8760 hrs/yr) * (0.0005 tons/lb) =		0.26 TPY

Wash Plant

Process Rate:	200 tons/hour
Operating Hours:	8760 hours/year

Particulate Emissions (controlled):

PM Emissions:

Emission Factor	0.0022 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0022 lbs/ton) * (200 tons/hr) =		0.44 lbs/hr
	(0.44 lbs/hr) * (8760 hrs/yr) * (0.0005 tons/lb) =		1.93 TPY

PM_{10} Emissions:

Emission Factor	0.00074 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00074 lbs/ton) * (200 tons/hr) =		0.15 lbs/hr
	(0.148 lbs/hr) * (8760 hrs/yr) * (0.0005 tons/lb) =		0.65 TPY

$PM_{2.5}$ Emissions:

Emission Factor	0.00005 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00005 lbs/ton) * (200 tons/hr) =		0.01 lbs/hr
	(0.01 lbs/hr) * (8760 hrs/yr) * (0.0005 tons/lb) =		0.04 TPY

Pugmill

Process Rate: 500 tons/hour
Operating Hours: 8760 hours/year

Particulate Emissions (controlled):

PM Emissions:

Emission Factor 0.0022 lbs/ton processed [AP-42 Table 11.19.2-2, 8/04]
Calculations (0.0022 lbs/ton) * (500 tons/hr) = 1.10 lbs/hr
(1.10 lbs/hr) * (8760 hrs/yr) * (0.0005 tons/lb) = 4.82 TPY

PM_{10} Emissions:

Emission Factor 0.00074 lbs/ton processed [AP-42 Table 11.19.2-2, 8/04]
Calculations (0.00074 lbs/ton) * (500 tons/hr) = 0.37 lbs/hr
(0.37 lbs/hr) * (8760 hrs/yr) * (0.0005 tons/lb) = 1.62 TPY

$PM_{2.5}$ Emissions:

Emission Factor 0.00005 lbs/ton processed [AP-42 Table 11.19.2-2, 8/04]
Calculations (0.00005 lbs/ton) * (500 tons/hr) = 0.03 lbs/hr
(0.03 lbs/hr) * (8760 hrs/yr) * (0.0005 tons/lb) = 0.11 TPY

Material Handling:

Fragmented Stone Load-In ► Ground Storage [SCC 3-05-020-31]

Process Rate: 1200 tons/hour [Crusher Capacity]
Operating Hours: 8760 hours/year

Particulate Emissions (uncontrolled):

PM Emissions:

Emission Factor 0.000031 lbs/ton [PM = PM_{10}/0.51 ►AP-42 Appendix B.2 - Table B.2.2, Category 3, 1/95]
Calculations (0.000031 lbs/ton) * (1200 tons/hr) = 0.04 lbs/hr
(0.0372 lbs/hr) * (8760 hrs/yr) * (0.0005 tons/lb) = 0.16 TPY

PM_{10} Emissions:

Emission Factor 0.000016 lbs/ton processed [AP-42 Table 11.19.2-2, 8/04]
Calculations (0.000016 lbs/ton) * (1200 tons/hr) = 0.02 lbs/hr
(0.019 lbs/hr) * (8760 hrs/yr) * (0.0005 tons/lb) = 0.08 TPY

$PM_{2.5}$ Emissions:

Emission Factor 0.000005 lbs/ton [PM = PM_{10}*0.15 ►AP-42 Appendix B.2 - Table B.2.2, Category 3, 1/95]
Calculations (0.000005 lbs/ton) * (1200 tons/hr) = 0.01 lbs/hr
(0.00558 lbs/hr) * (8760 hrs/yr) * (0.0005 tons/lb) = 0.02 TPY

Conveyor Transfer Points [SCC 3-05-020-06]

Process Rate: 1200 tons/hour [Maximum Equipment Capacity]
Operating Hours: 8760 hours/year
Total Transfers: 17 Transfers [Based on Process Flow Diagram]

Particulate Emissions (controlled):

PM Emissions:

Emission Factor	0.00014 lbs/ton processed [AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00014 lbs/ton) * (1200 tons/hr) * (17 Transfers) =	2.86 lbs/hr
	(2.856 lbs/hr) * (8760 hrs/yr) * (0.0005 tons/lb) =	12.51 TPY

PM_{10} Emissions:

Emission Factor	0.000046 lbs/ton processed [AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.000046 lbs/ton) * (1200 tons/hr) * (17 Transfers) =	0.94 lbs/hr
	(0.938 lbs/hr) * (8760 hrs/yr) * (0.0005 tons/lb) =	4.11 TPY

$PM_{2.5}$ Emissions:

Emission Factor	0.000013 lbs/ton processed [AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.000013 lbs/ton) * (1200 tons/hr) * (17 Transfers) =	0.27 lbs/hr
	(0.265 lbs/hr) * (8760 hrs/yr) * (0.0005 tons/lb) =	1.16 TPY

Storage Pile Load-In & Load-Out

Process Rate:	1200 tons/hour [Maximum Equipment Capacity]
Operating Hours:	8760 hours/year
Pile Transfers:	2 [Initial Pile Formation → Pile Load-Out to Trucks]

Particulate Emissions (uncontrolled):

Emission Factor	EF = k (0.0032) * [(U/5)^1.3 / (M / 2)^1.4]		[AP-42 13.2.4, 11/06]
where:	EF, Emission Factor = lbs Emitted / ton Processed		
	k, Dimensionless Particle Size Multiplier PM =	0.74	[AP-42 13.2.4, 11/06]
	k, Dimensionless Particle Size Multiplier PM_{10} =	0.35	[AP-42 13.2.4, 11/06]
	k, Dimensionless Particle Size Multiplier $PM_{2.5}$ =	0.053	[AP-42 13.2.4, 11/06]
	U, Mean Wind Speed (mph) =	9.3	[ASOS/AWOS AVE-MT 10 yr Ave.]
	M, Material Moisture Content (%) =	2.53	[AP-42 13.2.4.3, 11/06]

PM Emissions:

Emission Factor	EF = 0.74 * (0.0032) * [(9.33/5)^1.3 / (2.525/ 2)^1.4] =	0.0038 lbs/ton
Calculations	(0.0038 lbs/ton) * (1200 tons/hr) * (2 pile transfers) =	9.23 lbs/hr
	(9.23 lbs/hr) * (8760 hours/yr) * (0.0005 tons/lb) =	40.41 TPY

PM_{10} Emissions:

Emission Factor	EF = 0.35 * (0.0032) * [(9.33/5)^1.3 / (2.525/ 2)^1.4] =	0.0018 lbs/ton
Calculations	(0.0018 lbs/ton) * (1200 tons/hr) * (2 piles) =	4.36 lbs/hr
	(4.36 lbs/hr) * (8760 hours/yr) * (0.0005 tons/lb) =	19.11 TPY

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.053 * (0.0032) * [(9.33/5)^1.3 / (2.525/ 2)^1.4] =	0.00028	lbs/ton
Calculations	(0.0003 lbs/ton) * (1200 tons/hr) * (2 piles) =	0.66	lbs/hr
	(0.66 lbs/hr) * (8760 hours/yr) * (0.0005 tons/lb) =	2.89	TPY

Diesel-Fired Generator Set:

Engine Rating:	1950	hp
Fuel Input:	13.65	MMBtu/hr
	99.6	gallons/hour [Estimated]
Operating Hours::	2630	hours/year

Particulate Emissions (uncontrolled):

PM Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (1950 hp) =	4.29	lbs/hr
	(4.29 lbs/hr) * (2630 hrs/yr) * (0.0005 tons/lb) =	5.64	TPY

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (1950 hp) =	4.29	lbs/hr
	(4.29 lbs/hr) * (2630 hrs/yr) * (0.0005 tons/lb) =	5.64	TPY

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu	[AP-42 3.4-2, 10/96]	
Calculations	(0.0479 lb/MMBtu) * (13.65 MMBtu/hr) =	0.65	lbs/hr
	(0.65 lbs/hr) * (2630 hrs/yr) * (0.0005 tons/lb) =	0.86	TPY

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu	[AP-42 3.4-2, 10/96]	
Calculations	(0.0077 lb/MMBtu) * (13.65 MMBtu/hr) =	0.11	lbs/hr
	(0.11 lbs/hr) * (2630 hrs/yr) * (0.0005 tons/lb) =	0.14	TPY

CO Emissions (uncontrolled):

Emission Factor	0.00668 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.00668 lb/hp-hr) * (1950 hp) =	13.03	lbs/hr
	(13.03 lbs/hr) * (2630 hrs/yr) * (0.0005 tons/lb) =	17.13	TPY

NOx Emissions (uncontrolled):

Emission Factor	0.031 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.031 lb/hp-hr) * (1950 hp) =	60.45	lbs/hr
	(60.45 lbs/hr) * (2630 hrs/yr) * (0.0005 tons/lb) =	79.49	TPY

SO_2 Emissions (uncontrolled):

Emission Factor	0.00205 lb/hp-hr	[AP-42 3.3-1, 10/96]

Calculations	(0.0021 lb/hp-hr) * (1950 hp) =	4.00 lbs/hr
	(4.00 lbs/hr) * (2630 hrs/yr) * (0.0005 tons/lb) =	5.26 TPY

VOC Emissions (uncontrolled):

Emission Factor	0.002514 lb/hp-hr [AP-42 3.3-1, 10/96]	
Calculations	(0.0025 lb/hp-hr) * (1950 hp) =	4.90 lbs/hr
	(4.90 lbs/hr) * (2630 hrs/yr) * (0.0005 tons/lb) =	6.45 TPY

Unpaved Roadways (Haul Roads)

Miles Travelled:	5	Miles/Day [Estimate]
Vehicle Weight:	27.5	Tons [Mean Vehicle Weight Empty/Full]
Control Method:	Water Application	
Control Efficiency (C_e):	50%	

Particulate Emissions (controlled):

Emission Factor	$EF = k(s/12)^{a} * (W/3)^{b}$	[AP-42 13.2.2.2, 11/06]	
	where: EF, Emission Factor =	lbs Emitted Per Vehicle Mile Traveled (VMT)	
	k, Empirical Constant PM =	4.9	[AP-42 Table 13.2.2-2, 11/06]
	k, Empirical Constant PM_{10} =	1.5	[AP-42 Table 13.2.2-2, 11/06]
	k, Empirical Constant $PM_{2.5}$ =	0.15	[AP-42 Table 13.2.2-2, 11/06]
	s, Surface Material Silt Content (%) =	7.1	[AP-42 Table 13.2.2-1, 11/06]
	W, Mean Vehicle Weight (tons) =	27.5	[Applicant Provided Data]
	a, Empirical Constant PM =	0.7	[AP-42 Table 13.2.2-2, 11/06]
	a, Empirical Constant PM_{10} / $PM_{2.5}$ =	0.9	[AP-42 Table 13.2.2-2, 11/06]
	b, Empirical Constant PM - $PM_{2.5}$ =	0.45	[AP-42 Table 13.2.2-2, 11/06]

PM Emissions:

Emission Factor	EF = 4.9 * (7.1/12)^0.7 * (27.5/3)^0.45 =	9.20	lbs/VMT	
Calculations	(9.20 lbs/VMT) * (5 miles/day) * (1 - 0.5 Ce) =			22.99 lbs/day
	(22.99 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =			4.20 TPY

PM_{10} Emissions:

Emission Factor	EF = 1.5 * (7.1/12)^0.9 * (27.5/3)^0.45 =	2.53	lbs/VMT	
Calculations	(2.53 lbs/VMT) * (5 miles/day) * (1 - 0.5 Ce) =			6.34 lbs/day
	(6.34 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =			1.16 TPY

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.15 * (7.1/12)^0.9 * (27.5/3)^0.45 =	0.25	lbs/VMT

Calculations	(0.25 lbs/VMT) * (5 miles/day) * (1 - 0.5 Ce) =	0.63 lbs/day
	(0.63 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =	0.12 TPY

V. Existing Air Quality

The original location of this portable operation is a location which is classified as attainment/unclassifiable for all criteria pollutants for which this operation emits. Operation in certain PM_{10} nonattainment areas is permitted under the operating conditions established within Addendum #3 to this permit.

VI. Air Quality Impacts

Based on the information provided and the conditions established in MAQP #3342-04, the amount of controlled emissions generated by this facility will not exceed any set ambient air quality standards. The conditions in MAQP #3342-04 will be protective of air quality while Glacier Lake is operating at locations not located in or within 10 km of certain PM_{10} nonattainment areas. In addition, the limitations and conditions established in Addendum #3 would further reduce emissions in the nonattainment areas and would be protective of the ambient air quality standards. Also, this facility is a portable source that would operate on an intermittent and temporary basis, so any effects to air quality will be minor and short-lived.

VII. Ambient Air Impact Analysis

The Department determined that the impact from this permitting action will be minor because it is an administrative action. The Department 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, the Department conducted the following private property taking and damaging assessment.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?

YES	NO	
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

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

IX. Environmental Assessment

This permitting action will not result in an increase of emissions from the facility and is considered an administrative action; therefore, an environmental assessment is not required.

Permit Analysis Prepared by: John P. Proulx
Date: December 28, 2016

Addendum #3
Glacier Lake Sand and Gravel, LLC
Montana Air Quality Permit (MAQP) #3342-04

An addendum to Montana Air Quality Permit (MAQP) #3342-04 is hereby granted to Glacier Lake Sand and Gravel, LLC (Glacier Lake), pursuant to Sections 75-2-204 and 75-2-211 of the Montana Code Annotated (MCA), as amended, and the Administrative Rules of Montana (ARM) 17.8.765, as amended, for the following:

I. Permitted Equipment

Glacier Lake owns a portable crushing/screening facility that may operate four crushers (up to 1,200 tons per hour (TPH)), four screens (up to 1,200 TPH), one wash plant (up to 200 TPH), one pugmill (up to 500 TPH), three diesel engines/generators (up to 1,950 horsepower (hp)), and associated equipment.

II. Seasonal and Site Restrictions – **Winter and Summer Seasons**

Addendum #3 applies to the Glacier Lake facility while operating at any location in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) nonattainment areas. Additionally, seasonal and site restrictions apply to the facility as follows:

A. During the winter season (October 1-March 31) – The only location(s) in or within 10 km of certain PM_{10} nonattainment area where Glacier Lake may operate is:

- Township 10 North, Range 2 West, Section 22 in Lake County, Montana.
- Any site that may be approved, in writing, by the Department of Environmental Quality (Department).

B. During the summer season (April 1-September 30) – Glacier Lake may operate at any location in or within 10 km of the Butte, Columbia Falls, Libby, Kalispell, Thompson Falls, and Whitefish PM_{10} nonattainment areas.

C. Glacier Lake shall comply with the limitations and conditions contained in Addendum #3 to MAQP #3342-04 while operating in or within 10 km of any of the previously identified PM_{10} nonattainment areas. Addendum #3 shall be valid until revoked or modified. The Department reserves the authority to modify Addendum #3 at any time based on local conditions of any future site. These conditions may include, but are not limited to, local terrain, meteorological conditions, proximity to residences or other businesses, etc.

III. Limitations and Conditions

A. Operational Limitations and Conditions – **Winter Season (October 1 – March 31)**

1. Water spray bars must be available and operated, as necessary, on the crushers, screens, and all transfer points whenever the crushing/screening plant is operating (ARM 17.8.749).

2. Glacier Lake shall not cause or authorize to be discharged into the atmosphere from any equipment, any visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749). For NSPS-affected equipment constructed after April 22, 2008, for which an opacity limitation of 7% applies (such as screens and conveyors), that 7% limit shall apply to the affected equipment (ARM 17.8.340 and 40 CFR 60, Subpart OOO).

3. Glacier Lake shall not cause or authorize to be discharged into the atmosphere from haul roads, access roads, parking lots, or the general plant property any visible fugitive emissions that exhibit an opacity of 10% or greater (ARM 17.8.749).

4. Glacier Lake shall treat all unpaved portions of the access roads, parking lots, and general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the 10% opacity limitation (ARM 17.8.749).

5. Glacier Lake shall not operate, or have on-site, more than four (4) crushers at any one time. Total crusher production shall not exceed 7,200 tons per day (ARM 17.8.749).

6. Glacier Lake shall not operate, or have on-site, more than four (4) screens at any one time. Total screen production shall not exceed 7,200 tons per day (ARM 17.8.749).

7. Glacier Lake shall not operate, or have onsite, more than one (1) wash plant at any one time. Total production from the wash plant shall not exceed 1,200 tons per day (ARM 17.8.749).

8. Glacier Lake shall not operate, or have onsite, more than one (1) pugmill at any one time. Total production from the pugmill shall not exceed 3,000 tons per day (ARM 17.8.749).

9. Glacier Lake shall not operate or have on-site more than three (3) diesel-fired generator engines. The maximum combined capacity of the engine(s) that drives the generator(s) shall not exceed 1,950 hp (ARM 17.8.749).

10. Operation of the diesel engines driving the generators shall not exceed six (6) hours per day (ARM 17.8.749).

B. Operational Limitations and Conditions – **Summer Season (April 1 – September 30)**

1. Water spray bars must be available and operated, as necessary, on the crushers, screens, and all transfer points whenever the crushing/screening plant is in operation (ARM 17.8.749).

2. Glacier Lake shall not cause or authorize to be discharged into the atmosphere from any equipment, any visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749). For NSPS-affected equipment constructed after April 22, 2008 for which an opacity limitation of 7% applies (such as screens and conveyors), that 7% limit shall apply to the affected equipment (ARM 17.8.340 and 40 CFR 60, Subpart OOO).

3. Glacier Lake shall not cause or authorize to be discharged into the atmosphere from haul roads, access roads, parking lots, or the general plant property any visible fugitive emissions that exhibit an opacity of 10% or greater (ARM 17.8.749).

4. Glacier Lake shall treat all unpaved portions of the access roads, parking lots, and general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the 10% opacity limitation (ARM 17.8.749).

5. Glacier Lake shall not operate, or have on-site, more than four (4) crushers at any one time. Total crusher production shall not exceed 28,800 tons per day (ARM 17.8.749).

6. Glacier Lake shall not operate, or have onsite, more than four (4) screens at any one time. Total screen production shall not exceed 28,800 tons per day (ARM 17.8.749).

7. Glacier Lake shall not operate, or have onsite, more than one (1) wash plant at any one time. Total production from the wash plant shall not exceed 4,800 tons per day (ARM 17.8.749).

8. Glacier Lake shall not operate, or have onsite, more than one (1) pugmill at any one time. Total production from the pugmill shall not exceed 12,000 tons per day (ARM 17.8.749).

9. Glacier Lake shall not operate or have on-site more than three (3) diesel-fired generator engines. The maximum combined capacity of the engines that drive the generators shall not exceed 1,950 hp (ARM 17.8.749).

C. Operational Reporting Requirements

1. If this crushing/screening plant is moved to another nonattainment location, an Intent to Transfer form must be sent to the Department and a Public Notice Form for Change of Location must be published in a newspaper of general circulation in the area to which the transfer is to be made, at least 15 days prior to the move. The proof of publication (affidavit) of the Public Notice Form for Change of Location must be submitted to the Department prior to the move. These forms are available from the Department (ARM 17.8.749 and ARM 17.8.765).

2. Production information for the sites covered by this addendum must be maintained for five years and submitted to the Department upon request. The information must include (ARM 17.8.749):

   a. Daily tons of material crushed by each crusher at each site (including amount of recirculated/rerun material). Glacier Lake shall document, by day, the total crushing production. Glacier Lake shall sum the total crushing production for the previous day to demonstrate compliance with the limitations in Sections III.A.5 and III.B.5.

   b. Daily tons of material screened by each screen at each site (including amount of recirculated/rerun material). Glacier Lake shall document, by day, the total screening production. Glacier Lake shall sum the total screening production for the previous day to demonstrate compliance with the limitations in Sections III.A.6 and III.B.6.

   c. Daily tons of material throughput of the wash plant at each site. Glacier Lake shall document, by day, the total production at the wash plant. Glacier Lake shall sum the total screening production for the previous day to demonstrate compliance with the limitations in Sections III.A.7 and III.B.7.

   d. Daily tons of material throughput of the pugmill at each site. Glacier Lake shall document, by day, the production at the pugmill. Glacier Lake shall sum the total screening production for the previous day to demonstrate compliance with the limitations in Sections III.A.8 and III.B.8.

   e. Daily hours of operation for each diesel-fired engine at each site. Glacier Lake shall document, by day, the hours operated by each engine. Glacier Lake shall sum the total operating hours for the previous day to demonstrate compliance with the limitations in Sections III.A.10.

   f. Daily hp rating for each engine at each site to demonstrate compliance with the limitations in Sections III.A.9 and III.B.9.

   g. Daily tons of bulk material loaded at each site (production).

   h. Daily hours of operation at each site.

   i. Fugitive dust information consisting of the daily total miles driven on unpaved roads within the operating site for all plant vehicles.

Addendum #3 Analysis
Glacier Lake Sand and Gravel, LLC
Montana Air Quality Permit (MAQP) #3343-04

I. Permitted Equipment

Glacier Lake owns a portable crushing/screening facility that may operate four crushers (up to 1,200 tons per hour (TPH)), four screens (up to 1,200 TPH), one wash plant (up to 200 TPH), one pugmill (up to 500 TPH), three diesel engines/generators (up to 1,950 horsepower (hp)), and associated equipment

II. Source Description

Glacier Lake uses this crushing/screening plant and associated equipment to crush sand and gravel materials for use in various construction operations. For a typical operational setup, materials are loaded into the crushing/screening plant by a hopper and transferred by conveyor and passed through the crusher. Materials are crushed, by the crusher and sent to the screens. Materials are screened, separated, and sent to stockpile for sale and use in construction operations.

III. Applicable Rules and Regulations

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

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

A. ARM 17.8.749 Conditions for Issuance of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

B. 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. A source may not increase its emissions beyond those found in its permit unless the source applies for and receives another permit.

C. ARM 17.8.765 Transfer of Permit. An air quality permit may be transferred from one location to another if:

1. Written notice of intent to transfer location and proof of public notice are sent to the Department;

2. The source will operate in the new location for a period of less than 1 year; and

3. The source will not have any significant impact on any nonattainment area or any Class I area.

IV. Emission Inventory

WINTER SEASON [October 1 - March 31] (a)

	Emissions Lbs/Day [PTE]							
Emission Source	PM	PM_{10}	$PM_{2.5}$	PM_{cond}	CO	NOx	SO_2	VOC
Aggregate Crushers [1,200 TPH]	8.64	3.89	0.72	--	--	--	--	--
Aggregate Deck Screens [1,200 TPH]	15.84	5.33	0.36	--	--	--	--	--
Wash Plant [200 TPH]	2.64	0.89	0.06	--	--	--	--	--
Pug Mill [500 TPH]	6.60	2.22	0.15	--	--	--	--	--
Material Handling	72.72	31.93	5.59	--	--	--	--	--
Diesel Genset [1,950 hp]	25.74	25.74	4.55	0.63	78.16	362.70	23.99	29.41
Unpaved Roadways (Haul Roads)	22.99	6.34	0.63	--	--	--	--	--
TOTAL EMISSIONS ►	155.17	76.33	12.07	0.63	78.16	362.70	23.99	29.41

SUMMER SEASON [April 1 - September 31]

	Emissions Lbs/Day [PTE]							
Emission Source	PM	PM_{10}	$PM_{2.5}$	PM_{cond}	CO	NOx	SO_2	VOC
Aggregate Crushers [1,200 TPH]	34.56	15.55	2.88	--	--	--	--	--
Aggregate Deck Screens [1,200 TPH]	63.36	21.31	1.44	--	--	--	--	--
Wash Plant [200 TPH]	10.56	3.55	0.24	--	--	--	--	--
Pug Mill [500 TPH]	26.40	8.88	0.60	--	--	--	--	--
Material Handling	290.88	127.72	22.36	--	--	--	--	--
Diesel Genset [1,950 hp]	102.96	102.96	18.21	2.52	312.62	1450.80	95.94	117.66
Unpaved Roadways (Haul Roads)	22.99	6.34	0.63	--	--	--	--	--
TOTAL EMISSIONS ►	551.71	286.31	46.37	2.52	312.62	1450.80	95.94	117.66

(a) *Daily hours of operation are restricted during the Winter Season to maintain PM_{10} emissions below 82 pounds per day.*

(b) *PM emissions presented in the table represent the sum of the filterable and condensable particulate matter (CPM) fractions. All CPM is considered to be $PM_{2.5}$.*

CO, carbon monoxide
MMBtu, million British Thermal Units
NO_x, oxides of nitrogen
PM, particulate matter
PM_{10}, particulate matter with an aerodynamic diameter of 10 microns or less
$PM_{2.5}$, particulate matter with an aerodynamic diameter of 2.5 microns or less [Sum of condensable and filterable]
SO_2, oxides of sulfur
TPH, tons per hour
TPY, tons per year
VOC, volatile organic compounds

Portable Crushing & Screening Plant

Production Rate:		Winter Season	Summer Season
Crushers (4)	1,200 tons/hour (Maximum)	7,200 tons/day (Allowable)	28,800 tons/day (Maximum)
Deck Screen	1,200 tons/hour (Maximum)	7,200 tons/day (Allowable)	28,800 tons/day (Maximum)

Allowable Hours of Operation: 6 hours/day (Winter Season)

24 hours/day (Summer Season)

Power Plant: Diesel-Fired Generators [3 Generators]

Material

Aggregate Crushers [SCC 3-05-020-01]

Process Rate: 1200 tons/hour
Operating 6 hours/day (Winter Season)
24 hours/day (Summer Season)

Particulate Emissions (controlled):

PM Emissions:

Emission Factor	0.0012 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]
Calculations	(0.0012 lbs/ton) * (1200 tons/hr) =	1.44 lbs/hr
	(1.44 lbs/hr) * (6 hrs/day) =	8.64 lbs/day (Winter Season)
	(1.44 lbs/hr) * (24 hrs/day) =	34.56 lbs/day (Summer Season)

PM_{10} Emissions:

Emission Factor	0.00054 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]
Calculations	(0.00054 lbs/ton) * (1200 tons/hr) =	0.65 lbs/hr
	(0.65 lbs/hr) * (6 hrs/day) =	3.89 lbs/day (Winter Season)
	(0.648 lbs/hr) * (24 hrs/day) =	15.55 lbs/day (Summer Season)

$PM_{2.5}$ Emissions:

Emission Factor	0.0001 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]
Calculations	(0.0001 lbs/ton) * (1200 tons/hr) =	0.120 lbs/hr
	(0.120 lbs/hr) * (6 hrs/day) =	0.72 lbs/day (Winter Season)
	(0.12 lbs/hr) * (24 hrs/day) =	2.88 lbs/day (Summer Season)

Aggregate Cold Deck Screens [SCC 3-05-020-02]

Process Rate: 1200 tons/hour
Operating 6 hours/day (Winter Season)
24 hours/day (Summer Season)

Particulate Emissions (controlled):

PM Emissions:

Emission Factor	0.0022 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]
Calculations	(0.0022 lbs/ton) * (1200 tons/hr) =	2.64 lbs/hr
	(2.64 lbs/hr) * (6 hrs/day) =	15.84 lbs/day (Winter Season)
	(2.64 lbs/hr) * (24 hrs/day) =	63.36 lbs/day (Summer Season)

PM_{10} Emissions:

Emission Factor	0.00074 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]
Calculations	(0.00074 lbs/ton) * (1200 tons/hr) =	0.89 lbs/hr
	(0.89 lbs/hr) * (6 hrs/day) =	5.33 lbs/day (Winter Season)
	(0.89 lbs/hr) * (24 hrs/day) =	21.31 lbs/day (Summer Season)

$PM_{2.5}$ Emissions:

Emission Factor	0.00005 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]
Calculations	(0.00005 lbs/ton) * (1200 tons/hr) =	0.06 lbs/hr
	(0.060 lbs/hr) * (6 hrs/day) =	0.36 lbs/day (Winter Season)
	(0.06 lbs/hr) * (24 hrs/day) =	1.44 lbs/day (Summer Season)

Wash Plant

Process Rate:	200	tons/hour
Operating	6	hours/day (Winter Season)
	24	hours/day (Summer Season)

Particulate Emissions (controlled):

PM Emissions:

Emission Factor	0.0022	lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]
Calculations	(0.0022 lbs/ton) * (200 tons/hr) =	0.44	lbs/hr
	(0.44 lbs/hr) * (6 hrs/day) =	2.64	lbs/day (Winter Season)
	(0.44 lbs/hr) * (24 hrs/day) =	10.56	lbs/day (Summer Season)

PM_{10} Emissions:

Emission Factor	0.00074	lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]
Calculations	(0.00074 lbs/ton) * (200 tons/hr) =	0.15	lbs/hr
	(0.15 lbs/hr) * (6 hrs/day) =	0.89	lbs/day (Winter Season)
	(0.15 lbs/hr) * (24 hrs/day) =	3.55	lbs/day (Summer Season)

$PM_{2.5}$

Emission Factor	0.00005	lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]
Calculations	(0.00005 lbs/ton) * (200 tons/hr) =	0.010	lbs/hr
	(0.010 lbs/hr) * (6 hrs/day) =	0.06	lbs/day (Winter Season)
	(0.01 lbs/hr) * (24 hrs/day) =	0.24	lbs/day (Summer Season)

Pugmill

Process Rate:	500	tons/hour
Operating	6	hours/day (Winter Season)
	24	hours/day (Summer Season)

Particulate Emissions (controlled):

PM Emissions:

Emission Factor	0.0022	lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]
Calculations	(0.0022 lbs/ton) * (500 tons/hr) =	1.10	lbs/hr
	(1.10 lbs/hr) * (6 hrs/day) =	6.60	lbs/day (Winter Season)
	(1.10 lbs/hr) * (24 hrs/day) =	26.40	lbs/day (Summer Season)

PM_{10} Emissions:

Emission Factor	0.00074	lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]
Calculations	(0.00074 lbs/ton) * (500 tons/hr) =	0.37	lbs/hr
	(0.37 lbs/hr) * (6 hrs/day) =	2.22	lbs/day (Winter Season)
	(0.37 lbs/hr) * (24 hrs/day) =	8.88	lbs/day (Summer Season)

$PM_{2.5}$ Emissions:

Emission Factor	0.00005	lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]
Calculations	(0.00005 lbs/ton) * (500 tons/hr) =	0.025	lbs/hr
	(0.025 lbs/hr) * (6 hrs/day) =	0.15	lbs/day (Winter Season)
	(0.03 lbs/hr) * (24 hrs/day) =	0.60	lbs/day (Summer Season)

Material Handling:
Fragmented Stone Load-In ► Ground Storage [SCC 3-05-020-31]

Process Rate: 1200 tons/hour [Combined Crushing Capacity]
Operating 6 hours/day (Winter Season)
24 hours/day (Summer Season)

Particulate Emissions (uncontrolled):

PM Emissions:

Emission Factor 0.000031 lbs/ton [PM = PM_{10}/0.51 ►AP-42 Appendix B.2 - Table B.2.2, Category 3, 1/95]
Calculations (0.000031 lbs/ton) * (1200 tons/hr) = 0.04 lbs/hr
(0.04 lbs/hr) * (6 hrs/day) = 0.22 lbs/day (Winter Season)
(0.04 lbs/hr) * (hrs/day) = 0.89 lbs/day (Summer Season)

PM_{10} Emissions:

Emission Factor 0.000016 lbs/ton processed [AP-42 Table 11.19.2-2, 8/04]
Calculations (0.000016 lbs/ton) * (1200 tons/hr) = 0.02 lbs/hr
(0.02 lbs/hr) * (6 hrs/day) = 0.12 lbs/day (Winter Season)
(0.02 lbs/hr) * (hrs/day) = 0.46 lbs/day (Summer Season)

$PM_{2.5}$ Emissions:

Emission Factor 0.000005 lbs/ton [PM = PM_{10}*0.15 ►AP-42 Appendix B.2 - Table B.2.2, Category 3, 1/95]
Calculations (0.00000465 lbs/ton) * (1200 tons/hr) = 0.01 lbs/hr
(0.01 lbs/hr) * (6 hrs/day) = 0.03 lbs/day (Winter Season)
(0.01 lbs/hr) * (hrs/day) = 0.13 lbs/day (Summer Season)

Conveyor Transfer Points [SCC 3-05-020-06]

Process Rate: 1200 tons/hour [Facility Capacity]
Total Transfers: 17 Transfers [Based on Process Flow Diagram]
Operating 6 hours/day (Winter Season)
24 hours/day (Summer Season)

Particulate Emissions (controlled):

PM Emissions:

Emission Factor 0.00014 lbs/ton processed [AP-42 Table 11.19.2-2, 8/04]
Calculations (0.00014 lbs/ton) * (1200 tons/hr) * (17 Transfers) = 2.86 lbs/hr
(2.86 lbs/hr) * (6 hrs/day) = 17.14 lbs/day (Winter Season)
(2.86 lbs/hr) * (24 hrs/day) = 68.54 lbs/day (Summer Season)

PM_{10} Emissions:

Emission Factor 0.000046 lbs/ton processed [AP-42 Table 11.19.2-2, 8/04]
Calculations (0.000046 lbs/ton) * (1200 tons/hr) * (17 Transfers) = 0.94 lbs/hr
(0.94 lbs/hr) * (6 hrs/day) = 5.63 lbs/day (Winter Season)
(0.94 lbs/hr) * (24 hrs/day) = 22.52 lbs/day (Summer Season)

$PM_{2.5}$ Emissions:

Emission Factor 0.000013 lbs/ton processed [AP-42 Table 11.19.2-2, 8/04]
Calculations (0.000013 lbs/ton) * (1200 tons/hr) * (17 Transfers) = 0.265 lbs/hr
(0.265 lbs/hr) * (6 hrs/day) = 1.59 lbs/day (Winter Season)
(0.27 lbs/hr) * (24 hrs/day) = 6.36 lbs/day (Summer Season)

Storage Pile Load-In & Load-Out

Process Rate:	1200	tons/hour [Facility Capacity]
Pile Transfers:	2	[Initial Pile Formation → Pile Load-Out to Trucks]
Operating	6	hours/day (Winter Season)
	24	hours/day (Summer Season)

Particulate Emissions (uncontrolled):

Emission Factor EF = k (0.0032) * [(U/5)^1.3 / (M / 2)^1.4] [AP-42 13.2.4, 11/06]

where: EF, Emission Factor = lbs Emitted / ton Processed

k, Dimensionless Particle Size Multiplier PM	0.74	[AP-42 13.2.4, 11/06]
k, Dimensionless Particle Size Multiplier	0.35	[AP-42 13.2.4, 11/06]
k, Dimensionless Particle Size Multiplier	0.053	[AP-42 13.2.4, 11/06]
U, Mean Wind Speed (mph) =	9.3	[ASOS/AWOS AVE-MT 10 yr Ave.]
M, Material Moisture Content (%) =	2.53	[AP-42 13.2.4.3, 11/06]

PM Emissions:

Emission Factor	EF = 0.74 * (0.0032) * [(9.33/5)^1.3 / (2.525/ 2)^1.4]	0.0038	lbs/ton
Calculations	(0.0038 lbs/ton) * (1200 tons/hr) * (2 pile transfers) =	9.23	lbs/hr
	(9.23 lbs/hr) * (6 hours/day) =	55.36	lbs/day (Winter Season)
	(9.23 lbs/hr) * (24 hours/day) =	221.44	lbs/day (Summer Season)

PM_{10} Emissions:

Emission Factor	EF = 0.35 * (0.0032) * [(9.33/5)^1.3 / (2.525/ 2)^1.4]	0.0018	lbs/ton
Calculations	(0.0018 lbs/ton) * (1200 tons/hr) * (2 piles) =	4.36	lbs/hr
	(4.36 lbs/hr) * (6 hours/day) =	26.18	lbs/day (Winter Season)
	(4.36 lbs/hr) * (24 hours/day) =	104.74	lbs/day (Summer Season)

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.053 * (0.0032) * [(9.33/5)^1.3 / (2.525/ 2)^1.4]	0.00028	lbs/ton
Calculations	(0.0003 lbs/ton) * (1200 tons/hr) * (2 piles) =	0.66	lbs/hr
	(0.66 lbs/hr) * (6 hours/day) =	3.97	lbs/day (Winter Season)
	(0.66 lbs/hr) * (24 hours/day) =	15.86	lbs/day (Summer Season)

Diesel Generator Engines:

Engine Rating:	1950	hp
Fuel Input:	13.65	MMBtu/hr
	99.6	gallons/hour [Estimated]
Operating	6	hours/day (Winter Season)
	24	hours/day (Summer Season)

Particulate Emissions (uncontrolled):

PM Emissions:

Emission Factor	0.0022	lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (1950 hp) =		4.29	lbs/hr
	(4.29 lbs/hr) * (6 hrs/day) =		25.74	lbs/day (Winter Season)
	(4.29 lbs/hr) * (24 hrs/day) =		102.96	lbs/day (Summer Season)

PM_{10} Emissions:

Emission Factor	0.0022	lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (1950 hp) =		4.29	lbs/hr
	(4.29 lbs/hr) * (6 hrs/day) =		25.74	lbs/day (Winter Season)
	(4.29 lbs/hr) * (24 hrs/day) =		102.96	lbs/day (Summer Season)

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu	[AP-42 3.4-2,	
Calculations	(0.0479 lb/MMBtu) * (13.65 MMBtu/hr) =	0.65	lbs/hr
	(0.65 lbs/hr) * (6 hrs/day) =	3.92	lbs/day (Winter Season)
	(0.65 lbs/hr) * (24 hrs/day) =	15.69	lbs/day (Summer Season)

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu	[AP-42 3.4-2,	
Calculations	(0.0077 lb/MMBtu) * (13.65 MMBtu/hr) =	0.105	lbs/hr
	(0.105 lbs/hr) * (6 hrs/day) =	0.63	lbs/day (Winter Season)
	(0.11 lbs/hr) * (24 hrs/day) =	2.52	lbs/day (Summer Season)

CO Emissions (uncontrolled):

Emission Factor	0.00668 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.00668 lb/hp-hr) * (1950 hp) =	13.03	lbs/hr
	(13.03 lbs/hr) * (6 hrs/day) =	78.16	lbs/day (Winter Season)
	(13.03 lbs/hr) * (24 hrs/day) =	312.62	lbs/day (Summer Season)

NOx Emissions (uncontrolled):

Emission Factor	0.031 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.031 lb/hp-hr) * (1950 hp) =	60.45	lbs/hr
	(60.45 lbs/hr) * (6 hrs/day) =	362.70	lbs/day (Winter Season)
	(60.45 lbs/hr) * (24 hrs/day) =	1450.80	lbs/day (Summer Season)

SO_2 Emissions (uncontrolled):

Emission Factor	0.00205 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.0021 lb/hp-hr) * (1950 hp) =	4.00	lbs/hr
	(4.00 lbs/hr) * (6 hrs/day) =	23.99	lbs/day (Winter Season)
	(4.00 lbs/hr) * (24 hrs/day) =	95.94	lbs/day (Summer Season)

VOC Emissions (uncontrolled):

Emission Factor	0.002514 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.0025 lb/hp-hr) * (1950 hp) =	4.90	lbs/hr
	(4.90 lbs/hr) * (6 hrs/day) =	29.41	lbs/day (Winter Season)
	(4.90 lbs/hr) * (24 hrs/day) =	117.66	lbs/day (Summer Season)

Unpaved Roadways - Haul Roads [Winter and Summer

Miles	5	Miles/Day [Estimate]
Vehicle	27.5	Tons [Mean Vehicle Weight Empty/Full]
Control Method:	Water	
Control	50%	

Particulate Emissions (controlled):

Emission Factor $EF = k(s/12)^{a} * (W/3)^{b}$ [AP-42 13.2.2.2, 11/06]

where: EF, Emission Factor = lbs Emitted Per Vehicle Mile Traveled (VMT)

k, Empirical Constant PM =	4.9	[AP-42 Table 13.2.2-2, 11/06]
k, Empirical Constant PM_{10} =	1.5	[AP-42 Table 13.2.2-2, 11/06]
k, Empirical Constant $PM_{2.5}$ =	0.15	[AP-42 Table 13.2.2-2, 11/06]
s, Surface Material Silt Content (%)	7.1	[AP-42 Table 13.2.2-1, 11/06]
W, Mean Vehicle Weight (tons)	27.5	[Applicant Provided Data]

a, Empirical Constant PM =	0.7	[AP-42 Table 13.2.2-2, 11/06]	
a, Empirical Constant PM_{10} /$PM_{2.5}$	0.9	[AP-42 Table 13.2.2-2, 11/06]	
b, Empirical Constant PM - $PM_{2.5}$ =	0.45	[AP-42 Table 13.2.2-2, 11/06]	

PM Emissions:

Emission Factor	EF = 4.9 * (7.1/12)^0.7 * (27.5/3)^0.45 =	9.20	lbs/VMT	
Calculations	(9.20 lbs/VMT) * (5 miles/day) =		45.98	lbs/day (uncontrolled)
	(45.98 lbs/day) * (1 - 0.5 Ce) =		22.99	lbs/day (controlled)

PM_{10} Emissions:

Emission Factor	EF = 1.5 * (7.1/12)^0.9 * (27.5/3)^0.45 =	2.53	lbs/VMT	
Calculations	(2.53 lbs/VMT) * (5 miles/day) =		12.67	lbs/day (uncontrolled)
	(12.67 lbs/day) * (1 - 0.5 Ce) =		6.34	lbs/day (controlled)

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.15 * (7.1/12)^0.9 * (27.5/3)^0.45 =	0.25	lbs/VMT	
Calculations	(0.25 lbs/VMT) * (5 miles/day) =		1.27	lbs/day (uncontrolled)
	(1.27 lbs/day) * (1 - 0.5 Ce) =		0.63	lbs/day

V. Existing Air Quality

On July 1, 1987, the Environmental Protection Agency (EPA) promulgated new National Ambient Air Quality Standards (NAAQS) for particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}). Due to exceedances of the national standards for PM_{10}, the cities of Kalispell (and the nearby Evergreen area), Columbia Falls, Butte, Whitefish, Libby, Missoula, and Thompson Falls were designated by EPA as nonattainment for PM_{10}. As a result of this designation, the EPA required the Department and the City-County Health Departments to submit PM_{10} State Implementation Plans (SIP). The SIPs consisted of emission control plans that controlled fugitive dust emissions from roads, parking lots, construction, and demolition, since technical studies identified these sources to be the major contributors to PM_{10} emissions.

MAQP #3342-04 and Addendum #3 are for a portable crushing/screening plant that will locate at sites in or within 10 kilometers (km) of certain PM_{10} nonattainment areas. The more stringent operating conditions contained in the addendum will minimize any potential impact on the nonattainment areas and will protect the national ambient air quality standards. Also, this facility is a portable source that would be expected to operate on an intermittent and temporary basis and any effects on air quality would be expected to be minor and short-lived.

VI. Air Quality Impacts

MAQP #3342-04 and Addendum #3 will cover the operations of this portable crushing/screening plant while operating at any location within Montana, excluding those counties that have a Department approved permitting program and those areas that are tribal lands.

Addendum #3 will cover the operations of this portable crushing/screening plant, while operating in or within 10 km of a PM_{10} nonattainment area during the winter months (October 1 through March 31) as well as during the summer months (April 1 through September 30).

VII. Taking or Damaging Implication Analysis

As required by 2-10-101 through 105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

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?
		7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

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

VIII. Environmental Assessment

This permitting action will not result in an increase of emissions from the facility and is considered an administrative action; therefore, an Environmental Assessment is not required.

Addendum Analysis Prepared by: John P. Proulx
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