Montana Department of
ENVIRONMENTAL QUALITY
Brian Schweitzer, Governor
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November 28, 2011

Mr. Chad Bailey
Peak Sand & Gravel, Inc.
P.O. Box 405
Sandpoint, ID, 83864

Dear Mr. Bailey:

Montana Air Quality Permit #4602-02 is deemed final as of November 26, 2011, by the Department of Environmental Quality (Department). This permit is for a portable crushing and screening operation and associated equipment. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

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

Doug Kuenzli
Environmental Science Specialist
Air Resources Management Bureau
(406) 444-4267

VW:DCK
Enclosure

Montana Department of Environmental Quality
Permitting and Compliance Division

Montana Air Quality Permit #4602-02

Peak Sand & Gravel, Inc.
P.O. Box 405
Sandpoint, ID, 83864

November 26, 2011

MONTANA AIR QUALITY PERMIT

Issued To: Peak Sand & Gravel, Inc.
P.O. Box 405
Sandpoint, ID, 83864

MAQP: #4602-02
Application Complete: 08/29/2011
Preliminary Determination Issued: 10/05/2011
Department's Decision Issued: 11/10/2011
Permit Final: 11/26/2011
AFS #: 777-4602

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Peak Sand & Gravel, Inc. (Peak) 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

Peak operates a portable crushing and screening operation that was initially located in Northeast (NE) ¼ of the NE ¼, Section 21, Township 19 North, Range 30 West, in Mineral County, Montana. However, MAQP #4602-02 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*.

Addendum #2 will apply to the facility while operating at locations in or within 10 km of certain PM_{10} nonattainment areas during the summer months (April 1 – September 30). A complete list of the permitted equipment is contained in Section I.A of the permit analysis.

B. Current Permit Action

On August 29, 2011, the Department received a request from Peak to modify MAQP #4602-01 to allow the inclusion of additional diesel engines operated in association with crushing and screening facility. The associated engines were inadvertently omitted during the initial air quality permit action. The current permit action updates the permit and emission inventory to include these diesel fired engines.

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 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 (such as screens and conveyors) shall not exhibit an opacity in excess of the following averaged over 6 consecutive minutes (ARM 17.8.340 and 40 CFR 60, Subpart OOO):

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

    - For equipment that commence 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 and ARM 17.8.752).

5. Peak 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. Peak 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. Peak shall not operate more than four (4) crushers at any given time and the total combined maximum rated design capacity of the crushers shall not exceed 2,900 tons per hour (TPH (ARM 17.8.749).

8. Crushing production is limited to 13,253,000 tons during any rolling 12-month time period (ARM 17.8.749 and ARM 17.8.1204).

9. Peak shall not operate more than three (3) screens at any given time and the total combined maximum rated design capacity of the screens shall not exceed 2,175 TPH (ARM 17.8.749 and ARM 17.8.1204).

10. Screening production is limited to 9,939,750 tons during any rolling 12-month time period (ARM 17.8.749 and ARM 17.8.1204).

11. Peak shall not operate or have on-site more than two (2) diesel-fired generators. (ARM 17.8.749);

    a. The combined maximum capacity of the engines powering the generators shall not exceed 565 horsepower (hp)

    b. The engines powering the generators shall be certified Tier 1or higher under 40 CFR Part 89.

12. Peak shall not operate or have on-site more than five (5) diesel-powered non-road compression ignition engines that drive process equipment (ARM 17.8.749);

    a. The maximum rated capacity of the engine powering the jaw crusher shall not exceed 245 hp and shall be EPA certified Tier 3 or higher under 40 CFR Part 89.

b. The maximum rated capacity of the engine powering the cone crusher shall not exceed 425 hp and shall be EPA certified Tier 2 or higher under 40 CFR Part 89.

c. The maximum rated capacity of the engine powering the Warrior Powerscreen shall not exceed 92.2 hp and shall be EPA certified Tier 3 or higher under 40 CFR Part 89.

d. The maximum rated capacity of the engine powering the Chieftain Powerscreen shall not exceed 79.1 hp and shall be EPA certified Tier 1 or higher under 40 CFR Part 89.

e. The maximum rated capacity of the engine powering the conveyor shall not exceed 85 hp and shall be EPA certified Tier 1 or higher under 40 CFR Part 89.

13. Operation of each crusher, screen, and associated diesel fired engines shall not exceed 4,570 hours during any rolling 12-month time period (ARM 17.8.749 and ARM 17.8.1204).

14. If the permitted equipment is used in conjunction with any other equipment owned or operated by Peak, 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).

15. Peak shall comply with all applicable standards and limitations, monitoring, 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).

16. Peak 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. Within 60 days after achieving maximum production, but no later than 180 days after initial start-up, an Environmental Protection Agency (EPA) Method 9 opacity test and/or other methods and procedures as specified in 40 CFR 60.675 must be performed on all NSPS-affected equipment to demonstrate compliance with the emission limitations contained in Section II.A.1 and II.A.2 (ARM 17.8.340 and 40 CFR 60, Subpart A and Subpart OOO). Additional testing may be required by 40 CFR 60, Subpart OOO (ARM 17.8.340 and 40 CFR 60, Subpart OOO).

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

3. 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. Peak 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, and/or to verify compliance with permit limitations (ARM 17.8.505).

3. Peak 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. Peak shall maintain on-site records showing daily hours of operation and daily production rates for the last 12 months. The records compiled in accordance with this permit shall be maintained by Peak as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

5. Peak shall document, by month, the crushing production from the facility. By the 25th day of each month, Peak shall calculate the crushing production from the facility for the previous month. The monthly information will be used to demonstrate compliance with the rolling 12-month limitation in Section II.A.8. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

6. Peak shall document, by month, the screening production from the facility. By the 25th day of each month, Peak shall calculate the screening production from the facility for the previous month. The monthly information will be used to demonstrate compliance with the rolling 12-month limitation in Section II.A.10. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

7. Peak shall document, by month, the hours of operation of the diesel fired generators and non-road diesel engines powering facility equipment. By the 25th day of each month, Peak shall calculate the hours of operation for the diesel fired engines for the previous month. The monthly information will be used to demonstrate compliance with the rolling 12-month limitation in Section II.A.13. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

8. Peak shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit as required by ARM 17.8.1204(3)(b). The annual certification shall comply with the certification requirements of ARM 17.8.1207, and the annual certification shall be submitted with the annual emissions inventory information (ARM 17.8.749 and ARM 17.8.1204).

D. Notification

Peak shall provide the Department with written notification of the actual start-up date postmarked within 15 days after the actual start-up date (ARM 17.8.749).

SECTION III: General Conditions

A. Inspection – Peak shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (Continuous Emissions Monitoring System (CEMS), Continuous Emissions Rate Monitoring System (CERMS)) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

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

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Peak of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided for 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. Air Quality Operation Fees – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by Peak 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).

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. Peak 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
Peak Sand & Gravel, Inc.
MAQP #4602-02

I. Introduction/Process Description

Peak Sand & Gravel, Inc. (Peak) owns and operates a portable crushing and screening plant with a maximum throughput of 2,900 tons per hour (TPH) crushing capacity and 2,175 TPH for screening capacity.

A. Permitted Equipment

The following list of permitted equipment is based on information provided within the initial application and is provided for reference, certain operation flexibility is allowed and equipment may be substituted. See Section II of the MAQP for specific details that pertain to equipment limitations and conditions. Equipment permitted under this action consists of the following

- 2007 JCI Fast Track 2650 Package;
  - → Jaw crusher - 725 TPH
  - → Cummins 8.3 245 horsepower (hp) diesel engine [Tier 3]
  - → Integrated product feeder and conveyor
- 2004 Pegson 1300 MaxTrack Package;
  - → Cone crusher - 725 TPH
  - → Caterpillar C-12 425 hp diesel engine [Tier 2]
  - → Integrated product feeder and conveyor
- 2009 Powerscreen Warrior
  - → 5’ x 16’ 2-deck scalping screen - 725 TPH
  - → Caterpillar C-4.4 92.2 hp diesel engine [Tier 3]
  - → Integrated Product Conveyors
- 2003 Powerscreen Chieftain Package;
  - → 5’ x 16’ 2-deck screen - 725 TPH
  - → Duetz 1012-C 79.1 hp diesel engine [Tier 1]
- Nordberg HP400 cone crusher - 725 TPH
- 2001 ISC Impactor 77 impact crusher - 725 TPH
- JCI Deck Screen 8' x 20' 3 deck - 725 TPH
- 2007 Powerscreen Conveyor → Cummins B 3.3 85 hp diesel engine [Tier 1]
- 1999 Caterpillar 3406C 475 hp diesel fired generator [Tier 1]
- 2001 John Deere 4045TF150 90 hp diesel fired generator [Tier 1]
- Associated material handling equipment; aggregate storage bunkers, conveyors, etc.

B. Source Description

Peak proposes to operate this equipment to crush and sort sand and gravel materials. Peak would use this crushing/screening plant to crush, screen, and sort sand and gravel materials for use in various construction operations. For a typical operational setup, unprocessed materials are loaded into the crushing/screening plant via a hopper and transferred by conveyor to a series of crushers and screens where it is sorted and separated. The final product is then stockpiled for eventual use.

The initial location proposed is designated as the operations home-pit while operating within the State of Montana.

C. Permit History

On September 17, 2010, Peak submitted the initial application to install and operate up to four (4) portable non-metallic mineral crushing plants, three (3) portable screen plants, and associated equipment, including two (2) diesel engine generator sets, conveyors and aggregate storage bunkers. **MAQP #4602-00** was issued final on December 2, 2010.

On June 14, 2011, the Montana Department of Environmental Quality (Department) received a request from Peak to amend MAQP #4602-00 to allow for operation of the crushing and screening facility in or within 10 km of the Libby and Thompson Falls PM_{10} nonattainment areas during the summer months. **MAQP #4602-01** replaced MAQP #4602-00.

D. Current Permit Action

On August 29, 2011, the Department received a request from Peak to amend MAQP #4602-01 to allow the inclusion of additional diesel engines operated in association with crushing and screening facility. The associated diesel engines in question are direct drive engines used to power hydraulic pumps or drive components of crushing and screening equipment. These engines were included in the initial MAQP application; however, the engines were inadvertently omitted from MAPQ 4602-00. The current permit action updates the permit and emission inventory to include these diesel engines. **MAQP #4602-**02 replaces MAQP #4602-01and Addendum #2 replaces Addendum #1.

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 permit change.

II. Applicable Rules and Regulations

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

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

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

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

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

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

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

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

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

1. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide (SO_2)
2. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
3. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide (CO)
4. ARM 17.8.211 Ambient Air Quality Standards for Ozone
5. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter (PM)
6. ARM 17.8.221 Ambient Air Quality Standard for Visibility
7. ARM 17.8.223 Ambient Air Quality Standard for Particulate Matter with an Aerodynamic Diameter of 10 Microns or Less (PM_{10})

Peak 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, Peak 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 Process. 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 Standard of Performance for New Stationary Sources. This rule incorporates, by reference, 40 Code of Federal Regulations (CFR) Part 60, Standards of Performance for New Stationary Sources (NSPS). Based on the information submitted by Peak the portable crushing/screening operation and associated equipment are applicable to NSPS (40 CFR 60), as follows:

   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/screening plant to be subject to NSPS requirements, two specific criteria must be met. First, the crushing/screening plant must meet the definition of an affected facility and, second, the equipment in question must have been constructed, reconstructed, or modified after August 31, 1983. Based on the information submitted by Peak the crushing/screening equipment are subject to NSPS, Subpart OOO requirements as the equipment met the affected facility definition and the date of manufacture was 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.

      Based on the information submitted by Peak, several diesel fired engines are potentially subject to this Subpart as they were manufactured after the effective date. Applicability to 40 CFR 60, Subpart IIII will depend upon the diesel-fired engine utilized and the nature of operation. Additionally, MAQP 4206-02 does allow some operational flexibility with respect to engines, future diesel engine employed should be evaluated to ensure compliance with this subpart as engines may be subject.

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. Peak may be considered an NESHAP-affected facility under 40 CFR Part 63 and is potentially subject to the requirements of the following subparts.

   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 RICE at a major or area source of Hazardous Air Pollutant (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.

Based on the information submitted by Peak, the RICE equipment to be used under MAQP #4602-02 may be subject to this subpart as the facility is an area source of HAP emissions and the engines have the potential to meet the definition of stationary RICE.

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 modification of the permit is required to incorporate the conditions omitted in the initial permit action. However, the Department has waived the application fees for this 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 the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department; the air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that 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 tons per year (tpy) of any pollutant. Peak has a PTE greater than 15 tpy of PM, PM_{10}, CO 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. Peak submitted the appropriate document within the initial permit application. (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. A public notice is typically required for a modification; however, the Department has waived the public notice requirement for this permit action.

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

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

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

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Peak 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 MAQP 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 Modification--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 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 review and issuance of MAQP #4602-02 for Peak, the following conclusions were made:

a. The facility's PTE is greater than 100 tpy for PM_{10}. Peak has requested federally-enforceable permit operating limits be established to maintain the facility's PTE to less than the 100 tpy threshold.

b. The facility's PTE is less than 10 tpy for any single HAP and less than 25 tpy of combined HAPs.

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

d. This facility is potentially subject to a current NSPS (40 CFR 60, Subpart OOO and Subpart IIII).

e. This facility is potentially subject to a current NESHAP standards (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.

Peak 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.

1. 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 Determination

A BACT determination is required for any new or modified source. Peak shall install on the new or modified source the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be used.

Crushing/Screening Particulate Emissions

Two types of emission controls are readily available and used for dust suppression of fugitive emissions that result from the operation of crushing/screening equipment and associated activities. These two control methods are water and chemical dust suppressant. Chemical dust suppressant could be used on the area surrounding the crushing/screening operation, and for emissions from the crushing/screening operation itself. However, in view of the fact that water is more readily available, more cost effective, is equally effective as chemical dust suppressant, while presenting less potential environmental quality degradation, water has been identified as the

most appropriate method of pollution control of particulate emissions. In addition, water suppression has been required of recently permitted similar sources. However, Peak may use chemical dust suppressant to assist in controlling particulate emissions.

Peak shall not cause or authorize to be discharged into the atmosphere from any NSPS-affected crusher any visible emissions that exhibit an opacity of 12% or greater averaged over 6 consecutive minutes for crushers that commenced construction, modification, or reconstruction on or after April 22, 2008. Additionally, Peak shall not cause or authorize to be discharged into the atmosphere from any other associated NSPS-affected equipment, such as screens and material conveyors, any visible emissions that exhibit an opacity of 7% or greater averaged over 6 consecutive minutes for equipment that commences construction, modification, or reconstruction after April 22, 2008, and 10% for equipment that commences construction, modification, or reconstruction after August 31, 1983, but before April 22, 2008. Finally, Peak shall not cause or authorize to be discharged into the atmosphere from any crusher, screen, or associated equipment, not subject to NSPS, any visible emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes

Peak is required to have water spray bars and water available on site (at all times) and to apply the water, as necessary, to maintain compliance with the opacity restrictions and reasonable precautions limitations. Peak may also use chemical dust suppressant to maintain compliance with emissions limitations in Section II.A. of MAQP #4602-02. The Department determined that using water spray bars, water, and/or chemical dust suppressant to maintain compliance with the opacity requirements and reasonable precaution limitations constitutes BACT for the operation for the additional equipment.

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

Diesel Engines

Due to the limited amount of emissions produced by the diesel engines used in associate with MAQP #4602-02 and the lack of cost effective add-on controls, this control approach would be cost prohibitive. Therefore, the Department determined that proper operation and maintenance with no add-on controls would constitute BACT for the diesel engine.

In addition, any new diesel 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 1039), New Source Performance Standard emission limitations for stationary compression ignition engines (40 CFR 60, Subpart IIII), or National Emissions Standards for Hazardous Air Pollutant Sources for Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ). Therefore, the Department has determined that compliance with applicable federal standards and proper operation and maintenance of the engines constitutes BACT for these engines.

IV. Emission Inventory

	Emissions Tons/Year [PTE][(a)(b)]						
Emission Source	PM	PM_{10}	$PM_{2.5}$	CO	NOx	SO_2	VOC
JCI Fast Track Jaw Crusher	1.99	0.89	0.17	--	--	--	--
Pegson 1300 Cone Crusher	1.99	0.89	0.17	--	--	--	--
Nordberg HP400 Cone Crusher	1.99	0.89	0.17	--	--	--	--
ISC Impactor 77 Impact Crusher	1.99	0.89	0.17	--	--	--	--
Powerscreen 5'x16' 2 Deck Warrior	3.64	1.23	0.08	--	--	--	--

Powerscreen 5'x16' 2 Deck Chieftain	3.64	1.23	0.08	--	--	--	--
JCI Deck Screen 8' x 20' 3 Deck	3.64	1.23	0.08	--	--	--	--
Material Handling	93.47	44.30	7.75	--	--	--	--
Diesel Genset - Caterpillar 3406C (475 hp)	0.96	0.96	0.42	20.34	16.51	2.23	2.73
Diesel Genset - John Deere 4045TF150 (90 hp)	0.45	0.45	0.08	1.37	3.13	0.42	0.52
JCI Fast Track - Diesel Engine (245 hp)	1.23	1.23	0.22	3.74	3.46	1.15	1.41
Powerscreen Warrior - Diesel Engine (92.2 hp)	0.46	0.46	0.08	1.72	1.53	0.43	0.53
Pegson 1300 - Diesel Engine (425 hp)	0.32	0.32	0.38	5.57	9.64	1.99	2.44
Powerscreen Chieftain - Diesel Engine (79.1 hp)	0.40	0.40	0.07	1.21	2.75	0.37	0.45
Powerscreen Conveyor - Diesel Engine (85 hp)	0.43	0.43	0.08	1.30	2.96	0.40	0.49
Unpaved Roadways (Haul Roads)	4.20	1.16	0.12	--	--	--	--
TOTAL EMISSIONS ►	120.80	56.96	10.10	35.25	39.97	6.99	8.57

(a) *Emission Inventory reflects enforceable limits on hours of operation and production output to keep allowable PM_{10} emissions below the Title V threshold [100 tpy] and NO_x emissions below the dispersion modeling threshold [40 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
g, grams
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:

Crushers (4)	2,900 tons/hour (Maximum)	25,404,000 tons/year (Maximum)	13,253,000 tons/year (Allowable)
Deck Screen (3)	2,175 tons/hour (Maximum)	19,053,000 tons/year (Maximum)	9,939,750 tons/year (Allowable)

Allowable Hours of Operation: 4570 hours/year

Material Processing:

JCI Fast Track Jaw Crusher [SCC 3-05-020-01]

Process Rate: 725 tons/hour
Operating Hours: 4570 hours/year

Particulate Emissions:

PM Emissions (controlled):

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

Calculations (0.0012 lbs/ton) * (725 tons/hr) = 0.87 lbs/hr
(0.87 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) = 1.99 TPY

PM_{10} Emissions (controlled):

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

Calculations (0.00054 lbs/ton) * (725 tons/hr) = 0.39 lbs/hr
(0.3915 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) = 0.89 TPY

$PM_{2.5}$ Emissions (controlled):

Emission Factor 0.0001 lbs/ton processed [AP-42 Table 11.19.2-2, 8/04]

Calculations	(0.0001 lbs/ton) * (725 tons/hr) =		0.07 lbs/hr
	(0.0725 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.17 TPY

Pegson 1300 Cone Crusher [SCC 3-05-020-02]

Process Rate: 725 tons/hour
Operating Hours: 4570 hours/year

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.0012 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0012 lbs/ton) * (725 tons/hr) =		0.87 lbs/hr
	(0.87 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		1.99 TPY

PM_{10} Emissions (controlled):

Emission Factor	0.00054 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00054 lbs/ton) * (725 tons/hr) =		0.39 lbs/hr
	(0.3915 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.89 TPY

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.0001 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0001 lbs/ton) * (725 tons/hr) =		0.07 lbs/hr
	(0.0725 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.17 TPY

Nordberg HP400 Cone Crusher [SCC 3-05-020-02]

Process Rate: 725 tons/hour
Operating Hours: 4570 hours/year

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.0012 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0012 lbs/ton) * (725 tons/hr) =		0.87 lbs/hr
	(0.87 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		1.99 TPY

PM_{10} Emissions (controlled):

Emission Factor	0.00054 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00054 lbs/ton) * (725 tons/hr) =		0.39 lbs/hr
	(0.3915 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.89 TPY

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.0001 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0001 lbs/ton) * (725 tons/hr) =		0.07 lbs/hr
	(0.0725 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.17 TPY

ISC Impactor 77 [SCC 3-05-020-03]

Process Rate: 725 tons/hour
Operating Hours: 4570 hours/year

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.0012 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0012 lbs/ton) * (725 tons/hr) =		0.87 lbs/hr
	(0.87 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		1.99 TPY

PM_{10} Emissions (controlled):

Emission Factor	0.00054 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00054 lbs/ton) * (725 tons/hr) =		0.39 lbs/hr
	(0.3915 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.89 TPY

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.0001 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0001 lbs/ton) * (725 tons/hr) =		0.07 lbs/hr
	(0.0725 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.17 TPY

Powerscreen 5'x16' 2 Deck Warrior [SCC 3-05-020-02]

Process Rate: 725 tons/hour
Operating Hours: 4570 hours/year

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.0022 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0022 lbs/ton) * (725 tons/hr) =		1.60 lbs/hr
	(1.595 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		3.64 TPY

PM_{10} Emissions (controlled):

Emission Factor	0.00074 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00074 lbs/ton) * (725 tons/hr) =		0.54 lbs/hr
	(0.5365 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		1.23 TPY

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.00005 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00005 lbs/ton) * (725 tons/hr) =		0.04 lbs/hr
	(0.03625 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.08 TPY

Powerscreen 5'x16' 2 Deck Cheiftan [SCC 3-05-020-02]

Process Rate: 725 tons/hour
Operating Hours: 4570 hours/year

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.0022 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0022 lbs/ton) * (725 tons/hr) =		1.60 lbs/hr
	(1.595 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		3.64 TPY

PM_{10} Emissions (controlled):

Emission Factor	0.00074 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00074 lbs/ton) * (725 tons/hr) =		0.54 lbs/hr
	(0.5365 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		1.23 TPY

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.00005 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00005 lbs/ton) * (725 tons/hr) =		0.04 lbs/hr
	(0.03625 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.08 TPY

JCI Deck Screen 8' x 20' 3 Deck [SCC 3-05-020-02]

Process Rate: 725 tons/hour
Operating Hours: 4570 hours/year

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.0022 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0022 lbs/ton) * (725 tons/hr) =		1.60 lbs/hr
	(1.595 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		3.64 TPY

PM_{10} Emissions (controlled):

Emission Factor	0.00074 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00074 lbs/ton) * (725 tons/hr) =		0.54 lbs/hr
	(0.5365 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		1.23 TPY

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.00005 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00005 lbs/ton) * (725 tons/hr) =		0.04 lbs/hr
	(0.03625 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.08 TPY

Material Handling:

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

Process Rate: 2900 tons/hour [4 Crusher Capacity]
Operating Hours: 4570 hours/year

Particulate Emissions:

PM Emissions:

Emission Factor	0.00016 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00016 lbs/ton) * (2900 tons/hr) =		0.46 lbs/hr
	(0.464 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		1.06 TPY

PM_{10} Emissions:

Emission Factor	0.00016 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00016 lbs/ton) * (2900 tons/hr) =		0.46 lbs/hr
	(0.464 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		1.06 TPY

$PM_{2.5}$ Emissions:

Emission Factor	0.00016 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]

Calculations	(0.00016 lbs/ton) * (2900 tons/hr) =	0.46 lbs/hr
	(0.464 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =	1.06 TPY

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

Process Rate:	725	tons/hour
Operating Hours:	4570	hours/year
Total Transfers:	14	Transfers [Based on Process Flow Diagram]

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.00014 lbs/ton processed [AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00014 lbs/ton) * (725 tons/hr) * (14 Transfers) =	1.42 lbs/hr
	(1.421 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =	3.25 TPY

PM_{10} Emissions (controlled):

Emission Factor	0.000046 lbs/ton processed [AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.000046 lbs/ton) * (725 tons/hr) * (14 Transfers) =	0.47 lbs/hr
	(0.467 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =	1.07 TPY

$PM_{2.5}$ Emissions(controlled):

Emission Factor	0.000013 lbs/ton processed [AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.000013 lbs/ton) * (725 tons/hr) * (14 Transfers) =	0.13 lbs/hr
	(0.132 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =	0.30 TPY

Storage Pile Load-In & Load-Out

Process Rate:	5075	tons/hour [4 Crushers & 3 Screens @ 725 TPH]
Operating Hours:	4570	hours/year
Pile Transfers:	2	[Initial Pile Formation → Pile Load-Out to Trucks]

Particulate Emissions:

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) * (5075 tons/hr) * (2 pile transfers) =	39.02 lbs/hr
	(39.02 lbs/hr) * (4570 hours/yr) * (0.0005 tons/lb) =	89.17 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) * (5075 tons/hr) * (2 piles) =	18.46 lbs/hr
	(18.46 lbs/hr) * (4570 hours/yr) * (0.0005 tons/lb) =	42.17 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) * (5075 tons/hr) * (2 piles) =	2.79	lbs/hr
	(2.79 lbs/hr) * (4570 hours/yr) * (0.0005 tons/lb) =	6.39	TPY

Diesel Engine Emissions:

Primary Generator Set: 1999 Caterpillar 3406C 475 hp [Tier 1]

Engine Rating: 475 hp
Fuel Input: 3.33 MMBtu/hr
24.3 gallons/hour [Estimated]
Operating Hours: 4570 hours/year

Particulate Emissions:

PM Emissions:

Emission Factor	0.4 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(0.4 lb/hp-hr) * (475 hp) * (0.002205 lb/gram) =		0.42 lbs/hr
	(0.42 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.96 TPY

PM_{10} Emissions:

Emission Factor	0.4 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(0.4 lb/hp-hr) * (475 hp) * (0.002205 lb/gram) =		0.42 lbs/hr
	(0.42 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.96 TPY

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0479 lb/MMBtu) * (3.33 MMBtu/hr) =		0.16 lbs/hr
	(0.16 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.36 TPY

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0077 lb/MMBtu) * (3.33 MMBtu/hr) =		0.03 lbs/hr
	(0.03 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.06 TPY

CO Emissions:

Emission Factor	8.5 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(8.5 lb/hp-hr) * (475 hp) * (0.002205 lb/gram) =		8.90 lbs/hr
	(8.90 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		20.34 TPY

NOx Emissions:

Emission Factor	6.9 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(6.9 lb/hp-hr) * (475 hp) * (0.002205 lb/gram) =		7.23 lbs/hr
	(7.23 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		16.51 TPY

SO_2 Emissions:

Emission Factor	0.00205 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0021 lb/hp-hr) * (475 hp) =		0.97 lbs/hr
	(0.97 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		2.23 TPY

VOC Emissions:

Emission Factor	0.002514 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0025 lb/hp-hr) * (475 hp) =		1.19 lbs/hr
	(1.19 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		2.73 TPY

Secondary Diesel Generator Set: 2001 John Deere 4045TF150 90 hp [Tier 1]

Engine Rating:	90 hp
Fuel Input:	0.63 MMBtu/hr
	4.6 gallons/hour [Estimated]
Operating Hours:	4570 hours/year

Particulate Emissions:

PM Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (90 hp) =		0.20 lbs/hr
	(0.20 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.45 TPY

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (90 hp) =		0.20 lbs/hr
	(0.20 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.45 TPY

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0479 lb/MMBtu) * (0.63 MMBtu/hr) =		0.03 lbs/hr
	(0.03 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.07 TPY

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0077 lb/MMBtu) * (0.63 MMBtu/hr) =		0.005 lbs/hr
	(0.00 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.01 TPY

CO Emissions:

Emission Factor	0.00668 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.00668 lb/hp-hr) * (90 hp) =		0.60 lbs/hr
	(0.60 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		1.37 TPY

NOx Emissions:

Emission Factor	6.9 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(6.9 lb/hp-hr) * (90 hp) * (0.002205 lbs/gram) =		1.37 lbs/hr
	(1.37 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		3.13 TPY

SO_2 Emissions:

Emission Factor	0.00205 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0021 lb/hp-hr) * (90 hp) =		0.18 lbs/hr
	(0.18 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.42 TPY

VOC Emissions:

Emission Factor	0.002514 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0025 lb/hp-hr) * (90 hp) =		0.23 lbs/hr
	(0.23 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.52 TPY

JCI Fast Track Diesel Engine: 2007 Cummins 8.3 183 hp [Tier 3]

Engine Rating:	245 hp
Fuel Input:	1.72 MMBtu/hr
	12.5 gallons/hour [Estimated]
Operating Hours:	4570 hours/year

Particulate Emissions:

PM Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (245 hp) =		0.54 lbs/hr
	(0.54 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		1.23 TPY

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (245 hp) =		0.54 lbs/hr
	(0.54 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		1.23 TPY

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0479 lb/MMBtu) * (1.72 MMBtu/hr) =		0.08 lbs/hr
	(0.08 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.19 TPY

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0077 lb/MMBtu) * (1.72 MMBtu/hr) =		0.01 lbs/hr
	(0.01 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.03 TPY

CO Emissions:

Emission Factor	0.00668 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.00668 lb/hp-hr) * (245 hp) =		1.64 lbs/hr
	(1.64 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		3.74 TPY

NOx Emissions:

Emission Factor	2.8 g/bhp-hr	[EPA-420-R-10-018 NR-009d - Table 8, 07/10]	
Calculations	(2.8 lb/hp-hr) * (245 hp) * (0.002205 lb/gram) =		1.51 lbs/hr
	(1.51 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		3.46 TPY

SO_2 Emissions:

Emission Factor	0.00205 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0021 lb/hp-hr) * (245 hp) =		0.50 lbs/hr
	(0.50 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		1.15 TPY

VOC Emissions:

Emission Factor	0.002514 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0025 lb/hp-hr) * (245 hp) =		0.62 lbs/hr
	(0.62 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		1.41 TPY

Powerscreen Warrior Diesel Engine: 2009 Caterpillar C-4.4 92.2 [Tier 3]

Engine Rating:	92.2 hp	
Fuel Input:	0.65 MMBtu/hr	
	4.7 gallons/hour [Estimated]	
Operating Hours:	4570 hours/year	

Particulate Emissions:

PM Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (92.2 hp) =		0.20 lbs/hr
	(0.20 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.46 TPY

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (92.2 hp) =		0.20 lbs/hr
	(0.20 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.46 TPY

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0479 lb/MMBtu) * (0.65 MMBtu/hr) =		0.03 lbs/hr
	(0.03 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.07 TPY

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0077 lb/MMBtu) * (0.65 MMBtu/hr) =		0.00 lbs/hr
	(0.00 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.01 TPY

CO Emissions:

Emission Factor	3.7 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(3.7 lb/hp-hr) * (92.2 hp) * (0.002205 lb/gram) =		0.75 lbs/hr
	(0.75 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		1.72 TPY

NOx Emissions:

Emission Factor	3.3 g/bhp-hr	[EPA-420-R-10-018 NR-009d - Table 8, 07/10]	
Calculations	(3.3 lb/hp-hr) * (92.2 hp) * (0.002205 lb/gram) =		0.67 lbs/hr
	(0.67 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		1.53 TPY

SO_2 Emissions:

Emission Factor	0.00205 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0021 lb/hp-hr) * (92.2 hp) =		0.19 lbs/hr
	(0.19 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.43 TPY

VOC Emissions:

Emission Factor	0.002514 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0025 lb/hp-hr) * (92.2 hp) =		0.23 lbs/hr
	(0.23 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.53 TPY

Pegson 1300 Diesel Engine: 2004 Caterpillar C-12 425 hp [Tier 2]

Engine Rating:	425 hp
Fuel Input:	2.98 MMBtu/hr
	21.7 gallons/hour [Estimated]
Operating Hours:	4570 hours/year

Particulate Emissions:

PM Emissions:

Emission Factor	0.15 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(0.15 lb/hp-hr) * (425 hp) * (0.002205 lb/gram) =		0.14 lbs/hr
	(0.14 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.32 TPY

PM_{10} Emissions:

Emission Factor	0.15 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(0.15 lb/hp-hr) * (425 hp) * (0.002205 lb/gram) =		0.14 lbs/hr
	(0.14 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.32 TPY

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0479 lb/MMBtu) * (2.98 MMBtu/hr) =		0.14 lbs/hr
	(0.14 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.33 TPY

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0077 lb/MMBtu) * (2.98 MMBtu/hr) =		0.02 lbs/hr
	(0.02 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.05 TPY

CO Emissions:

Emission Factor	2.6 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(2.6 lb/hp-hr) * (425 hp) * (0.002205 lb/gram) =		2.44 lbs/hr
	(2.44 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		5.57 TPY

NOx Emissions:

Emission Factor	4.5 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(4.5 lb/hp-hr) * (425 hp) * (0.002205 lb/gram) =		4.22 lbs/hr
	(4.22 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		9.64 TPY

SO_2 Emissions:

Emission Factor	0.00205 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0021 lb/hp-hr) * (425 hp) =		0.87 lbs/hr
	(0.87 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		1.99 TPY

VOC Emissions:

Emission Factor	0.002514 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0025 lb/hp-hr) * (425 hp) =		1.07 lbs/hr
	(1.07 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		2.44 TPY

Powerscreen Chieftain Diesel Engine: 2003 Deutz 1012-C 79.1 hp [Tier 1]

Engine Rating: 79.1 hp
Fuel Input: 0.55 MMBtu/hr
4.0 gallons/hour [Estimated]
Operating Hours: 4570 hours/year

Particulate Emissions:

PM Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (79.1 hp) =		0.17 lbs/hr
	(0.17 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.40 TPY

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (79.1 hp) =		0.17 lbs/hr
	(0.17 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.40 TPY

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0479 lb/MMBtu) * (0.55 MMBtu/hr) =		0.03 lbs/hr
	(0.03 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.06 TPY

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0077 lb/MMBtu) * (0.55 MMBtu/hr) =		0.00 lbs/hr
	(0.00 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.01 TPY

CO Emissions:

Emission Factor	0.00668 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.00668 lb/hp-hr) * (79.1 hp) =		0.53 lbs/hr
	(0.53 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		1.21 TPY

NOx Emissions:

Emission Factor	6.9 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(6.9 lb/hp-hr) * (79.1 hp) * (0.002205 lb/gram) =		1.20 lbs/hr
	(1.20 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		2.75 TPY

SO_2 Emissions:

Emission Factor	0.00205 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0021 lb/hp-hr) * (79.1 hp) =		0.16 lbs/hr
	(0.16 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.37 TPY

VOC Emissions:

Emission Factor	0.002514 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]

Calculations	(0.0025 lb/hp-hr) * (79.1 hp) =		0.20 lbs/hr
	(0.20 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.45 TPY

Powerscreen Conveyor Diesel Engine: 2007 Cummins B3.3 85 hp [Tier 1]

Engine Rating: 85 hp
Fuel Input: 0.60 MMBtu/hr
4.3 gallons/hour [Estimated]
Operating Hours: 4570 hours/year

Particulate Emissions:

PM Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (85 hp) =		0.19 lbs/hr
	(0.19 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.43 TPY

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (85 hp) =		0.19 lbs/hr
	(0.19 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.43 TPY

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0479 lb/MMBtu) * (0.60 MMBtu/hr) =		0.03 lbs/hr
	(0.03 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.07 TPY

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0077 lb/MMBtu) * (0.60 MMBtu/hr) =		0.005 lbs/hr
	(0.00 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.01 TPY

CO Emissions:

Emission Factor	0.00668 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.00668 lb/hp-hr) * (85 hp) =		0.57 lbs/hr
	(0.57 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		1.30 TPY

NOx Emissions:

Emission Factor	6.900 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(6.9 lb/hp-hr) * (85 hp) * (0.002205 lb/gram) =		1.29 lbs/hr
	(1.29 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		2.96 TPY

SO_2 Emissions:

Emission Factor	0.00205 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0021 lb/hp-hr) * (85 hp) =		0.17 lbs/hr
	(0.17 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) =		0.40 TPY

VOC Emissions:

Emission Factor	0.002514 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0025 lb/hp-hr) * (85 hp) =		0.21 lbs/hr

(0.21 lbs/hr) * (4570 hrs/yr) * (0.0005 tons/lb) = 0.49 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%

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_{10} 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 initial location of this portable source is to be located in the NE ¼ of the NE ¼, Section 21, Township 19 North, Range 30 West, in Mineral County, Montana. The initial location and those areas for which this facility is permitted to operate under MAQP #4602-02 has been designated unclassified/attainment with all ambient air quality standards and there are no major air pollution sources in the surrounding area.

Addendum #2 to this permit will apply to the source while operating in or within 10 km of the Libby and Thompson Falls PM_{10} nonattainment areas during the summer months (April 1 – September 30).

VI. Air Quality Impacts

MAQP #4602-02 regulates the crushing/screening plant while operating at any location within Montana, excluding those counties that have a Department-approved permitting program. In the view of the Department, the allowable emissions generated by this facility are not expected

exceed any set ambient standard. In addition, this source is portable and any air quality impacts are expected to be minimal and short-lived.

If the source locates and operates in or within 10 km of a PM_{10} nonattainment area, Peak will be required to operate in accordance with MAQP #4602-02 and Addendum #2, which includes more stringent limits and conditions to ensure that the proposed operation does not result in additional degradation of air quality in the affected nonattainment area. A more detailed discussion and analysis of ambient impacts from operations locating in or within 10 km of certain PM_{10} nonattainment areas is contained in the Addendum Analysis to Addendum #2 of MAQP 4602-02.

VII. Ambient Air Impact Analysis

The Department determined that the impact from this permitting action will be minor. The Department believes it will not cause or contribute to a violation on 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?
	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

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

Addendum #2
Peak Sand and Gravel, Inc.
Montana Air Quality Permit (MAQP) #4602-02

An addendum to MAQP #4602-02 is issued to Peak Sand and Gravel, Inc. (Peak), 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:

I. Permitted Equipment

The facility is permitted to operate four crushers with a combined maximum material throughput capacity not to exceed 2,900 tons per hour (TPH), three screens with a combined maximum material throughput capacity not to exceed 2,175 TPH, two diesel engines/generators with a combined maximum rated capacity not to exceed 565 horsepower (hp), three aggregate storage bunkers and multiple conveyors. See Section I.A of the MAQP Analysis for complete listing of equipment.

II. Seasonal and Site Restrictions

Addendum #2 applies to the Peak facility while operating at any location in or within 10 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 summer season (April 1-September 30) - The only location in or within 10 km of a PM_{10} nonattainment area where Peak may operate is:

1. Libby or Thompson Falls PM_{10} nonattainment areas.

2. Any other site that may be approved, in writing, by the Montana Department of Environmental Quality (Department).

B. Peak shall comply with the limitations and conditions contained in Addendum #2 to MAQP #4602-02 while operating in or within 10 km of any of the previously identified PM_{10} nonattainment areas. Addendum #2 shall be valid until revoked or modified. The Department reserves the authority to modify Addendum #2 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– **Summer Season**

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 and ARM 17.8.752).

2. Peak shall not cause or authorize to be discharged into the atmosphere from any equipment, such as screens or transfer points, 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 (ARM17.8.340 and 40 CFR 60, Subpart OOO).

3. Peak 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. Peak 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 and ARM 17.8.752).

5. Peak shall not operate or have on-site, more than four (4) crushers at any one time. Total combined crusher production shall not exceed 65,250 tons per day (ARM 17.8.749 and 17.8.1204).

6. Peak shall not operate or have on-site, more than three (3) screens at any one time. Total combined screen production shall not exceed 48,938 tons per day (ARM 17.8.749 and 17.8.1204).

7. Operation of the crushing and screening facility (including associated diesel-fired engines) shall not exceed 22.5 hours per day (ARM 17.8.749 & 17.8.1204).

8. Peak shall not operate or have on-site more than two (2) diesel-fired generators. (ARM 17.8.749);

   a. The combined maximum capacity of the engines powering the generators shall not exceed 565 horsepower (hp)

   b. The engines powering the generators shall be certified Tier 1or higher under 40 CFR Part 89.

9. Peak shall not operate or have on-site more than five (5) diesel-powered non-road compression ignition engines that drive process equipment (ARM 17.8.749);

   a. The maximum rated capacity of the engine powering the jaw crusher shall not exceed 245 hp and shall be EPA certified Tier 3 or higher under 40 CFR Part 89.

   b. The maximum rated capacity of the engine powering the cone crusher shall not exceed 425 hp and shall be EPA certified Tier 2 or higher under 40 CFR Part 89.

   c. The maximum rated capacity of the engine powering the Warrior Powerscreen shall not exceed 92.2 hp and shall be EPA certified Tier 3 or higher under 40 CFR Part 89.
   d. The maximum rated capacity of the engine powering the Chieftain Powerscreen shall not exceed 79.1 hp and shall be EPA certified Tier 1 or higher under 40 CFR Part 89.

   e. The maximum rated capacity of the engine powering the conveyor shall not exceed 85 hp and shall be EPA certified Tier 1 or higher under 40 CFR Part 89.

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 re-circulated/rerun material). Peak shall document, by day, the total crushing production. Peak shall sum the total crushing production for the previous day to demonstrate compliance with the limitations in Section III.A.5.

   b. Daily tons of material screened by each screen at each site (including amount of re-circulated/rerun material). Peak shall document, by day, the total screening production. Peak shall sum the total screening production for the previous day to demonstrate compliance with the limitations in Section III.A.6.

   c. Daily hours of operation at each site. Peak shall document, by day, the total hours of operation. Peak shall sum the total hours of operation for the previous day to demonstrate compliance with the limitations in Sections III.A.7.

   d. Record daily the hp rating for each engine at each site to demonstrate compliance with the conditions in Section III.A.8 and III.A.9.

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

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

Addendum #2 Analysis
Peak Sand and Gravel, Inc.
Montana Air Quality Permit (MAQP) #4602-02

I. Permitted Equipment

The facility is permitted to operate four crushers with a combined maximum material throughput capacity not to exceed 2,900 tons per hour (TPH), three screens with a combined maximum material throughput capacity not to exceed 2,175 TPH, two diesel engines/generators with a combined maximum rated capacity not to exceed 565 horsepower (hp), three aggregate storage bunkers and multiple conveyors. See Section I.A of the MAQP Analysis for complete listing of equipment.

II. Source Description

Peak proposes to use this crushing/screening plant to crush, screen, and sort sand and gravel materials for use in various construction operations. For a typical operational setup, unprocessed materials are loaded into the crushing/screening plant via a hopper and transferred by conveyor to the crushers. From the crusher, materials are sent to the screen, where they are separated and conveyed to stockpiles.

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 Montana 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

Summer Season [April 1 – September 30] *(a)*

Emission Source	Emissions Lbs/Day [PTE] *(b)*						
	PM	PM_{10}	$PM_{2.5}$	CO	NOx	SO_2	VOC
JCI Fast Track Jaw Crusher	19.58	8.81	1.63	--	--	--	--
Pegson 1300 Cone Crusher	19.58	8.81	1.63	--	--	--	--
Nordberg HP400 Cone Crusher	19.58	8.81	1.63	--	--	--	--
ISC Impactor 77 Impact Crusher	19.58	8.81	1.63	--	--	--	--
Powerscreen 5'x16' 2 Deck Warrior	35.89	12.07	0.82	--	--	--	--
Powerscreen 5'x16' 2 Deck Chieftain	35.89	12.07	0.82	--	--	--	--
JCI Deck Screen 8' x 20' 3 Deck	35.89	12.07	0.82	--	--	--	--
Material Handling	900.56	429.69	74.45	--	--	--	--
Diesel Genset - Caterpillar 3406C (475 hp)	9.43	9.43	4.16	200.31	162.60	21.91	26.87
Diesel Genset - John Deere 4045TF150 (90 hp)	4.46	4.46	0.79	13.53	30.81	4.15	5.09
JCI Fast Track - Diesel Engine (245 hp)	12.13	12.13	2.15	36.82	34.03	11.30	13.86
Powerscreen Warrior - Diesel Engine (92 hp)	4.56	4.56	0.81	16.92	15.10	4.25	5.22
Pegson 1300 - Diesel Engine (425 hp)	3.16	0.02	0.02	0.02	10.96	3.92	0.0022
Powerscreen Chieftain - Diesel Engine (79 hp)	3.92	NG	NG	NG	0.01	1.12	NG
Powerscreen Conveyor - Diesel Engine (85 hp)	4.21	NG	NG	NG	0.01	1.20	NG
Unpaved Roadways (Haul Roads)	22.99	6.34	0.63	--	--	--	--
TOTAL EMISSIONS [lbs/day] ►	1151.37	538.07	91.98	267.61	253.52	47.86	51.04

(a) Daily hours of operation are restricted during the Summer Season to maintain PM_{10} emissions below 547 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
g, grams
MMBtu, million British Thermal Units
NG, negligible [emission source unit exhibits negligible emission potential < 0.01 lbs]
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:

Crushers (4)	2,900 tons/hour (Maximum)	69,600 tons/day (Maximum)	65,250 tons/day (Allowable)
Deck Screen (3)	2,175 tons/hour (Maximum)	52,200 tons/day (Maximum)	48,938 tons/day (Allowable)

Allowable Hours of Operation: 22.5 hours/day

Material Processing:

JCI Fast Track Jaw Crusher [SCC 3-05-020-01]

Process Rate: 725 tons/hour
Operating Hours: 22.5 hours/day

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.0012 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0012 lbs/ton) * (725 tons/hr) =		0.87 lbs/hr
	(0.87 lbs/hr) * (22.5 hrs/day) =		19.58 lbs/day

PM_{10} Emissions (controlled):

Emission Factor	0.00054 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00054 lbs/ton) * (725 tons/hr) =		0.39 lbs/hr
	(0.39 lbs/hr) * (22.5 hrs/day) =		8.81 lbs/day

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.0001 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0001 lbs/ton) * (725 tons/hr) =		0.073 lbs/hr
	(0.073 lbs/hr) * (22.5 hrs/day) =		1.63 lbs/day

Pegson 1300 Cone Crusher [SCC 3-05-020-02]

Process Rate: 725 tons/hour
Operating Hours: 22.5 hours/day

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.0012 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0012 lbs/ton) * (725 tons/hr) =		0.87 lbs/hr
	(0.87 lbs/hr) * (22.5 hrs/day) =		19.58 lbs/day

PM_{10} Emissions (controlled):

Emission Factor	0.00054 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00054 lbs/ton) * (725 tons/hr) =		0.39 lbs/hr
	(0.39 lbs/hr) * (22.5 hrs/day) =		8.81 lbs/day

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.0001 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0001 lbs/ton) * (725 tons/hr) =		0.073 lbs/hr
	(0.073 lbs/hr) * (22.5 hrs/day) =		1.63 lbs/day

Nordberg HP400 Cone Crusher [SCC 3-05-020-02]

Process Rate: 725 tons/hour
Operating Hours: 22.5 hours/day

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.0012 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0012 lbs/ton) * (725 tons/hr) =		0.87 lbs/hr
	(0.87 lbs/hr) * (22.5 hrs/day) =		19.58 lbs/day

PM_{10} Emissions (controlled):

Emission Factor	0.00054 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00054 lbs/ton) * (725 tons/hr) =		0.39 lbs/hr
	(0.39 lbs/hr) * (22.5 hrs/day) =		8.81 lbs/day

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.0001 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0001 lbs/ton) * (725 tons/hr) =		0.073 lbs/hr
	(0.073 lbs/hr) * (22.5 hrs/day) =		1.63 lbs/day

ISC Impactor 77 [SCC 3-05-020-03]

Process Rate: 725 tons/hour
Operating Hours: 22.5 hours/day

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.0012 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0012 lbs/ton) * (725 tons/hr) =		0.87 lbs/hr
	(0.87 lbs/hr) * (22.5 hrs/day) =		19.58 lbs/day

PM_{10} Emissions (controlled):

Emission Factor	0.00054 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00054 lbs/ton) * (725 tons/hr) =		0.39 lbs/hr
	(0.3915 lbs/hr) * (22.5 hrs/day) =		8.81 lbs/day

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.0001 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0001 lbs/ton) * (725 tons/hr) =		0.073 lbs/hr
	(0.0725 lbs/hr) * (22.5 hrs/day) =		1.63 lbs/day

Powerscreen 5'x16' 2 Deck Warrior [SCC 3-05-020-02]

Process Rate: 725 tons/hour
Operating Hours: 22.5 hours/day

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.0022 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0022 lbs/ton) * (725 tons/hr) =		1.60 lbs/hr
	(1.60 lbs/hr) * (22.5 hrs/day) =		35.89 lbs/day

PM_{10} Emissions (controlled):

Emission Factor	0.00074 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00074 lbs/ton) * (725 tons/hr) =		0.54 lbs/hr
	(0.54 lbs/hr) * (22.5 hrs/day) =		12.07 lbs/day

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.00005 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]

Calculations	(0.00005 lbs/ton) * (725 tons/hr) =		0.036 lbs/hr
	(0.036 lbs/hr) * (22.5 hrs/day) =		0.82 lbs/day

Powerscreen 5'x16' 2 Deck Chieftain [SCC 3-05-020-02]

Process Rate: 725 tons/hour
Operating Hours: 22.5 hours/day

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.0022 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0022 lbs/ton) * (725 tons/hr) =		1.60 lbs/hr
	(1.60 lbs/hr) * (22.5 hrs/day) =		35.89 lbs/day

PM_{10} Emissions (controlled):

Emission Factor	0.00074 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00074 lbs/ton) * (725 tons/hr) =		0.54 lbs/hr
	(0.54 lbs/hr) * (22.5 hrs/day) =		12.07 lbs/day

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.00005 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00005 lbs/ton) * (725 tons/hr) =		0.036 lbs/hr
	(0.036 lbs/hr) * (22.5 hrs/day) =		0.82 lbs/day

JCI Deck Screen 8' x 20' 3 Deck [SCC 3-05-020-02]

Process Rate: 725 tons/hour
Operating Hours: 22.5 hours/day

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.0022 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.0022 lbs/ton) * (725 tons/hr) =		1.60 lbs/hr
	(1.60 lbs/hr) * (22.5 hrs/day) =		35.89 lbs/day

PM_{10} Emissions (controlled):

Emission Factor	0.00074 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00074 lbs/ton) * (725 tons/hr) =		0.54 lbs/hr
	(0.54 lbs/hr) * (22.5 hrs/day) =		12.07 lbs/day

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.00005 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00005 lbs/ton) * (725 tons/hr) =		0.036 lbs/hr
	(0.036 lbs/hr) * (22.5 hrs/day) =		0.82 lbs/day

Material Handling:

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

Process Rate: 2900 tons/hour [Combined Crushing Capacity]

Operating Hours: 22.5 hours/day

Particulate Emissions:

PM Emissions:

Emission Factor	0.00016 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00016 lbs/ton) * (2900 tons/hr) =		0.46 lbs/hr
	(0.46 lbs/hr) * (22.5 hrs/day) =		10.44 lbs/day

PM_{10} Emissions:

Emission Factor	0.00016 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00016 lbs/ton) * (2900 tons/hr) =		0.46 lbs/hr
	(0.46 lbs/hr) * (22.5 hrs/day) =		10.44 lbs/day

$PM_{2.5}$ Emissions:

Emission Factor	0.00016 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00016 lbs/ton) * (2900 tons/hr) =		0.46 lbs/hr
	(0.46 lbs/hr) * (22.5 hrs/day) =		10.44 lbs/day

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

Process Rate: 275 tons/hour
Operating Hours: 22.5 hours/day
Total Transfers: 14 Transfers [Based on Process Flow Diagram]

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.00014 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00014 lbs/ton) * (275 tons/hr) * (14 Transfers) =		0.54 lbs/hr
	(0.54 lbs/hr) * (22.5 hrs/day) =		12.13 lbs/day

PM_{10} Emissions (controlled):

Emission Factor	0.000046 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.000046 lbs/ton) * (275 tons/hr) * (14 Transfers) =		0.18 lbs/hr
	(0.18 lbs/hr) * (22.5 hrs/day) =		3.98 lbs/day

$PM_{2.5}$ Emissions(controlled):

Emission Factor	0.000013 lbs/ton processed	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.000013 lbs/ton) * (275 tons/hr) * (14 Transfers) =		0.050 lbs/hr
	(0.050 lbs/hr) * (22.5 hrs/day) =		1.13 lbs/day

Storage Pile Load-In & Load-Out

Process Rate: 5075 tons/hour [4 Crushers & 3 Screens @ 725 TPH]
Operating Hours: 22.5 hours/day
Pile Transfers: 2 [Initial Pile Formation → Pile Load-Out to Trucks]

Particulate Emissions:

Emission Factor $EF = k\ (0.0032) * [\ (U/5)^{\wedge 1.3} /\ (M / 2)^{\wedge 1.4}\ ]$ [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) * (5075 tons/hr) * (2 pile transfers) =	39.02	lbs/hr
	(39.02 lbs/hr) * (22.5 hours/day) =	877.99	lbs/day

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) * (5075 tons/hr) * (2 piles) =	18.46	lbs/hr
	(18.46 lbs/hr) * (22.5 hours/day) =	415.27	lbs/day

$PM_{2.5}$ 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) * (5075 tons/hr) * (2 piles) =	2.79	lbs/hr
	(2.79 lbs/hr) * (22.5 hours/day) =	62.88	lbs/day

Diesel Engine Emissions:

Primary Generator Set: 1999 Caterpillar 3406C 475 hp [Tier 1]

Engine Rating:	475	hp
Fuel Input:	3.33	MMBtu/hr
	24.3	gallons/hour [Estimated]
Operating Hours:	22.5	hours/day

Particulate Emissions:

PM Emissions:

Emission Factor	0.4 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(0.4 lb/hp-hr) * (475 hp) * (0.002205 lb/gram) =		0.42 lbs/hr
	(0.42 lbs/hr) * (22.5 hours/day) =		9.43 lbs/day

PM_{10} Emissions:

Emission Factor	0.4 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(0.4 lb/hp-hr) * (475 hp) * (0.002205 lb/gram) =		0.42 lbs/hr
	(0.42 lbs/hr) * (22.5 hours/day) =		9.43 lbs/day

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0479 lb/MMBtu) * (3.33 MMBtu/hr) =		0.16 lbs/hr
	(0.16 lbs/hr) * (22.5 hours/day) =		3.58 lbs/day

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0077 lb/MMBtu) * (3.33 MMBtu/hr) =		0.03 lbs/hr
	(0.03 lbs/hr) * (22.5 hours/day) =		0.58 lbs/day

CO Emissions:

Emission Factor	8.5 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(8.5 lb/hp-hr) * (475 hp) * (0.002205 lb/gram) =		8.90 lbs/hr
	(8.90 lbs/hr) * (22.5 hours/day) =		200.31 lbs/day

NOx Emissions:

Emission Factor	6.9 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(6.9 lb/hp-hr) * (475 hp) * (0.002205 lb/gram) =		7.23 lbs/hr
	(7.23 lbs/hr) * (22.5 hours/day) =		162.60 lbs/day

SO_2 Emissions:

Emission Factor	0.00205 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0021 lb/hp-hr) * (475 hp) =		0.97 lbs/hr
	(0.97 lbs/hr) * (22.5 hours/day) =		21.91 lbs/day

VOC Emissions:

Emission Factor	0.002514 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0025 lb/hp-hr) * (475 hp) =		1.19 lbs/hr
	(1.19 lbs/hr) * (22.5 hours/day) =		26.87 lbs/day

Secondary Diesel Generator Set: 2001 John Deere 4045TF150 90 hp [Tier 1]

Engine Rating:	90	hp
Fuel Input:	0.63	MMBtu/hr
	4.6	gallons/hour [Estimated]
Operating Hours:	22.5	hours/day

Particulate Emissions:

PM Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (90 hp) =		0.20 lbs/hr
	(0.20 lbs/hr) * (22.5 hours/day) =		4.46 lbs/day

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (90 hp) =		0.20 lbs/hr
	(0.20 lbs/hr) * (22.5 hours/day) =		4.46 lbs/day

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0479 lb/MMBtu) * (0.63 MMBtu/hr) =		0.03 lbs/hr
	(0.03 lbs/hr) * (22.5 hours/day) =		0.68 lbs/day

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0077 lb/MMBtu) * (0.63 MMBtu/hr) =		0.005 lbs/hr
	(0.00 lbs/hr) * (22.5 hours/day) =		0.11 lbs/day

CO Emissions:

Emission Factor	0.00668 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.00668 lb/hp-hr) * (90 hp) =		0.60 lbs/hr
	(0.60 lbs/hr) * (22.5 hours/day) =		13.53 lbs/day

NOx Emissions:

Emission Factor	6.9 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(6.9 lb/hp-hr) * (90 hp) * (0.002205 lbs/gram) =		1.37 lbs/hr
	(1.37 lbs/hr) * (22.5 hours/day) =		30.81 lbs/day

SO_2 Emissions:

Emission Factor	0.00205 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0021 lb/hp-hr) * (90 hp) =		0.18 lbs/hr
	(0.18 lbs/hr) * (22.5 hours/day) =		4.15 lbs/day

VOC Emissions:

Emission Factor	0.002514 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0025 lb/hp-hr) * (90 hp) =		0.23 lbs/hr
	(0.23 lbs/hr) * (22.5 hours/day) =		5.09 lbs/day

JCI Fast Track Diesel Engine: 2007 Cummins 8.3 183 hp [Tier 3]

Engine Rating:	245	hp
Fuel Input:	1.72	MMBtu/hr
	12.5	gallons/hour [Estimated]
Operating Hours:	22.5	hours/day

Particulate Emissions:

PM Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (245 hp) =		0.54 lbs/hr
	(0.54 lbs/hr) * (22.5 hours/day) =		12.13 lbs/day

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (245 hp) =		0.54 lbs/hr
	(0.54 lbs/hr) * (22.5 hours/day) =		12.13 lbs/day

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0479 lb/MMBtu) * (1.72 MMBtu/hr) =		0.08 lbs/hr
	(0.08 lbs/hr) * (22.5 hours/day) =		1.85 lbs/day

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0077 lb/MMBtu) * (1.72 MMBtu/hr) =		0.01 lbs/hr
	(0.01 lbs/hr) * (22.5 hours/day) =		0.30 lbs/day

CO Emissions:

Emission Factor	0.00668 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.00668 lb/hp-hr) * (245 hp) =		1.64 lbs/hr
	(1.64 lbs/hr) * (22.5 hours/day) =		36.82 lbs/day

NOx Emissions:

Emission Factor	2.8 g/bhp-hr	[EPA-420-R-10-018 NR-009d - Table 8, 07/10]	
Calculations	(2.8 lb/hp-hr) * (245 hp) * (0.002205 lb/gram) =		1.51 lbs/hr
	(1.51 lbs/hr) * (22.5 hours/day) =		34.03 lbs/day

SO_2 Emissions:

Emission Factor	0.00205 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0021 lb/hp-hr) * (245 hp) =		0.50 lbs/hr
	(0.50 lbs/hr) * (22.5 hours/day) =		11.30 lbs/day

VOC Emissions:

Emission Factor	0.002514 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0025 lb/hp-hr) * (245 hp) =		0.62 lbs/hr
	(0.62 lbs/hr) * (22.5 hours/day) =		13.86 lbs/day

Powerscreen Warrior Diesel Engine: 2009 Caterpillar C-4.4 92.2 [Tier 3]

Engine Rating:	92.2	hp
Fuel Input:	0.65	MMBtu/hr
	4.7	gallons/hour [Estimated]
Operating Hours:	22.5	hours/day

Particulate Emissions:

PM Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (92.2 hp) =		0.20 lbs/hr
	(0.20 lbs/hr) * (22.5 hours/day) =		4.56 lbs/day

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (92.2 hp) =		0.20 lbs/hr
	(0.20 lbs/hr) * (22.5 hrs/day) =		4.56 lbs/day

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0479 lb/MMBtu) * (0.65 MMBtu/hr) =		0.03 lbs/hr
	(0.03 lbs/hr) * (22.5 hrs/day) =		0.70 lbs/day

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0077 lb/MMBtu) * (0.65 MMBtu/hr) =		0.005 lbs/hr
	(0.00 lbs/hr) * (22.5 hrs/day) =		0.11 lbs/day

CO Emissions:

Emission Factor	3.7 g/bhp-hr	[40 CFR 89.112 - Table 1]

Calculations	(3.7 lb/hp-hr) * (92.2 hp) * (0.002205 lb/gram) =		0.75 lbs/hr
	(0.75 lbs/hr) * (22.5 hrs/day) =		16.92 lbs/day

NOx Emissions:

Emission Factor	3.3 g/bhp-hr	[EPA-420-R-10-018 NR-009d - Table 8, 07/10]	
Calculations	(3.3 lb/hp-hr) * (92.2 hp) * (0.002205 lb/gram) =		0.67 lbs/hr
	(0.67 lbs/hr) * (22.5 hrs/day) =		15.10 lbs/day

SO_2 Emissions:

Emission Factor	0.00205 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0021 lb/hp-hr) * (92.2 hp) =		0.19 lbs/hr
	(0.19 lbs/hr) * (22.5 hrs/day) =		4.25 lbs/day

VOC Emissions:

Emission Factor	0.002514 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0025 lb/hp-hr) * (92.2 hp) =		0.23 lbs/hr
	(0.23 lbs/hr) * (22.5 hrs/day) =		5.22 lbs/day

Pegson 1300 Diesel Engine: 2004 Caterpillar C-12 425 hp [Tier 2]

Engine Rating:	425	hp
Fuel Input:	2.98	MMBtu/hr
	21.7	gallons/hour [Estimated]
Operating Hours:	22.5	hours/day

Particulate Emissions:

PM Emissions:

Emission Factor	0.15 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(0.15 lb/hp-hr) * (425 hp) * (0.002205 lb/gram) =		0.14 lbs/hr
	(0.14 lbs/hr) * (22.5 hours/day) =		3.16 lbs/day

PM_{10} Emissions:

Emission Factor	0.15 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(0.15 lb/hp-hr) * (425 hp) * (0.002205 lb/gram) =		0.14 lbs/hr
	(0.14 lbs/hr) * (0.15 hours/day) =		0.02 lbs/day

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0479 lb/MMBtu) * (2.98 MMBtu/hr) =		0.14 lbs/hr
	(0.14 lbs/hr) * (0.15 hours/day) =		0.02 lbs/day

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0077 lb/MMBtu) * (2.98 MMBtu/hr) =		0.02 lbs/hr
	(0.02 lbs/hr) * (0.0479 hours/day) =		0.001 lbs/day

CO Emissions:

Emission Factor	2.6 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(2.6 lb/hp-hr) * (425 hp) * (0.002205 lb/gram) =		2.44 lbs/hr

	(2.44 lbs/hr) * (0.0077 hours/day) =		0.02 lbs/day

NOx Emissions:

Emission Factor	4.5 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(4.5 lb/hp-hr) * (425 hp) * (0.002205 lb/gram) =		4.22 lbs/hr
	(4.22 lbs/hr) * (2.6 hours/day) =		10.96 lbs/day

SO_2 Emissions:

Emission Factor	0.00205 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0021 lb/hp-hr) * (425 hp) =		0.87 lbs/hr
	(0.87 lbs/hr) * (4.5 hours/day) =		3.92 lbs/day

VOC Emissions:

Emission Factor	0.002514 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0025 lb/hp-hr) * (425 hp) =		1.07 lbs/hr
	(1.07 lbs/hr) * (0.00205 hours/day) =		0.002 lbs/day

Powerscreen Chieftain Diesel Engine: 2003 Deutz 1012-C 79.1 hp [Tier 1]

Engine Rating:	79.1	hp
Fuel Input:	0.55	MMBtu/hr
	4.0	gallons/hour [Estimated]
Operating Hours:	22.5	hours/day

Particulate Emissions:

PM Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (79.1 hp) =		0.17 lbs/hr
	(0.17 lbs/hr) * (hours/day) =		3.92 lbs/day

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (79.1 hp) =		0.17 lbs/hr
	(0.17 lbs/hr) * (22.5 hours/day) =		0.0004 lbs/day

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0479 lb/MMBtu) * (0.55 MMBtu/hr) =		0.03 lbs/hr
	(0.03 lbs/hr) * (0.0022 hours/day) =		0.0001 lbs/day

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0077 lb/MMBtu) * (0.55 MMBtu/hr) =		0.004 lbs/hr
	(0.00 lbs/hr) * (0.0022 hours/day) =		0.0002 lbs/day

CO Emissions:

Emission Factor	0.00668 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.00668 lb/hp-hr) * (79.1 hp) =		0.53 lbs/hr
	(0.53 lbs/hr) * (0.0479 hours/day) =		0.004 lbs/day

NOx Emissions:

Emission Factor	6.9 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(6.9 lb/hp-hr) * (79.1 hp) * (0.002205 lb/gram) =		1.20 lbs/hr
	(1.20 lbs/hr) * (0.0077 hours/day) =		0.01 lbs/day

SO_2 Emissions:

Emission Factor	0.00205 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0021 lb/hp-hr) * (79.1 hp) =		0.16 lbs/hr
	(0.16 lbs/hr) * (0.00668 hours/day) =		1.12 lbs/day

VOC Emissions:

Emission Factor	0.002514 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0025 lb/hp-hr) * (79.1 hp) =		0.20 lbs/hr
	(0.20 lbs/hr) * (6.9 hours/day) =		0.0004 lbs/day

Powerscreen Conveyor Diesel Engine: 2007 Cummins B3.3 85 hp [Tier 1]

Engine Rating:	85	hp
Fuel Input:	0.60	MMBtu/hr
	4.3	gallons/hour [Estimated]
Operating Hours:	22.5	hours/day

Particulate Emissions:

PM Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (85 hp) =		0.19 lbs/hr
	(0.19 lbs/hr) * (22.5 hours/day) =		4.21 lbs/day

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (85 hp) =		0.19 lbs/hr
	(0.19 lbs/hr) * (0.0022 hours/day) =		0.0004 lbs/day

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0479 lb/MMBtu) * (0.60 MMBtu/hr) =		0.03 lbs/hr
	(0.03 lbs/hr) * (0.0022 hours/day) =		0.0001 lbs/day

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu	[AP-42 Table 3.4-2, 10/96]	
Calculations	(0.0077 lb/MMBtu) * (0.60 MMBtu/hr) =		0.005 lbs/hr
	(0.00 lbs/hr) * (0.0479 hours/day) =		0.0002 lbs/day

CO Emissions:

Emission Factor	0.00668 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.00668 lb/hp-hr) * (85 hp) =		0.57 lbs/hr
	(0.57 lbs/hr) * (0.0077 hours/day) =		0.004 lbs/day

NOx Emissions:

Emission Factor	6.900 g/bhp-hr	[40 CFR 89.112 - Table 1]	
Calculations	(6.9 lb/hp-hr) * (85 hp) * (0.002205 lb/gram) =		1.29 lbs/hr
	(1.29 lbs/hr) * (0.00668 hours/day) =		0.01 lbs/day

SO_2 Emissions:

Emission Factor	0.00205 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0021 lb/hp-hr) * (85 hp) =		0.17 lbs/hr
	(0.17 lbs/hr) * (6.9 hours/day) =		1.20 lbs/day

VOC Emissions:

Emission Factor	0.002514 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0025 lb/hp-hr) * (85 hp) =		0.21 lbs/hr
	(0.21 lbs/hr) * (0.00205 hours/day) =		0.0004 lbs/day

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%

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 (controlled)

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 exceedance 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 #4602-02 and Addendum #2 are for a portable crushing/screening plant that will potentially operate at sites in or within 10 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 operate on an intermittent and temporary basis and any effects on air quality will be minor and short-lived.

VI. Air Quality Impacts

MAQP #4602-02 and Addendum #2 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.

Addendum #2 will cover the operations of this portable crushing/screening plant, while operating in or within 10 km of the Libby or Thompson Falls PM_{10} nonattainment areas during the summer months.

VII. Taking or Damaging Analysis

As required by 2-10-101 through 105, MCA, the Department conducted a private property taking and damaging assessment (see Section VIII of the Permit Analysis for MAQP #4602-02) and determined there are no taking or damaging implications.

VIII. Environmental Assessment

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

Analysis prepared by: D. Kuenzli

Date: September 14, 2011

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air Resources Management Bureau
P.O. Box 200901, Helena, MT 59620
(406) 444-3490

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Peak Sand and Gravel
P.O. Box 405
Sandpoint, ID, 83864

Montana Air Quality Permit Number (MAQP): 4602-02

Preliminary Determination Issued: October 5, 2011
Department Decision Issued: November 10, 2011
Permit Final: November 26, 2011

1. *Legal Description of Site*: Peak proposes to operate a portable crushing facility, which will initially be located in the NE ¼ of the NE ¼ of Section 21, Township 19 North, Range 30 East, Mineral County, Montana. However, MAQP #4602-02 applies while operating at any location in Montana, except those areas having a Department-approved permitting program, areas considered tribal lands, or areas in or within 10 kilometers (km) of certain PM_{10} nonattainment areas. *A Missoula County air quality permit will be required for locations within Missoula County, Montana*. Addendum #2 will apply for locations in or within 10 km of certain PM_{10} nonattainment areas.

2. *Description of Project*: The Department received a permit application from Peak for the operation of a portable crushing facility with a combined maximum rated design process rate of 2,900 tons per hour (TPH) of crushing capacity and 2,175 TPH of screening capacity. The majority of the proposed mineral processing equipment utilized by Peak are self-propelled track mounted units which do not require auxiliary power. Two diesel-fired engine generator sets are provided to generate supplemental power to the project site for powering electric crushers, screeners, and material handling equipment. The diesel generator sets have a combined maximum design capacity of 565 horsepower (hp).

3. *Objectives of Project*: The object of the project would be to produce business and revenue for the company through the sale and use of aggregate. The issuance of MAQP #4602-02 would allow Peak to operate the permitted equipment at various locations throughout Montana (as described above), including the proposed initial site location.

4. *Alternatives Considered*: In addition to the proposed action, the Department considered the "no-action" alternative. The "no-action" alternative would deny issuance of the MAQP to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because Peak demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no-action" alternative was eliminated from further consideration.

5. *A Listing of Mitigation, Stipulations, and Other Controls*: A listing of the enforceable permit conditions and a permit analysis, including a BACT analysis, would be contained in MAQP #4602-02.

6. *Regulatory Effects on Private Property*: The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined the permit conditions would be reasonably necessary to ensure compliance with applicable requirements and to demonstrate compliance with those requirements and would not unduly restrict private property rights.

7. *The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The "no action alternative" was discussed previously.*

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Terrestrial and Aquatic Life and Habitats			X			Yes
B	Water Quality, Quantity, and Distribution			X			Yes
C	Geology and Soil Quality, Stability and Moisture			X			Yes
D	Vegetation Cover, Quantity, and Quality			X			Yes
E	Aesthetics			X			Yes
F	Air Quality			X			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources			X			Yes
H	Demands on Environmental Resource of Water, Air and Energy			X			Yes
I	Historical and Archaeological Sites				X		Yes
J	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The following comments have been prepared by the Department.

A. Terrestrial and Aquatic Life and Habitats

This permitting action would be expected to have a minor effect on terrestrial and aquatic life and habitats, as the proposed project would affect an existing, industrial property that has already been disturbed. Furthermore, the air emissions would likely have only minor effects on terrestrial and aquatic life because facility emissions would be well dispersed in the area of the operations (see Section 7.F of this EA) and would have intermittent and seasonal operations. Therefore, only minor and temporary effects to terrestrial and aquatic life and habitat would be expected from the proposed project.

B. Water Quality, Quantity, and Distribution

Water would be required for dust suppression on the surrounding roadways and general facility area. This water use would be expected to only cause minor, if any, impacts to water resources because the facility is small and only a small volume of water would be required to be used. In addition, the facility would emit air pollutants, and corresponding deposition of pollutants would occur, as described in Section 7.F. of this EA. The site is in an existing open-cut pit where water runoff would be more readily controlled. However, the Department determined that, due to dispersion characteristics of pollutants and conditions that would be placed in MAQP #4602-02, any impacts from deposition of pollutants on water quality, quantity, and distribution expected would be minor.

C. Geology and Soil Quality, Stability, and Moisture

Only minor impacts from deposition of air pollutants on soils would likely result (as described in Section 7.F of this EA) and only minor amounts of water would be used for pollution control, and only as necessary, in controlling particulate emissions. Thus, only minimal water runoff would likely occur. Since only minor amounts of pollution would be expected and corresponding emissions would be widely dispersed before settling upon surrounding soils and vegetation (as described in Section 7.D of this EA), impacts would be minor. Therefore, any effects upon geology and soil quality, stability, and moisture from air pollutant emissions from equipment operations would likely be minor and short-lived.

D. Vegetation Cover, Quantity, and Quality

Only minor impacts would be expected to occur on vegetative cover, quality, and quantity because the facility would operate in an area where vegetation has been previously disturbed. During operations, the facility would likely be a relatively minor source of emissions and the pollutants widely dispersed (as described in Section 7.F of this EA); therefore, deposition on vegetation from the proposed project would expect to be minor. Also, due to limited water usage (as described in Section 7.B of this EA) and minimal associated soil disturbance from the application of water and water runoff (as described in Section 7.C of this EA), corresponding vegetative impacts would likely be minor.

E. Aesthetics

The crushing facility would be visible and would create noise while operating at the proposed site. However, Permit #4602-02 would include conditions to control emissions, including visible emissions, from the plant. The facility would be portable, would operate on an intermittent and seasonal basis, and would be a small industrial source. Therefore, any visual aesthetic impacts would be short-lived and are expected to be minor.

F. Air Quality

Air quality impacts from the proposed project would likely be minor because the facility would be relatively small and operate on an intermittent and temporary basis. MAQP #4602-02 includes conditions limiting the facility's opacity; require water and water spray bars be available on site and used to ensure compliance with opacity standards; and limit the facility's crushing production.

Further, the Department determined that this crushing facility would be a minor source of emissions as defined under the Title V Operating Permit Program because the source's potential to emit is limited to below the major source threshold level of 100 TPY for any regulated pollutant. Pollutant deposition from the facility would expect to be minimal because the pollutants emitted are be widely dispersed (from factors such as wind speed and wind direction) and exhibit minimal deposition on the surrounding area. Therefore, air quality impacts from operating the crushing facility in this area would be expected to be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

The Department, in an effort to assess any potential impacts to any unique endangered, fragile, or limited environmental resources in the initial proposed area of operation (NE ¼ NE ¼ of Section 21, Township 19 North, Range 30 East, Mineral County, Montana), contacted the Natural Resource Information System – Montana Natural Heritage Program. Search results concluded there are seven species of concern within the area. The search area, in this case, is defined by the section, township, and range of the proposed site, with an additional

one (1) mile buffer. The known species of concern include six vertebrate animals: the Western Toad (Sensitive), Westslope Cutthroat Trout (Sensitive), Gray Wolf (Sensitive), Fisher (Sensitive), Wolverine (Sensitive), and Canada Lynx (Threatened). The known species of concern also includes one invertebrate animal: the Humped Coin.

While these species may be found within the search area, these animals may have many miles of potential habitat. Specific effects of operating the crushing facility in this area would be minor since the facility is relatively small in size and located within the existing Haugan Pit. In addition the source will have only seasonal and intermittent operations in the area. Therefore, the Department determined that any effects upon these species would likely be minor and short-lived.

H. Demands on Environmental Resources of Water, Air, and Energy

Due to the relatively small size of the project, only small demands on environmental resources would likely be required for proper operation. Only small quantities of water are be required for dust suppression of particulate emissions being generated at the site. In addition, impacts to air resources would be expected to be minor because the source is a minor industrial source of emissions, with intermittent and seasonal operations, and because air pollutants generated by the facility would be widely dispersed as described in Section 7.F of this EA. Energy requirements would also be small, as the diesel engines would use small amounts of fuel. Overall, any impacts to water, air, and energy resources would likely be minor.

I. Historical and Archaeological Sites

The Department contacted the Montana Historical Society - State Historical Preservation Office (SHPO) in an effort to identify any historical and/or archaeological sites that may be present in the proposed initial location of the facility. Search results concluded that there are no previously recorded historical or archaeological resources of concern within the area proposed for initial operations. According to past correspondence from the Montana State Historic Preservation Office, there would be a low likelihood of adverse disturbance to any known archaeological or historic site given previous industrial disturbance to an area. Therefore, no impacts upon historical or archaeological sites would be expected as a result of operating the proposed crushing/screening plant.

Based on information received from the applicant, the proposed project sites have been previously disturbed in accordance with current mining permits held by the applicant.

J. Cumulative and Secondary Impacts

The operation of the crushing facility would likely cause minor cumulative and secondary impacts to the physical and biological aspects of the human environment because the facility would be limited in the amount of PM, PM_{10}, NOx, CO,VOC's, and SO_2 emissions allowed to be released. Emissions and noise generated from the equipment would likely result in only minor impacts to the area of operations because the operation of the crushing facility would be seasonal and temporary. The proposed project would be short-term in nature, and likely have minor cumulative effects upon resources within the area. These resources include water, terrestrial and aquatic life, soils, and vegetation. Overall, cumulative and secondary impacts to the physical and biological aspects of the human environment would likely be minor.

8. The following table summarizes the potential economic and social effects of the proposed project on the human environment. The "no-action" alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Social Structures and Mores				X		Yes
B	Cultural Uniqueness and Diversity				X		Yes
C	Local and State Tax Base and Tax Revenue			X			Yes
D	Agricultural or Industrial Production			X			Yes
E	Human Health			X			Yes
F	Access to and Quality of Recreational and Wilderness Activities				X		Yes
G	Quantity and Distribution of Employment				X		Yes
H	Distribution of Population				X		Yes
I	Demands for Government Services			X			Yes
J	Industrial and Commercial Activity			X			Yes
K	Locally Adopted Environmental Plans and Goals			X			Yes
L	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores

The operation of the crushing facility would expect to cause no disruption to the social structures and mores in the area because the source would be a minor industrial source of emissions and would only have temporary and intermittent operations. Further, the facility would be required to operate according to the conditions that would be placed in MAQP #4602-02, which would limit the effects to social structures and mores.

B. Cultural Uniqueness and Diversity

The cultural uniqueness and diversity of this area would not likely be impacted by the operation of the proposed crushing facility because the facility is a portable source, with seasonal and intermittent operations.

C. Local and State Tax Base and Tax Revenue

The operation of the crushing facility would likely have little, if any, impact on the local and state tax base and tax revenue because the facility would be a minor industrial source of emissions and would have seasonal and intermittent operations. The facility would require the use of only 4 employees. Thus, only minor impacts to the local and state tax base and revenue would be expected from the employees and facility production. Furthermore, the impacts to local tax base and revenue would be minor because the source would be portable and the money generated for taxes would be widespread.

D. Agricultural or Industrial Production

The operation of the crushing facility would have only a minor impact on local industrial production since the facility would be a minor source of air emissions. Because minimal deposition of air pollutants would occur on the surrounding land (as described in Section 7.F

of this EA), only minor and temporary effects on the surrounding vegetation (i.e. agricultural production) would occur. In addition, the facility operations would be small and temporary in nature and would be permitted with operational conditions and limitations that would minimize impacts upon surrounding vegetation, as described in Section 7.D of this EA.

E. Human Health

MAQP #4602-02 would incorporate conditions to ensure that the crushing facility would be operated in compliance with all applicable air quality rules and standards. These rules and standards are designed to be protective of human health. As described in Section 7.F. of this EA, the air emissions from this facility would be minimized by the use of water spray and other operational limits that would be required by MAQP #4602-02. Also, the facility would be operating on a temporary basis and pollutants would disperse from the ventilation of emissions at this site (see Section 7.F of this EA). Therefore, only minor impacts would be expected on human health from the proposed project.

F. Access to and Quality of Recreational and Wilderness Activities

Based on information received from Peak, no recreational activities or wilderness areas are near the proposed project site. Therefore, no impacts to the access to and quality of recreational and wilderness activities are anticipated.

G. Quantity and Distribution of Employment

The portable crushing/screening operation would only require 4 employees to operate and would have seasonal and intermittent operations. No individuals would be expected to permanently relocate to this area of operation as a result of operating the crushing/screening facility. Therefore, no effects upon the quantity and distribution of employment in this area would be expected.

H. Distribution of Population

The portable crushing/screening operation is a portable industrial facility that would only require 4 employees to operate. No individuals would be expected to permanently relocate to this area of operation as a result of operating the crushing/screening facility. Therefore, the crushing/screening facility would not likely impact the normal population distribution in the initial area of operation or any future operating site.

I. Demands of Government Services

Minor increases may be seen in traffic on existing roadways in the area while the crushing facility is being operated. In addition, government services would be required for acquiring the appropriate permits for the proposed project and to verify compliance with the permits that would be issued. However, demands for government services would expect to be minor.

J. Industrial and Commercial Activity

The operation of the crushing facility would represent only a minor increase in the industrial activity in the proposed area of operation because the source would be a relatively small industrial source that would be portable and temporary in nature. No additional industrial or commercial activity would be expected as a result of the proposed operation.

K. Locally Adopted Environmental Plans and Goals

Peak would be allowed, by MAQP #4602-02, to operate in areas designated by EPA as attainment or unclassified for ambient air quality. Addendum #2 applies will to operate in or within 10 km of a PM_{10} nonattainment area during the summer season. MAQP #4602-02 contains operational restrictions for protecting air quality and to keep facility emissions in compliance with any applicable ambient air quality standards, as a locally adopted environmental plan or goal for operating at this proposed site. Because the proposed crushing facility would be a portable source and would likely have intermittent and seasonal operations, any impacts from the project would be expected to be minor and short-lived.

L. Cumulative and Secondary Impacts

The operation of the crushing facility would cause only minor cumulative and secondary impacts to the social and economic aspects of the human environment in the immediate area of operation because the source would be a portable and temporary source. Minor increases in traffic would have minor effects on local traffic in the immediate area. Because the source is relatively small and temporary, only minor economic impacts to the local economy would be expected from operating the facility. Further, this facility may be operated in conjunction with other equipment owned and operated by Peak, but any cumulative impacts upon the social and economic aspects of the human environment would likely be minor and short-lived. Thus, only minor and temporary cumulative effects would be expected to the local economy.

Recommendation: No Environmental Impact Statement (EIS) is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permitting action is for the operation of a portable non-metallic mineral processing facility, MAQP #4602-02 and Addendum #2 provides conditions and limitations to ensure the facility would operate in compliance with all applicable rules and regulations. In addition, there are no significant impacts associated with this proposal.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

Individuals or groups contributing to this EA: Department of Environmental Quality – Air Resources Management Bureau, Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

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