

AIR QUALITY PERMIT

Issued To: Granite Concrete Company, Inc. Permit #3020-01
525 Spencer Road Extension Application Complete: 03/16/06
Libby, MT 59923 Preliminary Determination Issued: 04/05/06
Department Decision Issued: 04/21/06
Permit Final: 05/09/06
AFS #777-3020

An air quality permit, with conditions, is hereby granted to Granite Concrete Company, Inc. (Granite), pursuant to Sections 75-2-204 and 211, Montana Code Annotated (MCA), as amended, and the Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

Section I: Permitted Facilities

A. Plant Location

Granite operates a portable truck mix concrete batch plant and a portable crushing/screening facility. Permit #3020-01 would apply while operating at any location in Montana, except within those areas having a Department of Environmental Quality (Department)-approved permitting program or those areas considered tribal lands. *A Missoula County air quality permit will be required for locations within Missoula County, Montana.* Addendum #2 applies to the Granite facility while operating at any location in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀) nonattainment areas during the summer months (April 1 – September 30) and at sites approved by the Department during the winter months (October 1 – March 31), including the initial site location, the E ½ of the SW ¼ of Section 14, Township 30 North, Range 31 West, in Lincoln County, Montana. A complete list of the permitted equipment is contained in Section I.A of the permit analysis.

B. Current Permit Action

On February 23, 2006, the Department received a request from Granite for a modification to Permit #3020-00. The modification requested to add a portable concrete batch plant. Permit #3020-01 was written to include a portable concrete batch plant along with Addendum #2 that allows Granite to operate at any location in or within 10 km of certain PM₁₀ nonattainment areas during the summer months (April 1 – September 30) and at sites approved by the Department during the winter months (October 1 – March 31), including the initial site location, the E ½ of the SW ¼ of Section 14, Township 30 North, Range 31 West, in Lincoln County, Montana. Also, the permit was updated to reflect the current permit language and rule references used by the Department.

Section II: Limitations and Conditions

A. Operational Limitations and Conditions

1. Granite shall install, operate, and maintain a fabric filter dust collector and a rubber boot load-out spout as specified in their Montana Air Quality Permit and all supporting documentation (ARM 17.8.752):
 - a. Granite shall install, operate, and maintain a fabric filter dust collector on every cement and cement supplement silo ventilation opening; and

- b. Granite shall install, operate, and maintain a rubber boot load-out spout on every product loadout opening on the concrete plant, where cementations and aggregate materials are transferred for mixing.
2. Granite shall not cause or authorize to be discharged into the atmosphere from the ready mix plant:
 - a. Any vent emissions that exhibit an opacity of 20% or greater averaged over six consecutive minutes (ARM 17.8.304 and ARM 17.8.752).
 - b. Any fugitive emissions from the source, or from any material transfer operations, including, but not limited to, truck loading or unloading, which exhibit an opacity of 20% or greater averaged over six consecutive minutes (ARM 17.8.308 and ARM 17.8.752).
3. Total concrete production shall be limited to 1,314,000 cubic yards of concrete during any rolling 12-month time period (ARM 17.8.749).
4. Granite shall not cause or authorize to be discharged into the atmosphere from any Standards of Performance for New Stationary Sources (NSPS) affected crusher, any visible emissions that exhibit an opacity of 15% or greater averaged over six consecutive minutes (ARM 17.8.340, ARM 17.8.752, and 40 CFR Part 60, Subpart OOO).
5. Granite shall not cause or authorize to be discharged into the atmosphere from any other NSPS affected equipment, such as screens or conveyor transfers, any visible emissions that exhibit an opacity of 10% or greater averaged over six consecutive minutes (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart OOO).
6. Granite shall not cause or authorize to be discharged into the atmosphere, from any non-NSPS affected equipment, any visible emissions that exhibit an opacity of 20% or greater averaged over six consecutive minutes (ARM 17.8.308 and ARM 17.8.752).
7. Water and water 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.2, II.A.4, and II.A.5 (ARM 17.8.752).
8. Granite shall not cause or authorize to be discharged into the atmosphere from any street, road, or parking lot any visible fugitive emissions that exhibit an opacity of 20% or greater averaged over six consecutive minutes and must take reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308 and ARM 17.8.752).
9. Granite shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.8 (ARM 17.8.749).
10. Crusher production from the facility shall be limited to 1,243,920 tons during any rolling 12-month time period (ARM 17.8.749).

11. Granite shall not operate more than two crushers at any given time and the maximum combined rated design capacity of the crushers shall not exceed 142 tons per hour (TPH) (ARM 17.8.749).
12. Total combined screen production from the facility shall be limited to 621,960 tons during any rolling 12-month time period (ARM 17.8.749).
13. Granite shall not operate more than one screen unit at any given time and the maximum rated design capacity of the screen unit shall not exceed 71 TPH (ARM 17.8.749).
14. If the permitted equipment is used in conjunction with any other equipment owned or operated by Granite, at the same site, production shall be limited to correspond with an emission level that does not exceed 250 tons of emissions during any rolling 12-month time period. Any calculations used to establish production levels shall be approved by the Department (ARM 17.8.749).
15. Granite shall comply with all applicable standards and limitations, and the reporting, recordkeeping, testing, and notification requirements contained in 40 CFR 60, Subpart OOO (ARM 17.8.340 and 40 CFR 60, Subpart OOO).

B. Emissions Monitoring

1. Granite shall inspect the fabric filter dust collector and its vents, which are used for controlling emissions from the silo and weigh hopper, every six months of operation to ensure that each collector is operating at the optimum efficiency. Records of inspections, repairs, and maintenance shall be kept for a minimum of five years (ARM 17.8.749).
2. Granite shall maintain on-site records of inspections, repairs, and maintenance. All records compiled in accordance with this permit shall be maintained by Granite as a permanent business record for at least five years following the date of the measurement, shall be submitted to the Department upon request, and shall be available at the plant site for inspection by the Department (ARM 17.8.749).

C. Testing Requirements

1. Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup, an Environmental Protection Agency (EPA) Method 9 opacity test and/or other methods and procedures, as specified in 40 CFR Part 60.675, must be performed on any NSPS affected equipment to demonstrate compliance with the emissions limitations contained in Sections II.A.4 and II.A.5 (ARM 17.8.340, 40 CFR Part 60, Subpart A and 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).

D. Operational Reporting Requirements

1. If this portable concrete batch plant or crushing/screening plant are moved to another location, an Intent to Transfer Form must be sent to the Department. In

addition, 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 Intent to Transfer Form and 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 17.8.765).

2. Granite shall maintain on-site records showing daily hours of operation and daily production rates for the last 12-months. All records compiled in accordance with this permit shall be maintained by Granite as a permanent business record for at least five 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).
3. Granite shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the most recent emission inventory report and sources identified in Section I.A of 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 units as required by the Department. This information may be used for calculating operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

4. Granite shall notify the Department of any construction or improvement project conducted, pursuant to ARM 17.8.745, that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. The notice must be submitted to the Department, in writing, 10 days prior to start-up or use of the 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(1)(d) (ARM 17.8.745).
5. Granite shall document, by month, the amount of concrete produced. By the 25th day of each month, Granite shall calculate the total amount of concrete produced during the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.3. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).
6. Granite shall document, by month, the total crushing production for the facility. By the 25th day of each month, Granite shall calculate the total crushing production from the facility for the previous month. The monthly information will be used to verify 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. Granite shall document, by month, the total screening production for the facility. By the 25th day of each month, Granite shall calculate the total screening production from the facility for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.12. The information for each of the previous months shall be submitted

along with the annual emission inventory (ARM 17.8.749).

Section III: General Conditions

- A. Inspection - Granite shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver - The permit and all the terms, conditions, and matters stated herein shall be deemed accepted if Granite fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving Granite of the responsibility for complying with any applicable federal or Montana statute, rule or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).
- D. Enforcement - Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement as specified in Section 75-2-401 *et seq.*, MCA.
- E. Appeals - Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.
- F. Permit Inspection - As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by Department personnel at the location of the permitted source.
- G. Permit Fees - Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay of the annual operation fee by Granite may be grounds for revocation of this permit, as required by that Section and rules adopted thereunder by the Board.
- H. Construction Commencement - Construction must begin within three years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked.
- 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. Granite shall comply with the conditions contained in this permit while operating at any location in Montana, except within those areas having a Department-approved permitting program.

PERMIT ANALYSIS
Granite Concrete Company, Inc.
Permit Number 3020-01

I. Introduction/Process Description

A. Permitted Equipment

Granite Concrete Company, Inc. (Granite) owns and operates a portable truck mix concrete batch plant, which includes an electric powered 2006 Erie Strayer Silo and Batchers (maximum capacity of 150 cubic yards per hour (yd³/hr)), an electric powered 2006 Erie Strayer Tilt Mixer, an electric powered 2006 Erie Strayer Bin and Batchers, and associated equipment. A fabric filter dust collector controls particulate emissions from the cement silo. A rubber boot load-out spout controls particulate emissions from the cement batchers.

Granite also owns and operates a portable crushing/screening facility, which includes a 1945 Cedar Rapids Jaw Crusher (up to 71 tons per hour (TPH)), a 1958 Cone Crusher (up to 71 TPH), a 1996 2-deck screen (up to 71 TPH), and associated equipment.

B. Process Description

For a typical operational setup, stockpiles of sand and gravel for concrete production are stored on site. A loader transfers the sand and gravel from the stockpiles to a weight hopper and the sand and gravel is then conveyed into the batch plant. The cement silo transfers the cement into the batch plant where water is added. The sand, gravel, cement, and water are then loaded into mixing trucks where the materials are mixed together to form concrete. The concrete is then transferred to various construction operations.

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

C. Permit History

On August 25, 1998, Granite submitted a complete permit application to operate a portable crushing/screening facility consisting of a 1945 Cedar Rapids Jaw Crusher (up to 71 tons per hour (TPH)), a 1958 Cone Crusher (up to 71 TPH), a 1996 2-deck screen (up to 71 TPH), and associated equipment. The application was assigned **Permit #3020-00**. Also, **Addendum 1** to Permit #3020-00 was established.

D. Current Permit Action

On February 23, 2006, the Department received a request from Granite for a modification to Permit #3020-00. The modification requested to add a portable concrete batch plant. Permit #3020-01 was written to include a portable concrete batch plant along with Addendum #2 that allows Granite to operate at any location in or within 10 km of certain PM₁₀ nonattainment areas during the summer months (April 1 – September 30) and at sites approved by the Department during the winter months (October 1 – March 31), including the initial site location, the E ½ of the SW ¼ of Section 14, Township 30 North, Range 31 West, in Lincoln County, Montana. Also, the permit was updated to reflect the current permit language and rule references used by the Department. **Permit #3020-01** replaces Permit #3020-00 and **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 change to the permit.

II. Applicable Rules and Regulations

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

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

1. ARM 17.8.101 Definitions. This rule is a list of applicable definitions used in this subchapter, 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).

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

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than four hours.
5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

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

1. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
2. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
3. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
4. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
5. ARM 17.8.223 Ambient Air Quality Standard for PM₁₀

Granite 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 six 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, Granite shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.
3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause or authorize to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this section.
4. ARM 17.8.310 Particulate Matter, Industrial Processes. This rule requires that no person shall cause or allow to be discharged into the atmosphere particulate matter in excess of the amount set forth in this section.
5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this section.
6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank truck or trailer is equipped with a vapor loss control device as described in (1) of this rule.
7. ARM 17.8.340 Standards of Performance for New Stationary Sources. This rule incorporates, by reference, 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS). The owner or operator of any stationary source or modification, as defined and applied in 40 CFR Part 60, NSPS, shall comply with the standards and provisions of 40 CFR Part 60. Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants, indicates that NSPS requirements apply to crushing/screening facilities with capacities greater than 150 tons per hour and/or that were constructed after August 31, 1983. The Granite crushing facility has a capacity less than 150 tons per hour and was constructed before August 31, 1983; therefore, NSPS requirements do not apply to the crusher facility.

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

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that pro-rate the required fee amount.

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

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit alteration to construct, alter, or use any asphalt plant, crusher, or screen that has the Potential to Emit (PTE) greater than 15 tons per year of any pollutant. Granite has a PTE greater than 15 tons per year of total particulate matter (PM), particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀), 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. Granite submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. Granite submitted an affidavit of publication of public notice for the March 1, 2006, issue of *The Western News*, a newspaper of general circulation in the city of Libby in Lincoln County, as proof of compliance with the public notice requirements.
6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires

that the permits issued by 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 IV 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 Granite 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 altered 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 Granite, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).
13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.
14. ARM 17.8.765 Transfer of Permit. (1) This rule states that an air quality permit

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

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

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications-- Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

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

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

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any stationary source having:
 - a. PTE > 100 tons/year of any pollutant.
 - b. PTE > 10 tons/year of any one Hazardous Air Pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule, or
 - c. PTE > 70 tons/year of PM₁₀ in a serious PM₁₀ nonattainment area.
2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #3020-01 for the Granite facility, the following conclusions were made:
 - a. The facility's PTE is less than 100 tons/year for any pollutant.
 - b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 ton/year of all HAPs.
 - c. This source is not located in a serious PM₁₀ nonattainment area.
 - d. This facility is not subject to any current NESHAP standards.
 - e. The facility is currently subject to NSPS standards (40 CFR 60, Subpart A, General Provisions, and Subpart OOO, Non-Metallic Mineral

Processing Plants).

- f. This source is not a Title IV affected source nor a solid waste combustion unit.
- g. This source is not an EPA designated Title V source.

Based on these facts, the Department determined that this facility would be a minor source of emissions, as defined under the Title V Operating Permit Program. However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit, Granite will be required to obtain a Title V Operating Permit.

III. BACT Analysis

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

A. Area Source Fugitive Emissions

Two types of emissions controls are readily available and used for dust suppression of fugitive emissions at the site, fugitive emissions for the surrounding area of operations, and for equipment emissions from the crushing/screening operation. These two control methods are water and chemical dust suppressant. Chemical dust suppressant could be used for dust suppression on the area surrounding the crushing/screening operation and for emissions from the crushing/screening operation. However, because water is more readily available, is more cost effective, is equally effective as chemical dust suppressant, and is more environmentally friendly, water has been identified as the most appropriate method of pollution control of particulate emissions for the general plant area. In addition, water suppression has been required of recently permitted similar sources. However, Granite may use chemical dust suppressant to assist in controlling particulate emissions from the surrounding plant area where it would assist in reducing emissions of particulate matter.

Granite shall not cause or authorize to be discharged into the atmosphere from any non-NSPS affected equipment, any visible emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes. Granite shall not cause or authorize to be discharged into the atmosphere from any NSPS affected crusher, any visible emissions that exhibit an opacity of 15% or greater averaged over 6 consecutive minutes. Also, Granite shall not cause or authorize to be discharged into the atmosphere from any affected screen, any visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes. Granite must also take reasonable precautions to limit the fugitive emissions of airborne particulate matter from haul roads, access roads, parking areas, and the general area of operation. Granite 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 and reasonable precaution limitations. Granite may also use chemical dust suppression, in order to maintain compliance with emissions limitations in Section I.A of Permit #3020-01. The Department determined that using water spray bars, water, and chemical dust suppressant to maintain compliance with the opacity requirements and reasonable precaution limitations constitutes BACT for the crushing/screening operation.

B. Cement Fugitive Emissions

All visible emissions from any cement and cement supplement silo (or vent), truck loading or unloading operations, or any material transferring operations shall be limited to less than 20% opacity. Granite shall use a fabric filter dust collector for the cement silo and Granite shall use a rubber boot load-out spout on the cement batcher. The Department determined that using a fabric filter dust collector and a load-out spout to maintain compliance with the opacity limitations constitutes BACT for these sources.

IV. Emission Inventory

Source	Tons/Year					
	PM	PM ₁₀	NO _x	VOC	CO	SO _x
Crushers (up to 142 TPH)	1.56	0.74				
Screen (up to 71 TPH)	4.90	2.33				
Material Transfer	3.16	1.52				
Pile Forming	5.22	2.49				
Bulk Loading	3.92	1.87				
Aggregate Delivery to Ground Storage	2.11	1.01				
Sand Delivery to Ground Storage	0.49	0.16				
Aggregate Transfer to Conveyor	2.11	1.01				
Sand Transfer to Conveyor	0.49	0.16				
Aggregate Transfer to Elevated Storage	2.11	1.01				
Sand Transfer to Elevated Storage	0.49	0.16				
Cement Unloading to Elevated Storage Silo	0.02	0.01				
Cement Supplement Unloading to Elevated Storage Silo	0.01	0.00				
Weigh Hopper Loading of Sand/Aggregate	2.76	1.30				
Central Mix Loading of Cement/Supplement/Sand/Aggregate	19.53	6.92				
Haul Roads	2.74	1.23				
Total	51.62	21.92				

Note: A complete emissions inventory is included at the end of the permit.

V. Existing Air Quality

Permit #3020-01 is issued for the operation of a portable truck mix concrete batch plant and portable crushing/screening facility to be originally located at the E ½ of the SW ¼ of Section 14, Township 30 North, Range 31 West, in Lincoln County, Montana. This facility would be allowed to operate at any area designated as attainment or unclassified for all National Ambient Air Quality Standards (NAAQS); excluding those counties that have a Department-approved permitting program, those areas considered tribal lands, or those areas in or within 10 km of certain PM₁₀ nonattainment areas. *A Missoula County air quality permit will be required for locations within Missoula County, Montana.* Addendum #2 applies to the Granite facility while operating at any location in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀) nonattainment areas during the summer months (April 1 – September 30) and at sites approved by the Department during the winter months (October 1 – March 31), including the initial site location, the E ½ of the SW ¼ of Section 14, Township 30 North, Range 31 West, in Lincoln County, Montana.

VI. Air Quality Impacts

Based on the information provided and the conditions established in Permit #3020-01, the amount of controlled emissions generated by this facility will not exceed any set ambient air quality standards. Further, the limitations and conditions established in Addendum #2 would further reduce emissions in the nonattainment areas and would be protective of the ambient air quality standards. Also, this facility is a portable source that would operate on an intermittent and temporary basis, so any effects to air quality will be minor and short-lived. The conditions in Permit #3020-01 will be protective of air quality while Granite is operating at locations not located in or within 10 km of certain PM₁₀ nonattainment areas.

Addendum #2
Granite Concrete Company, Inc.
Permit #3020-01

An addendum to air quality Permit #3020-01 is issued to Granite Concrete Company, Inc. (Granite), pursuant to Sections 75-2-204 and 75-2-211 of the Montana Code Annotated (MCA), as amended, and the Administrative Rules of Montana (ARM) 17.8.765, as amended, for the following:

I. Permitted Equipment

Granite owns and operates a portable truck mix concrete batch plant, which includes an electric powered 2006 Erie Strayer Silo and Batcher (maximum capacity of 150 cubic yards per hour (yd³/hr)), an electric powered 2006 Erie Strayer Tilt Mixer, an electric powered 2006 Erie Strayer Bin and Batcher, and associated equipment. A fabric filter dust collector controls particulate emissions from the cement silo. A rubber boot load-out spout controls particulate emissions from the cement batcher.

Granite also owns and operates a portable crushing/screening facility, which includes a 1945 Cedar Rapids Jaw Crusher (up to 71 tons per hour (TPH)), a 1958 Cone Crusher (up to 71 TPH), a 1996 2-deck screen (up to 71 TPH), and associated equipment.

II. Seasonal and Site Restrictions

Addendum #2 applies to the Granite facility while operating at any location in or within 10 km of certain PM₁₀ nonattainment areas. Additionally, seasonal and site restrictions apply to the facility as follows:

- A. During the winter season (October 1-March 31) – the only location(s) in or within 10 km of certain PM₁₀ nonattainment area where Granite may operate is:
- E ½ of the SW ¼ of Section 14, Township 30 North, Range 31 West; and
 - Any other site that may be approved, in writing, by the Department of Environmental Quality (Department).
- B. During the summer season (April 1-September 30) – Granite may operate at any location in or within 10 km of the Butte, Columbia Falls, Libby, Kalispell, Thompson Falls, and Whitefish PM₁₀ nonattainment areas.
- C. Granite shall comply with the limitations and conditions contained in Addendum #2 to Permit #3020-01. 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 – **Winter Season (October 1 – March 31)**

1. Granite shall install, operate, and maintain a fabric filter dust collector and a rubber boot load-out spout as specified in their Montana Air Quality Permit and all supporting documentation (ARM 17.8.752):
 - a. Granite shall install, operate, and maintain a fabric filter dust collector on every cement and cement supplement silo ventilation opening; and
 - b. Granite shall install, operate, and maintain a rubber boot load-out spout

on every product loadout opening on the concrete plant, where cementations and aggregate materials are transferred for mixing.

2. Granite shall not cause or authorize to be discharged into the atmosphere from the concrete batch plant:
 - a. Any vent emissions that exhibit an opacity of 20% or greater averaged over six consecutive minutes (ARM 17.8.304 and ARM 17.8.752).
 - b. Any fugitive emissions from the source, or from any material transfer operations, including, but not limited to, truck loading or unloading, which exhibit an opacity of 20% or greater averaged over six consecutive minutes (ARM 17.8.308 and ARM 17.8.752).
3. Water spray bars must be available and operated, as necessary, on the crushers, screens, and all transfer points whenever the crushing/screening plant is operating (ARM 17.8.749).
4. All visible emissions from the crushing/screening plant may not exhibit an opacity of 10% or greater averaged over six consecutive minutes (ARM 17.8.749).
5. Granite shall not cause or authorize to be discharged into the atmosphere from any other equipment, such as transfer points, any visible emissions that exhibit an opacity of 10% or greater averaged over six consecutive minutes (ARM 17.8.749).
6. Granite 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 averaged over six consecutive minutes (ARM 17.8.749).
7. Granite shall treat all unpaved portions of the haul roads, 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).
8. Total concrete production from the concrete batch plant shall not exceed 2,460 yd³ during any rolling 24-hour time period (ARM 17.8.749).
9. Total combined crushing production from the two crushers shall be limited to 2,329 tons during any rolling 24-hour time period (ARM 17.8.749).
10. Total screening production from the screen unit shall be limited to 1,164 tons during any rolling 24-hour time period (ARM 17.8.749).

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

1. Granite shall install, operate, and maintain a fabric filter dust collector and a rubber boot load-out spout as specified in their Montana Air Quality Permit and all supporting documentation (ARM 17.8.752):
 - a. Granite shall install, operate, and maintain a fabric filter dust collector on every cement and cement supplement silo ventilation opening; and
 - b. Granite shall install, operate, and maintain a rubber boot load-out spout

on every product loadout opening on the concrete plant, where cementations and aggregate materials are transferred for mixing.

2. Granite shall not cause or authorize to be discharged into the atmosphere from the concrete batch plant:
 - a. Any vent emissions that exhibit an opacity of 20% or greater averaged over six consecutive minutes (ARM 17.8.304 and ARM 17.8.752).
 - b. Any fugitive emissions from the source, or from any material transfer operations, including, but not limited to, truck loading or unloading, which exhibit an opacity of 20% or greater averaged over six consecutive minutes (ARM 17.8.308 and ARM 17.8.752).
3. Water spray bars must be operated on the crushers, screens, and all transfer points whenever the crushing/screening plant is operating (ARM 17.8.749).
4. All visible emissions from the crushing/screening plant may not exhibit an opacity of 10% or greater averaged over six consecutive minutes (ARM 17.8.749).
5. Granite shall not cause or authorize to be discharged into the atmosphere from any other equipment, such as transfer points, any visible emissions that exhibit an opacity of 10% or greater averaged over six consecutive minutes (ARM 17.8.749).
6. Granite 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 averaged over six consecutive minutes (ARM 17.8.749).
7. Granite shall treat all unpaved portions of the haul roads, 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).
8. Total concrete production from the concrete batch plant shall not exceed 3,600 yd³ during any rolling 24-hour time period (ARM 17.8.749).
9. Total combined crushing production from the two crushers shall be limited to 3,408 tons during any rolling 24-hour time period (ARM 17.8.749).
10. Total screening production from the screen unit shall be limited to 1,704 tons during any rolling 24-hour time period (ARM 17.8.749).

C. Operational Reporting Requirements

1. Granite shall provide the Department with written notification of job completion within 10 working days of job completion (ARM 17.8.749).
2. Granite shall provide the Department with written notice of relocation of the permitted equipment within 15 working days before the physical transfer of the equipment (ARM 17.8.765).
3. Production information for the sites covered by this addendum must be submitted to

the Department with the annual emission inventory request or within 30 days of completion of the project. The information must include (ARM 17.8.749):

- a. Tons of material crushed at each site;
 - b. Tons of material screened by each screen at each site;
 - c. Tons of bulk material loaded at each site;
 - d. Daily hours of operation at each site;
 - e. Fugitive dust information consisting of a listing of all plant vehicles including the following for each vehicle type:
 - i. Number of vehicles;
 - ii. Vehicle type;
 - iii. Vehicle weight, loaded;
 - iv. Vehicle weight, unloaded;
 - v. Number of tires on vehicle;
 - vi. Average trip length;
 - vii. Number of trips per day per vehicle;
 - viii. Average vehicle speed;
 - ix. Area of activity; and
 - x. Vehicle fuel usage (gasoline or diesel) annual total.
 - f. Fugitive dust control for haul roads and general plant area:
 - i. Hours of operation of water trucks; and
 - ii. Application schedule for chemical dust suppressant, if applicable.
4. Granite shall document, by day, the total concrete production during the winter season. Granite shall sum the total concrete production during the previous 24 hours to verify compliance with the limitations in Section III.A.8. A written report of compliance verification and the emissions inventory shall be submitted to the Department annually. The report for the previous calendar year shall be submitted along with the annual emission inventory (ARM 17.8.749).
 5. Granite shall document, by day, the total concrete production during the summer season. Granite shall sum the combined total concrete production during the previous 24 hours to verify compliance with the limitations in Section III.B.8. A written report of compliance verification and the emissions inventory shall be submitted to the Department annually. The report for the previous calendar year shall be submitted along with the annual emission inventory (ARM 17.8.749).
 6. Granite shall document, by day, the total crushing production during the winter season. Granite shall sum the combined total crushing production during the previous 24 hours to verify compliance with the limitations in Section III.A.9. A written report of compliance verification and the emissions inventory shall be submitted to the Department annually. The report for the previous calendar year shall be submitted along with the annual emission inventory (ARM 17.8.749).
 7. Granite shall document, by day, the total crushing production during the summer

season. Granite shall sum the combined total crushing production during the previous 24 hours to verify compliance with the limitations in Section III.B.9. A written report of compliance verification and the emissions inventory shall be submitted to the Department annually. The report for the previous calendar year shall be submitted along with the annual emission inventory (ARM 17.8.749).

8. Granite shall document, by day, the total screening production during the winter season. Granite shall sum the total screening production during the previous 24 hours to verify compliance with the limitations in Section III.A.10. A written report of compliance verification and the emissions inventory shall be submitted to the Department annually. The report for the previous calendar year shall be submitted along with the annual emission inventory (ARM 17.8.749).
9. Granite shall document, by day, the total screening production during the summer season. Granite shall sum the total screening production during the previous 24 hours to verify compliance with the limitations in Section III.B.10. A written report of compliance verification and the emissions inventory shall be submitted to the Department annually. The report for the previous calendar year shall be submitted along with the annual emission inventory (ARM 17.8.749).

Addendum #2 Analysis
Granite Concrete Company, Inc.
Permit #3020-01

I. Permitted Equipment

Granite owns and operates a portable truck mix concrete batch plant, which includes an electric powered 2006 Erie Strayer Silo and Batchers (maximum capacity of 150 cubic yards per hour (yd³/hr)), an electric powered 2006 Erie Strayer Tilt Mixer, an electric powered 2006 Erie Strayer Bin and Batchers, and associated equipment. A fabric filter dust collector controls particulate emissions from the cement silo. A rubber boot load-out spout controls particulate emissions from the cement batchers.

Granite also owns and operates a portable crushing/screening facility, which includes a 1945 Cedar Rapids Jaw Crusher (up to 71 tons per hour (TPH)), a 1958 Cone Crusher (up to 71 TPH), a 1996 2-deck screen (up to 71 TPH), and associated equipment.

II. Source Description

For a typical operational setup, stockpiles of sand and gravel for concrete production are stored on site. A loader transfers the sand and gravel from the stockpiles to a weight hopper and the sand and gravel is then conveyed into the batch plant. The cement silo transfers the cement into the batch plant where water is added. The sand, gravel, cement, and water are then loaded into mixing trucks where the materials are mixed together to form concrete. The concrete is then transferred to various construction operations.

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

III. Applicable Rules and Regulations

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

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

- A. ARM 17.8.749 Conditions for Issuance of Permit. This rule requires that the source demonstrate compliance with applicable rules and standards before a permit can be issued. Also, a permit may be issued with such conditions as are necessary to assure compliance with all applicable rules and standards. Granite demonstrated compliance with all applicable rules and standards as required for permit issuance.
- B. ARM 17.8.764 Modification of Permit. An air quality permit may be modified 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 which do not result in an increase in emissions because of the 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.

Granite must submit proof of compliance with the transfer and public notice requirements when Granite transfers to any of the locations covered by this addendum and will only be allowed to stay in the new location for a period of less than 1 year. Also, the conditions and limitations in Addendum #2 to Permit #3020-01 will prevent Granite from having a significant impact on PM₁₀ nonattainment areas.

IV. Emission Inventory

Source	Lbs/day					
	PM	PM ₁₀	NO _x	VOC	CO	SO _x
Crushers (up to 142 TPH)	5.82	2.78				
Screen (up to 71 TPH)	18.34	8.73				
Material Transfer	11.82	5.70				
Pile Forming	19.56	9.31				
Bulk Loading	14.67	6.98				
Aggregate Delivery to Ground Storage	7.95	3.77				
Sand Delivery to Ground Storage	1.80	0.574				
Aggregate Transfer to Conveyor	7.95	3.77				
Sand Transfer to Conveyor	1.80	0.574				
Aggregate Transfer to Elevated Storage	7.95	3.77				
Sand Transfer to Elevated Storage	1.80	0.574				
Cement Unloading to Elevated Storage Silo	0.0608	0.0389				
Cement Supplement Unloading to Elevated Storage Silo	0.0396	0.0136				
Weigh Hopper Loading of Sand/Aggregate	10.33	4.83				
Central Mix Loading of Cement/Supplement/Sand/Aggregate	73.16	25.91				
Haul Roads	10.25	4.61				
Total	193.30	81.93				

Note: Emission inventory for winter season.

Lbs/day

Source	PM	PM ₁₀	NO _x	VOC	CO	SO _x
Crushers (up to 142 TPH)	8.52	4.08				
Screen (up to 71 TPH)	26.84	12.78				
Material Transfer	17.30	8.35				
Pile Forming	28.63	13.63				
Bulk Loading	21.47	10.22				
Aggregate Delivery to Ground Storage	11.64	5.52				
Sand Delivery to Ground Storage	2.64	0.84				
Aggregate Transfer to Conveyor	11.64	5.52				
Sand Transfer to Conveyor	2.64	0.84				
Aggregate Transfer to Elevated Storage	11.64	5.52				
Sand Transfer to Elevated Storage	2.64	0.84				
Cement Unloading to Elevated Storage Silo	0.089	0.057				
Cement Supplement Unloading to Elevated Storage Silo	0.058	0.020				
Weigh Hopper Loading of Sand/Aggregate	15.12	7.08				
Central Mix Loading of Cement/Supplement/Sand/Aggregate	107.04	37.92				
Haul Roads	15.00	6.75				
Total	282.90	119.97				

Note: Emission inventory for summer season.

V. Existing Air Quality

On July 1, 1987, the Environmental Protection Agency (EPA) promulgated new National Ambient Air Quality Standards (NAAQS) for PM₁₀. Due to exceedances of the national standards for PM₁₀, 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 PM₁₀. As a result of this designation, EPA required the Department and the City-County Health Departments submit PM₁₀ 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 determined these sources to be the major contributors to PM₁₀ emissions.

Addendum #2 to Permit #3020-01 is issued for the operation of a portable truck mix concrete batch plant and portable crushing/screening facility to locate at sites in or within 10 km of certain PM₁₀ nonattainment areas during the winter season (October 1 through March 31). Winter season (October 1 through March 31) operations may include only the locations listed in Section II.A of Addendum #1. Addendum #2 of Permit #3020-01 would also allow for summertime operations (April 1 – September 30) at any location in or within 10 km of the Butte, Columbia Falls, Libby, Kalispell, Thompson Falls, and Whitefish PM₁₀ nonattainment areas.

VI. Air Quality Impacts

Based on the information provided and the conditions established in Permit #3020-01, the amount of controlled emissions generated by this facility will not exceed any set ambient air quality standards. Further, the limitations and conditions established in Addendum #2 would further reduce emissions in the nonattainment areas and would be protective of the ambient air quality standards. Also, this facility is a portable source that would operate on an intermittent and temporary basis, so any effects to air quality will be minor and short-lived. The conditions in Permit #3020-01 will be protective of air quality while Granite is operating at locations not located in or within 10 km of certain PM₁₀ nonattainment areas.

VII. Taking or Damaging Implication Analysis

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

VIII. Environmental Assessment

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

Analysis Prepared By: Eric Thunstrom

Date: March 28, 2006

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air Resources Management Bureau
1520 East Sixth Avenue
P.O. Box 200901
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FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued For: Granite Concrete Company, Inc.

Permit Number: #3020-01

Preliminary Determination Issued: 04/05/06

Department Decision Issued: 04/21/06

Permit Final: 05/09/06

- Legal Description of Site:* Granite operates a portable truck mix concrete batch plant and a portable crushing/screening facility. Goose Bay operates a portable crushing/screening facility. However, Permit #3020394-01 would apply while operating at any location in Montana, except within those areas having a Department-approved permitting program or those areas considered tribal lands. A *Missoula County air quality permit will be required for locations within Missoula County, Montana.* Addendum #2 applies to the Granite Goose Bay facility while operating at any location in or within 10 km of certain PM₁₀ nonattainment areas during the summer months (April 1 – September 30) and at sites approved by the Department during the winter months (October 1 – March 31), including the initial site location, the E ½ of the SW ¼ of Section 14, Township 30 North, Range 31 West, in Lincoln County, Montana. Section 36, Township 30 North, Range 21 West, in Flathead County, Montana.
- Description of Project:* The permit applicant proposes the construction and operation of a portable crushing/screening facility consisting of a portable 1983 Kue-Ken 51-inch CTC Cone Crusher (up to 270 tons per hour, (TPH)), a 1974 Kolman (5 ft x 10 ft) 2-deck feed screen (up to 140 TPH), a 1974 El Jay (5 ft x 12 ft) 3-deck screen (up to 168 TPH), a 1983 El Jay (5 ft x 16 ft) 2-deck screen (up to 224 TPH), a 1996 Pioneer (5 ft x 16 ft) 3-deck screen wash plant (up to 224 TPH), and associated equipment. Granite owns and operates a portable truck mix concrete batch plant, which includes an electric powered 2006 Erie Strayer Silo and Batcher (maximum capacity of 150 cubic yards per hour (yd³/hr)), an electric powered 2006 Erie Strayer Tilt Mixer, an electric powered 2006 Erie Strayer Bin and Batcher, and associated equipment. A fabric filter dust collector controls particulate emissions from the cement silo. A rubber boot load-out spout controls particulate emissions from the cement batcher.

Granite also owns and operates a portable crushing/screening facility, which includes a 1945 Cedar Rapids Jaw Crusher (up to 71 tons per hour (TPH)), a 1958 Cone Crusher (up to 71 TPH), a 1996 2-deck screen (up to 71 TPH), and associated equipment.
- Objectives of Project:* Granite, in an effort to increase business and revenue for the company through the construction of the proposed truck mix concrete batch plant and associated equipment, submitted a complete permit application for the proposed equipment. The concrete batch plant would be used to supply wet mix concrete for sale and use in various construction operations. In addition to operating a concrete batch plant, the object of the project would be to produce business and revenue for the company through the sale and use of aggregate.

4. *Additional Project Site Information:* In many cases, this truck mix concrete batch plant operation and crushing/screening operation may move to a general site location or open cut pit, which has been previously permitted through the Industrial and Energy Minerals Bureau (IEMB). If this were the case, additional information for the site would be found in the Mined Land Reclamation Permit for that specific site.
5. *Alternatives Considered:* In addition to the proposed action, the Department considered the "no-action" alternative. The "no-action" alternative would deny issuance of the air quality preconstruction permit to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because Granite demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no-action" alternative was eliminated from further consideration.
6. *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 Permit #3020-01.
7. *Regulatory Effects on Private Property Rights:* 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.
8. *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 Resource			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

Terrestrials would use the same area as the truck mix concrete batch plant operation and aggregate crushing/screening operations. Impacts on terrestrial and aquatic life could result from storm water runoff and pollutant deposition, but such impacts would be minor, because the crushing/screening operations would be considered a minor source of emissions and would have

intermittent and seasonal operations. Furthermore, the air emissions would have only minor effects on terrestrial and aquatic life because facility emissions would be well dispersed in the area of operations (see Section 8.F of this EA). Also, the Flathead River is approximately one mile away from the proposed operational site and, at such a distance, only minor and temporary effects to terrestrial and aquatic life and habitat would be expected from the proposed crushing/screening operation because only minor amounts of pollutants would reach the water body. Therefore, only minor and temporary effects to terrestrial and aquatic life and habitat would be expected from the proposed truck mix concrete batch plant operation and crushing/screening operation.

B. Water Quality, Quantity, and Distribution

Water would be required for dust suppression on the surrounding roadways and areas of operation and for pollution control for equipment operations. Water use would cause only minor, if any, impacts to water resources in these areas because the facility has readily available water resources and would be far enough away from those resources that any pollutant deposition would be dispersed before reaching the surface water resources. The facility would only require a relatively small amount of water for pollution control and would only have minor amounts of pollutant deposition (see Section 8.F of this EA). Therefore, at most, only minor surface and groundwater quality impacts would be expected.

C. Geology and Soil Quality, Stability, and Moisture

The truck mix concrete batch plant operation and crushing/screening operations would have only minor impacts on geology and soil quality, stability, and moisture because deposition of air pollutants on soils would be minor (see Section 8.F of this EA), only minor amounts of water would be required to be used for pollution control, and only minor amounts of pollution would be generated. Also, this facility does not mine material at the current site. In addition, the pollutants would be widely dispersed before settling upon vegetation and surrounding soils (see Section 8.D of this EA). Therefore, any effects upon geology and soil quality, stability, and moisture at this proposed operational site would be minor.

D. Vegetation Cover, Quantity, and Quality

Minor impacts would occur on vegetative cover, quality, and quantity because the facility does not mine material at the current site. Pollutants would be greatly dispersed and corresponding deposition on vegetation from the proposed project would be minor (see Section 8.F of this EA). Also, water would be used for pollution control, as necessary.

E. Aesthetics

The truck mix concrete batch plant operation and crushing/screening operation would be visible and would create additional noise while operating at the initially proposed site. However, Permit #3020-01 would include conditions to control emissions, including visible emissions, from the plant. Also, permit limitations and conditions from Addendum #2 would apply when the facility is operating in nonattainment areas. Since the truck mix concrete batch plant operation and crushing/screening operation would be portable and would operate on an intermittent and seasonal basis, any visual aesthetic impacts would be minor and short-lived.

F. Air Quality

Air quality impacts from the proposed project would be minor because the facility would operate on an intermittent and temporary basis, and would originally locate at a previously disturbed site. Permit #3020-01 would include conditions limiting the facility's opacity and the facility's truck mix concrete batch plant operation and crushing/screening production. Permit #3020-01 would

also require water and water spray bars be available on site and used to control emissions. Permit #3020-01 would also limit total emissions from the truck mix concrete batch plant operation and crushing/screening facility and any additional Granite equipment operated at the site to 250 tons/year or less, excluding fugitive emissions. Additionally, Addendum #2 would apply while the facility is operating in or within 10 km of a certain PM₁₀ nonattainment areas and would impose more stringent requirements for operations within those areas.

Further, the Department determined that the truck mix concrete batch plant operation and crushing/screening facility would be a minor source of emissions as defined under the Title V Operating Permit Program because the source's PTE was limited below the major source threshold level of 100 tons per year for any regulated pollutant. Pollutant deposition from the facility would be minimal because the pollutants emitted would be widely dispersed (from factors such as wind speed and wind direction) and would have minimal deposition on the surrounding area (due to site topography of the area and minimal vegetative cover in the area). Therefore, air quality impacts from operating the truck mix concrete batch plant operation and crushing/screening equipment in this area would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

The truck mix concrete batch plant operation and crushing/screening operation will have only minor impacts to unique, endangered, fragile, or limited environmental resources because this facility does not mine material at the current site, is small by industry standards, and operates on relatively small portions of land.

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

Due to the relatively small size of the facility, the truck mix concrete batch plant operation and crushing/screening operation would only require small quantities of water, air, and energy for proper operation. Only small quantities of water would be required for dust suppression of emissions being generated at the site. In addition, impacts to air resources would 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 (see Section 8.F of this EA). Energy requirements would be provided by electrical power. Overall, any impacts to water, air, and energy resources would be minor.

I. Historical and Archaeological Sites

The Department previously 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 area of construction/operation. 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 truck mix concrete batch plant operation and crushing/screening operation.

J. Cumulative and Secondary Impacts

The truck mix concrete batch plant operation and crushing/screening operation would 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, PM₁₀, NO_x, VOC, CO, and SO_x emissions to be generated. Emissions and noise generated from the equipment would, at most, result in only minor impacts to the area of operations because of the proposed equipment location for the crushing/screening plant and because it would be seasonal and temporary in

nature. The proposed operational site is estimated to be 150 yards away from any home or structure and is 1.5 miles from the city of Libby. Additionally, this facility, in combination with other emissions from equipment operations would not be permitted to exceed 250 tons per year of non-fugitive emissions. Overall, cumulative and secondary impacts to the physical and biological aspects of the human environment would be minor.

9. *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 truck mix concrete batch plant operation and crushing/screening operation would cause no disruption to the social structures and mores in the area because the source would be a minor industrial source of emissions, would be separated from the general population, 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 Permit #3020-01 and Addendum #2, 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 be impacted by the proposed truck mix concrete batch plant operation and crushing/screening operation because the proposed site is separated from the general population, and the facility would be a portable source, with seasonal and intermittent operations. The predominant use of the surrounding area is rural and would not change as a result of this truck mix concrete batch plant operation and crushing/screening operation. Therefore, the cultural uniqueness and diversity of the area would not be affected.

C. Local and State Tax Base and Tax Revenue

The truck mix concrete batch plant operation and crushing/screening operations would 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 13 employees. Thus, only minor impacts to the local and state tax base and revenue could 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 truck mix concrete batch plant operation and crushing/screening operations would have only a minor impact on local industrial production since the facility would be a minor source of concrete and aggregate production and air emissions. Also, the facility would locate in a rural area. Therefore, because minimal deposition of air pollutants would occur on the surrounding land (see Section 8.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 temporary in nature and would be permitted with operational conditions and limitations that would minimize impacts upon surrounding vegetation (see Section 8.D of this EA).

E. Human Health

Permit #3020-01 would incorporate conditions to ensure that the truck mix concrete batch plant operation and crushing/screening operations 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 8.F. of this EA, the air emissions from this facility would be minimized by the use of water spray and other process limits that would be required by Permit #3020-01. Also, the facility would be operating on a temporary basis and pollutants would be dispersed (see Section 8.F of this EA). Therefore, only minor impacts would be expected on human health from the proposed truck mix concrete batch plant operation and crushing/screening operations.

F. Access to and Quality of Recreational and Wilderness Activities

Noise from the facility would be minor because the facility would be small and would operate in an area removed from the general population. As a result, the amount of noise generated from the truck mix concrete batch plant operation and crushing/screening operations would be minimal. Also, the facility would operate on a seasonal and intermittent basis on private land and would be a relatively minor industrial source of emissions. Therefore, any changes in the quality of recreational and wilderness activities created by operating the equipment at this site would be expected to be minor and intermittent.

G. Quantity and Distribution of Employment

The truck mix concrete batch plant operation and crushing/screening operations would require 13 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 truck mix concrete batch plant operation and crushing/screening operations. Therefore, no effects upon the quantity and distribution of employment in this area would be expected.

H. Distribution of Population

The portable truck mix concrete batch plant operation and crushing/screening operation is a portable industrial facility that would only require 13 existing employees to operate. No individuals would be expected to permanently relocate to this area of operation as a result of operating the truck mix concrete batch plant operation and crushing/screening operations. Therefore, the truck mix concrete batch plant operation and crushing/screening operations would not impact the normal population distribution in the initial area of operation or any future operating site.

I. Demands of Government Services

Minor increases would be seen in traffic on existing roadways in the area while the truck mix concrete batch plant operation and crushing/screening operation is in progress. 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. Demands for government services would be minor.

J. Industrial and Commercial Activity

The truck mix concrete batch plant operation and crushing/screening operation 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

Granite would be allowed, by Permit #3020-01 to operate in areas designated by EPA as attainment or unclassified for ambient air quality. Addendum #2 to Permit #3020-01 would allow for summertime operations (April 1- September 30) in or within 10 km of certain PM₁₀ nonattainment areas. Permit #3020-01 would contain limits 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 facility would be a portable source and would have intermittent and seasonal operations, any impacts from the facility would be minor and short-lived.

L. Cumulative and Secondary Impacts

The truck mix concrete batch plant operation and crushing/screening operations would cause 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. Further, no other industrial operations are expected to result from the permitting of this facility. 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 Granite, but any cumulative impacts upon the social and economic aspects of the human environment would be minor and short-lived. Thus, only minor and temporary cumulative effects would result to the local economy.

Recommendation: An EIS is not required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: All potential effects resulting from construction and operation of the proposed facility are minor; therefore, an EIS is not required.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Department of Environmental Quality - Permitting and Compliance Division (Industrial and Energy Minerals Bureau); Montana Natural Heritage Program; and the State Historic Preservation Office (Montana Historical Society).

Individuals or groups contributing to this EA: Montana Department of Environmental Quality (Air Resources Management Bureau and Industrial and Energy Minerals Bureau), Montana State Historic Preservation Office (Montana Historical Society).

EA prepared by: Eric Thunstrom

Date: March 28, 2006

Source	Tons/Year					
	PM	PM-10	NOx	VOC	CO	SOx
Aggregate Delivery to Ground Storage	2.11	1.01				
Sand Delivery to Ground Storage	0.49	0.16				
Aggregate Transfer to Conveyor	2.11	1.01				
Sand Transfer to Conveyor	0.49	0.16				
Aggregate Transfer to Elevated Storage	2.11	1.01				
Sand Transfer to Elevated Storage	0.49	0.16				
Cement Unloading to Elevated Storage Silo	0.02	0.01				
Cement Supplement Unloading to Elevated Storage Silo	0.01	0.00				
Weigh Hopper Loading of Sand/Aggregate	2.76	1.30				
Central Mix Loading of Cement/Supplement/Sand/Aggregate	19.53	6.92				
Haul Roads	2.74	1.23				
Total	32.87	13.00				

Aggregate Delivery to Ground Storage

Maximum Production Rate: 150 yd³/hr
 Aggregate in Mix: 0.9325 ton/yd³ (AP-42, page 11.12-7, 10/01)
 Maximum Aggregate Handled: 150 yd³/hr * 0.9325 ton/yd³ = 139.88 ton/hr
 Control Technology: Water
 Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.0069 lbs/ton (AP-42, table 11.12-2, 10/01)
 Control Efficiency: 50.0%
 Calculations: 0.0069 lbs/ton * 139.88 ton/hr = 0.97 lbs/hr
 0.97 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 4.23 tons/yr
 4.23 tons/yr * (1.00 - 0.500) = 2.114 tons/yr

PM-10 Emissions:

Emission Factor: 0.0033 lbs/ton (AP-42, table 11.12-2, 10/01)
 Control Efficiency: 50.0%
 Calculations: 0.0033 lbs/ton * 139.88 ton/hr = 0.46 lbs/hr
 0.46 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 2.022 tons/yr
 2.022 tons/yr * (1.00 - 0.500) = 1.01 tons/yr

Sand Delivery to Ground Storage

Maximum Production Rate: 150 yd³/hr
 Sand in Mix: 0.714 ton/yd³ (AP-42, page 11.12-7, 10/01)
 Maximum Sand Handled: 150 yd³/hr * 0.7140 ton/yd³ = 107.10 ton/hr
 Control Technology: Water
 Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.0021 lbs/ton (AP-42, page 11.12-2, 10/01)
 Control Efficiency: 50.0%
 Calculations: 0.0021 lbs/ton * 107.10 ton/hr = 0.22 lbs/hr
 0.22 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 0.99 tons/yr
 0.99 tons/yr * (1.00 - 0.500) = 0.493 tons/yr

PM-10 Emissions:

Emission Factor: 0.0007 lbs/ton (AP-42, page 11.12-2, 10/01)
 Control Efficiency: 50.0%
 Calculations: 0.0007 lbs/ton * 107.10 ton/hr = 0.07 lbs/hr
 0.07 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 0.328 tons/yr
 0.328 tons/yr * (1.00 - 0.500) = 0.16 tons/yr

Aggregate Transfer to Conveyor

Maximum Production Rate: 150 yd³/hr
Aggregate in Mix: 0.9325 ton/yd³ (AP-42, page 11.12-7, 10/01)
Maximum Aggregate Handled: 150 yd³/hr * 0.9325 ton/yd³ = 139.88 ton/hr
Control Technology: Water
Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.0069 lbs/ton (AP-42, table 11.12-2, 10/01)
Control Efficiency: 50.0%
Calculations: 0.0069 lbs/ton * 139.88 ton/hr = 0.97 lbs/hr
0.97 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 4.23 tons/yr
4.23 tons/yr * (1.00 - 0.500) = 2.114 tons/yr

PM-10 Emissions:

Emission Factor: 0.0033 lbs/ton (AP-42, table 11.12-2, 10/01)
Control Efficiency: 50.0%
Calculations: 0.0033 lbs/ton * 139.88 ton/hr = 0.46 lbs/hr
0.46 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 2.022 tons/yr
2.022 tons/yr * (1.00 - 0.500) = 1.01 tons/yr

Sand Transfer to Conveyor

Maximum Production Rate: 150 yd³/hr
Sand in Mix: 0.714 ton/yd³ (AP-42, page 11.12-7, 10/01)
Maximum Sand Handled: 150 yd³/hr * 0.714 ton/yd³ = 107.10 ton/hr
Control Technology: Water
Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.0021 lbs/ton (AP-42, table 11.12-2, 10/01)
Control Efficiency: 50.0%
Calculations: 0.0021 lbs/ton * 107.10 ton/hr = 0.22 lbs/hr
0.22 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 0.99 tons/yr
0.99 tons/yr * (1.00 - 0.500) = 0.493 tons/yr

PM-10 Emissions:

Emission Factor: 0.0007 lbs/ton (AP-42, table 11.12-2, 10/01)
Control Efficiency: 50.0%
Calculations: 0.0007 lbs/ton * 107.10 ton/hr = 0.07 lbs/hr
0.07 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 0.328 tons/yr
0.328 tons/yr * (1.00 - 0.500) = 0.16 tons/yr

Aggregate Transfer to Elevated Storage

Maximum Production Rate: 150 yd³/hr
Aggregate in Mix: 0.9325 ton/yd³ (AP-42, page 11.12-7, 10/01)
Maximum Aggregate Handled: 150 yd³/hr * 0.9325 ton/yd³ = 139.88 ton/hr
Control Technology: Water
Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.0069 lbs/ton (AP-42, table 11.12-2, 10/01)
Control Efficiency: 50.0%
Calculations: 0.0069 lbs/ton * 139.88 ton/hr = 0.97 lbs/hr
0.97 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 4.23 tons/yr
4.23 tons/yr * (1.00 - 0.500) = 2.114 tons/yr

PM-10 Emissions:

Emission Factor: 0.0033 lbs/ton (AP-42, table 11.12-2, 10/01)
Control Efficiency: 50.0%
Calculations: 0.0033 lbs/ton * 139.88 ton/hr = 0.46 lbs/hr
0.46 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 2.022 tons/yr
2.022 tons/yr * (1.00 - 0.500) = 1.01 tons/yr

Sand Transfer to Elevated Storage

Maximum Production Rate: 150 yd³/hr
Sand in Mix: 0.714 ton/yd³ (AP-42, page 11.12-7, 10/01)
Maximum Sand Handled: 150 yd³/hr * 0.7140 ton/yd³ = 107.10 ton/hr
Control Technology: Water
Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.0021 lbs/ton (AP-42, table 11.12-2, 10/01)
Control Efficiency: 50.0%
Calculations: 0.0021 lbs/ton * 107.10 ton/hr = 0.22 lbs/hr
0.22 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 0.99 tons/yr
0.99 tons/yr * (1.00 - 0.500) = 0.493 tons/yr

PM-10 Emissions:

Emission Factor: 0.0007 lbs/ton (AP-42, table 11.12-2, 10/01)
Control Efficiency: 50.0%
Calculations: 0.001 lbs/ton * 107.10 ton/hr = 0.07 lbs/hr
0.07 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 0.328 tons/yr
0.328 tons/yr * (1.00 - 0.500) = 0.16 tons/yr

Cement Unloading to Elevated Storage Silo

Maximum Production Rate: 21 yd³/hr
Cement in Mix: 0.2455 ton/yd³ (AP-42, page 11.12-7, 10/01)
Maximum Cement Handled: 21 yd³/hr * 0.2455 ton/yd³ = 5.16 ton/hr
Control Technology: Bag Filter Vent
Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.72 lbs/ton (AP-42, table 11.12-2, 10/01)
Control Efficiency: 99.9%
Calculations: 0.7200 lbs/ton * 5.16 ton/hr = 3.71 lbs/hr
3.71 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 16.26 tons/yr
16.26 tons/yr * (1.00 - 0.999) = 0.016 tons/yr

PM-10 Emissions:

Emission Factor: 0.46 lbs/ton (AP-42, table 11.12-2, 10/01)
Control Efficiency: 99.9%
Calculations: 0.460 lbs/ton * 5.16 ton/hr = 2.37 lbs/hr
2.37 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 10.387 tons/yr
10.387 tons/yr * (1.00 - 0.999) = 0.010 tons/yr

Cement Supplement Unloading to Elevated Storage Silo

Maximum Production Rate: 21 yd³/hr
Cement Supplement in Mix: 0.0365 ton/yd³ (AP-42, page 11.12-7, 10/01)
Maximum Supplement Handled: 21 yd³/hr * 0.0365 ton/yd³ = 0.77 ton/hr
Control Technology: Bag Filter Vent
Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 3.14 lbs/ton (AP-42, table 11.12-2, 10/01)
Control Efficiency: 99.9%
Calculations: 3.1400 lbs/ton * 0.77 ton/hr = 2.4068 lbs/hr
2.41 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 10.542 tons/yr
10.542 tons/yr * (1.00 - 0.999) = 0.011 tons/yr

PM-10 Emissions:

Emission Factor: 1.1 lbs/ton (AP-42, table 11.12-2, 10/01)
Control Efficiency: 99.9%
Calculations: 1.1000 lbs/ton * 0.77 ton/hr = 0.8432 lbs/hr
0.8432 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 3.693 tons/yr
3.693 tons/yr * (1.00 - 0.999) = 0.004 tons/yr

Weigh Hopper Loading of Sand/Aggregate

Maximum Production Rate: 150 yd³/hr
 Sand/Aggregate in Mix: 1.65 ton/yd³ (AP-42, page 11.12-7, 10/01)
 Control Technology: Watering
 Maximum Sand/Aggregate Handled: 150 yd³/hr * 1.6500 ton/yd³ = 247.50 ton/hr
 Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.0051 lbs/ton (AP-42, table 11.12-2, 10/01)
 Control Efficiency: 50%
 Calculations: 0.0051 lbs/ton * 247.50 ton/hr = 1.26 lbs/hr
 1.26 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 5.53 tons/yr
 5.53 tons/yr * (1.00 - 0.50) = 2.76 tons/yr

PM-10 Emissions:

Emission Factor: 0.0024 lbs/ton (AP-42, table 11.12-2, 10/01)
 Control Efficiency: 50%
 Calculations: 0.0024 lbs/ton * 247.50 ton/hr = 0.59 lbs/hr
 0.59 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 2.60 tons/yr
 2.60 tons/yr * (1.00 - 0.50) = 1.30 tons/yr

Central Mix Loading of Cement/Supplement/Sand/Aggregate

Maximum Production Rate: 21 yd³/hr
 Cement/Supp./Sand/Agg. in Mix: 1.93 ton/yd³ (AP-42, page 11.12-7, 10/01)
 Max. Cement/Supp./Sand/Agg. Handled: 21 yd³/hr * 1.9300 ton/yd³ = 40.53 ton/hr
 Control Technology: Water
 Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.22 lbs/ton (AP-42, table 11.12-2, 10/01)
 Control Efficiency: 50%
 Calculations: 0.22 lbs/ton * 40.53 ton/hr = 8.92 lbs/hr
 8.92 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 39.05 tons/yr
 39.05 tons/yr * (1.00 - 0.50) = 19.53 tons/yr

PM-10 Emissions:

Emission Factor: 0.078 lbs/ton (AP-42, table 11.12-2, 10/01)
 Control Efficiency: 50%
 Calculations: 0.08 lbs/ton * 40.53 ton/hr = 3.16 lbs/hr
 3.16 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 13.85 tons/yr
 13.85 tons/yr * (1.00 - 0.50) = 6.92 tons/yr

Haul Roads

Vehicle miles travelled: 5 VMT/day {Estimated}
 Control Efficiency: 50% {Watering}

TSP Emission Factor is based on AP-42, Section 11.2.1

TSP Emissions

TSP Emission Factor (Rated Load Capacity <50 tons): 6 Lbs/VMT
 E(TSP)= (5 VMT/day)(6.00 Lbs/VMT)(0.5)
 E(TSP)= 15.00 Lbs/day
 or 2.74 tons/yr

PM-10 Emission Factor is based on AP-42, Section 11.2.1

PM10 Emissions:

PM10 Emission Factor (Rated Load Capacity <50 tons): 2.70 Lbs/VMT
 E(PM10)= (5 VMT/day)(2.70 Lbs/VMT)(0.5)
 E(PM10)= 6.75 Lbs/day
 or 1.23 tons/yr

Source	Lbs/Day					
	PM	PM-10	NOx	VOC	CO	SOx
Crusher (up to 71 TPH)	4.26	2.04				
Crusher (up to 71 TPH)	4.26	2.04				
2-Deck Screen (up to 71 TPH)	26.84	12.78				
Material Transfer (7 Material Transfers, 71 TPH)	17.30	8.35				
Pile Forming (4 Pile Forming, 71 TPH)	28.63	13.63				
Bulk Loading (3 Bulk Loading, 71 TPH)	21.47	10.22				
Haul Roads	15.00	6.75				
	117.75	55.83				

Source	Tons/Year					
	PM	PM-10	NOx	VOC	CO	SOx
Crusher (up to 71 TPH)	0.78	0.37				
Crusher (up to 71 TPH)	0.78	0.37				
2-Deck Screen (up to 71 TPH)	4.90	2.33				
Material Transfer (7 Material Transfers, 71 TPH)	3.16	1.52				
Pile Forming (4 Pile Forming, 71 TPH)	5.22	2.49				
Bulk Loading (3 Bulk Loading, 71 TPH)	3.92	1.87				
Haul Roads	2.74	1.23				
Total	21.49	10.19				

Crusher (up to 71 TPH)

Maximum Process Rate:: 71 ton/hr
Adjusted Process Rate: 71 ton/hr
Hours of operation: 24 hr/day or 8760 hr/yr

PM Emissions:

Emission Factor: 0.005 lb/ton (AP-42, Table 11.19.2-2, 1/95)
Control Efficiency: 50% wet material
Hourly Calculations: $0.005 \text{ lb/ton} \times 71 \text{ ton/hr} \times (1-0.5) = 0.18 \text{ lb/hr}$
Daily Calculations: $0.1775 \text{ lb/hr} \times 24 \text{ hr/day} = 4.26 \text{ lb/day}$
Annual Calculations: $0.1775 \text{ lb/hr} \times 8760 \text{ hr/yr} \times 0.0005 \text{ ton/lb} = 0.78 \text{ ton/yr}$

PM-10 Emissions:

Emission Factor: 0.0024 lb/ton (AP-42, Table 11.19.2-2, 1/95)
Control Efficiency: 50% wet material
Hourly Calculations: $0.0024 \text{ lb/ton} \times 71 \text{ ton/hr} \times (1-0.5) = 0.09 \text{ lb/hr}$
Daily Calculations: $0.0852 \text{ lb/hr} \times 24 \text{ hr/day} = 2.04 \text{ lb/day}$
Annual Calculations: $0.0852 \text{ lb/hr} \times 8760 \text{ hr/yr} \times 0.0005 \text{ ton/lb} = 0.37 \text{ ton/yr}$

Crusher (up to 71 TPH)

Maximum Process Rate: 71 ton/hr
 Adjusted Process Rate: 71 ton/hr
 Hours of operation: 24 hr/day or 8760 hr/yr

PM Emissions:

Emission Factor: 0.005 lb/ton (AP-42, Table 11.19.2-2, 1/95)
 Control Efficiency: 50% wet material
 Hourly Calculations: $0.005 \text{ lb/ton} * 71 \text{ ton/hr} * (1-0.5) = 0.18 \text{ lb/hr}$
 Daily Calculations: $0.1775 \text{ lb/hr} * 24 \text{ hr/day} = 4.26 \text{ lb/day}$
 Annual Calculations: $0.1775 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.78 \text{ ton/yr}$

PM-10 Emissions:

Emission Factor: 0.0024 lb/ton (AP-42, Table 11.19.2-2, 1/95)
 Control Efficiency: 50% wet material
 Hourly Calculations: $0.0024 \text{ lb/ton} * 71 \text{ ton/hr} * (1-0.5) = 0.09 \text{ lb/hr}$
 Daily Calculations: $0.0852 \text{ lb/hr} * 24 \text{ hr/day} = 2.04 \text{ lb/day}$
 Annual Calculations: $0.0852 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.37 \text{ ton/yr}$

2-Deck Screen (up to 71 TPH)

Maximum Process Rate: 71 ton/hr
 Adjusted Process Rate: 71 ton/hr
 Hours of operation: 24 hr/day or 8760 hr/yr

PM Emissions:

Emission Factor: 0.0315 lb/ton (AP-42, Table 11.19.2-2, 1/95)
 Control Efficiency: 50% wet material
 Hourly Calculations: $0.0315 \text{ lb/ton} * 71 \text{ ton/hr} * (1-0.5) = 1.12 \text{ lb/hr}$
 Daily Calculations: $1.11825 \text{ lb/hr} * 24 \text{ hr/day} = 26.84 \text{ lb/day}$
 Annual Calculations: $1.11825 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 4.90 \text{ ton/yr}$

PM-10 Emissions:

Emission Factor: 0.015 lb/ton (AP-42, Table 11.19.2-2, 1/95)
 Control Efficiency: 50% wet material
 Hourly Calculations: $0.015 \text{ lb/ton} * 71 \text{ ton/hr} * (1-0.5) = 0.53 \text{ lb/hr}$
 Daily Calculations: $0.5325 \text{ lb/hr} * 24 \text{ hr/day} = 12.78 \text{ lb/day}$
 Annual Calculations: $0.5325 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 2.33 \text{ ton/yr}$

Material Transfer (7 Material Transfers, 71 TPH)

Maximum Process Rate: 71 ton/hr
 Adjusted Process Rate: 71 ton/hr
 Number of Material Transfer: 7 number of Transfers
 Hours of operation: 8760 hr/yr or 24 hr/day

PM Emissions:

Emission Factor: 0.0029 lb/ton (AP-42, Table 8.23-4, moisture content >4% by weight, pg. 8.23-4, 8/82)
 Control Efficiency: 50% wet material
 Hourly Calculations: $0.0029 \text{ lb/ton} * 71 \text{ ton/hr} * 7 \text{ number of Transfers} * (1-0.5) = 0.72 \text{ lb/hr}$
 Daily Calculations: $0.72065 \text{ lb/hr} * 24 \text{ hr/day} = 17.30 \text{ lb/day}$
 Annual Calculations: $0.72065 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 3.16 \text{ ton/yr}$

PM-10 Emissions:

Emission Factor: 0.0014 lb/ton (AP-42, Table 8.23-4, moisture content >4% by weight, pg. 8.23-4, 8/82)
 Control Efficiency: 50% wet material
 Hourly Calculations: $0.0014 \text{ lb/ton} * 71 \text{ ton/hr} * 7 \text{ number of Transfers} * (1-0.5) = 0.35 \text{ lb/hr}$
 Daily Calculations: $0.3479 \text{ lb/hr} * 24 \text{ hr/day} = 8.35 \text{ lb/day}$
 Annual Calculations: $0.3479 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 1.52 \text{ ton/yr}$

Pile Forming (4 Pile Forming, 71 TPH)

Maximum Process Rate: 71 ton/hr
 Adjusted Process Rate: 71 ton/hr
 Number of Piles: 4 Piles
 Hours of operation: 8760 hr/yr or 24 hr/day

PM Emissions:

Emission Factor: 0.0084 lb/ton (AP-42, Table 8.23-4, moisture content >4% by weight, pg. 8.23-4, 8/82)
 Control Efficiency: 50% wet material
 Hourly Calculations: $0.0084 \text{ lb/ton} * 71 \text{ ton/hr} * 4 \text{ Piles} * (1-0.5) = 1.19 \text{ lb/hr}$
 Daily Calculations: $1.1928 \text{ lb/hr} * 24 \text{ hr/day} = 28.63 \text{ lb/day}$
 Annual Calculations: $1.1928 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 5.22 \text{ ton/yr}$

PM-10 Emissions:

Emission Factor: 0.004 lb/ton (AP-42, Table 8.23-4, moisture content >4% by weight, pg. 8.23-4, 8/82)
 Control Efficiency: 50% wet material
 Hourly Calculations: $0.004 \text{ lb/ton} * 71 \text{ ton/hr} * 4 \text{ Piles} * (1-0.5) = 0.57 \text{ lb/hr}$
 Daily Calculations: $0.568 \text{ lb/hr} * 24 \text{ hr/day} = 13.63 \text{ lb/day}$
 Annual Calculations: $0.568 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 2.49 \text{ ton/yr}$

Bulk Loading (3 Bulk Loading, 71 TPH)

Maximum Process Rate: 71 ton/hr
 Adjusted Process Rate: 71 ton/hr
 Number of Loads: 3 Load
 Hours of operation: 8760 hr/yr or 24 hr/day

PM Emissions:

Emission Factor: 0.0084 lb/ton (AP-42, Table 8.23-4, moisture content >4% by weight, pg. 8.23-4, 8/82)
 Control Efficiency: 50% wet material
 Hourly Calculations: $0.0084 \text{ lb/ton} * 71 \text{ ton/hr} * 3 \text{ Load} * (1-0.5) = 0.89 \text{ lb/hr}$
 Daily Calculations: $0.8946 \text{ lb/hr} * 24 \text{ hr/day} = 21.47 \text{ lb/day}$
 Annual Calculations: $0.8946 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 3.92 \text{ ton/yr}$

PM-10 Emissions:

Emission Factor: 0.004 lb/ton (AP-42, Table 8.23-4, moisture content >4% by weight, pg. 8.23-4, 8/82)
 Control Efficiency: 50% wet material
 Hourly Calculations: $0.004 \text{ lb/ton} * 71 \text{ ton/hr} * 3 \text{ Load} * (1-0.5) = 0.43 \text{ lb/hr}$
 Daily Calculations: $0.426 \text{ lb/hr} * 24 \text{ hr/day} = 10.22 \text{ lb/day}$
 Annual Calculations: $0.426 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 1.87 \text{ ton/yr}$