Montana Department of
ENVIRONMENTAL QUALITY
Brian Schweitzer, Governor
P. O. Box 200901 Helena, MT 59620-0901 (406) 444-2544 Website: www.deq.mt.gov

June 15, 2009

KEM Ready Mix, Inc.
Keith E. Martin
136 Limestone Road
Nye, MT 59061

Dear Mr. Martin:

Air Quality Permit #2678-03 is deemed final as of June 15, 2009, by the Department of Environmental Quality (Department). This permit is for a portable crushing facility. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

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

Trista Glazier
Environmental Science Specialist
Air Resources Management Bureau
(406) 444-3403

VW:TG
Enclosure

Montana Department of Environmental Quality
Permitting and Compliance Division

Air Quality Permit #2678-03

KEM Ready Mix, Inc.
136 Limestone Road
Nye, MT 59061

June 15, 2009

MONTANA AIR QUALITY PERMIT

Issued To: KEM Ready Mix, Inc.
346 Limestone Rd
Nye, MT 59061

MAQP #2678-03
Administrative Amendment (AA) Request
Received: 4/15/09
Department Decision on AA: 5/29/09
Permit Final: 6/15/09
AFS #: 777-2678

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to KEM Ready Mix, Inc. (KEM), pursuant to Section 75-2-204 and 211 of the 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. Permitted Equipment

KEM operates a portable crushing/screening facility that moves to various locations throughout Montana, originally located at Section 27, Township 4 South, Range 15 East in Stillwater County, Montana. MAQP #2678-03 applies while operating at any location in Montana, except within those areas having a Department of Environmental Quality (Department) approved permitting program, areas considered tribal lands, or areas in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) nonattainment areas. *A Missoula County air quality permit will be required for locations within Missoula County.* An addendum to this air quality permit will be required if KEM intends to locate in or within 10 km of certain PM_{10} nonattainment areas. A list of the permitted equipment is contained in Section I.A of the permit analysis.

B. Current Permit Action

On April 15, 2009, the Department received a request from KEM to include 2 portable concrete batch plants with a combined maximum capacity of 30 cubic yards per hour. The permit was updated to reflect the de minimis addition. In addition, the permit was also updated to reflect current permit format and language, as well as updated the emission inventory.

Section II: Limitations and Conditions

A. Emission Limitations

1. All visible emissions from any Standards of Performance for New Stationary Sources (NSPS) affected crusher may not exhibit an opacity of 15% or greater averaged over 6 consecutive minutes (ARM 17.8.340, ARM 17.8.749, and 40 CFR 60, Subpart OOO).

2. KEM shall not cause or authorize to be discharged into the atmosphere from any other NSPS affected equipment, such as screens or conveyor transfers, any fugitive emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.340, ARM 17.8.749, and 40 CFR 60, Subpart OOO).

3. KEM shall not cause or authorize to be discharged into the atmosphere from the

1959 Cedar Rapids Commander portable crusher, the 1947 Universal primary jaw crusher, and any other non-NSPS affected equipment, any visible emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).

4. Crusher production is limited to 2,190,000 tons for any rolling 12-month time period (ARM 17.8.749).

5. KEM may operate up to 3 diesel-powered engine/generators not to exceed a combined maximum capacity of 298 horsepower (hp).

6. Concrete production is limited to 262,800 cubic yards for any rolling 12-month time period (ARM 17.8.749)

7. KEM shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.304).

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

9. Water and spray bars shall be available and used, as necessary, to maintain compliance with the opacity limitations in Sections II.A.1, II.A.2, and II.A.3 (ARM 17.8.749).

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

B. Testing Requirements

1. Within 60 days after achieving the maximum production rate, but not later than 180 days after initial start up, an 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 and any affected equipment (i.e., screens or conveyor transfers), to demonstrate compliance with the emission limitations contained in Sections II.A.1 and II.A.2 (ARM 17.8.340, 40 CFR Part 60, General Provisions and Subpart OOO).

2. All compliance source tests shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

3. The Department may require additional testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. If this crushing/screening plant is moved to another location, an Intent to Transfer Form must be sent to the Department. 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. KEM 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 KEM as a permanent business record for at least 5 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).

3. KEM 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. KEM shall notify the Department of any construction or improvement project conducted, pursuant to ARM 17.8.745, that would include ***the addition of a new emissions unit***, change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation. The notice must be submitted to the Department, in writing, 10 days prior to startup or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(l)(d) (ARM 17.8.745).

5. KEM shall document, by month, the crushing production from the facility. By the 25th day of each month, KEM shall calculate the 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.4. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

6. KEM shall document, by month, the concrete production from the facility. By the 25th day of each month, KEM shall calculate the concrete 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.6. 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 - KEM 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 the recipient fails to appeal as indicated below.

C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving KEM 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. Duration of Permit – Construction or installation must begin or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

H. Permit Fees - Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay by KEM of an annual operation fee may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

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. KEM 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 or areas considered tribal lands.

PERMIT ANALYSIS
KEM Ready Mix, Inc.
MAQP #2678-03

I. Introduction/Process Description

A. Permitted Equipment

KEM Ready Mix, Inc. (KEM) operates a portable crushing/screening facility that moves to various locations throughout Montana. The facility equipment includes:

- 1998 jaw crusher (maximum capacity 250 tons per hour (TPH));
- 1959 Cedar Rapids Commander portable jaw and rolls crusher (maximum capacity 250 TPH);
- 1947 Universal primary jaw crusher (maximum capacity 250 TPH);
- Finley Hydro-screen (maximum capacity up to 70 TPH) with an attached diesel engine (using 1 gallon of diesel per hour);
- Homemade screen (maximum capacity up to 35 TPH) with an attached gasoline engine (using 1.25 gallons of gasoline per hour);
- 150 horsepower (hp) diesel-powered engine/generator;
- 100 hp diesel-powered engine/generator;
- 2 portable concrete batch plants (combined maximum capacity up to 30 cubic yards per hour (y^3/h);
- 48 hp diesel-powered engine/generator (provides power for concrete batch plant operation),
- Gasoline engine (using 0.5 gallons of gasoline per hour and provides power for concrete batch plant operation);
- Gasoline engine (using 0.25 gallons of gasoline per hour and provides power for concrete batch plant operation); and,
- Associated equipment.

B. Process Description

KEM operates a crushing/screening plant, concrete batch plants, and associated equipment that will be used in construction, repair, and maintenance of roads and highways and various other operations.

C. Permit History

On May 30, 1991, KEM was issued **Montana Air Quality Permit (MAQP) #2678-00** to operate a 1959 Cedar Rapids Commander jaw and rolls crusher, a 1947 Universal primary jaw crusher, a Finley Hydro-screen with an attached diesel engine, a Homemade screen with attached gasoline engine, a diesel generator, and associated equipment.

On March 18, 2002, KEM requested a permit modification for the addition of a portable 1998 jaw crusher (maximum capacity 89 TPH). The addition of the crusher results in the generation of emissions of less than 15 tons per year. The crusher was added in accordance with the Administrative Rules of Montana (ARM) 17.8.705(1)(r). The limits on the crusher emissions and hours of operation were removed from the permit because they were determined to be unnecessary, based on current emission factors. The permit was also updated to reflect current language and rule references used by the Department of Environmental Quality (Department). **MAQP #2678-01** replaced MAQP #2678-00.

On March 13, 2003, KEM submitted a request for an administrative amendment to add a 60 kilowatt (kW) diesel generator in accordance with ARM 17.8.745(1)(a). Additionally, KEM requested to add "Inc." to their name. The permit was updated to reflect the de minimis addition and to update the company name. In addition, the permit was also updated to reflect current language and rule references used by the Department. **MAQP #2678-02** replaced MAQP #2678-01.

D. Current Permit Action

On April 15, 2009, the Department received a request from KEM to include 2 portable concrete batch plants with a combined maximum capacity of 30 cubic yards per hour. The permit was updated to reflect the de minimis addition. In addition, the permit was also updated to reflect current permit format and language, as well as updated the emission inventory. **MAQP #2678-03** replaces MAQP #2678-02.

E. Additional Information

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

II. 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 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).

KEM 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. The Department must be notified promptly by

telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.

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

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 PM_{10}

KEM must comply 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 to an outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, KEM 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 rule.

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 rule.

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 rule.

6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank truck or trailer is equipped with a vapor loss control device as described in (1) of this rule.
7. ARM 17.8.340 Standard of Performance for New Stationary Sources. This rule incorporates, by reference, 40 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.

In order for a crushing/screening plant to be subject to NSPS requirements, two specific criteria must be met. First, the crushing plant must meet the definition of an affected facility and second, the equipment in question must have been constructed, reconstructed, or modified after August 31, 1983. Because the 1998 jaw crusher capacity is greater than 150 TPH and the plant was manufactured after August 31, 1983, the plant meets the definition of an affected facility and, subsequently, is subject to NSPS requirements (40 CFR 60, Subpart A General Provisions, and Subpart OOO Non-Metallic Mineral Processing Plants).

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 KEM 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. KEM was not required to submit a permit application fee for the current permit action because the action is considered to be administrative.

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 operation fee is based on the actual or estimated 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, as 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 facility to obtain an air quality permit or permit modification if they construct, modify, or use any asphalt plant, crusher, or screen that has the potential to emit greater than 15 tons per year of any pollutant. KEM has the potential to emit more than 15 tons per year of total particulate matter (PM), particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}), oxides of nitrogen (NO_x), and carbon monoxide (CO); therefore, an air quality permit is required.
3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit

program.

4. ARM 17.8.745 Montana Air Quality Permits—Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that are not subject to the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. This rule requires that a permit application be submitted prior to installation, modification, or use of a source. KEM was not required to submit a permit application for the current permit action because the change reflects an administrative change. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. KEM was not required to submit an affidavit of publication of public notice because this permit action is an administrative amendment.

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 KEM of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

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

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

12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of KEM, 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. A source may not increase its emissions beyond those found in its permit unless the source applies for and receives another permit.

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

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

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

This facility is not a major stationary source because it is not a listed source and does not have the potential to emit more than 250 tons per year (excluding fugitive emissions) of any air pollutant.

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. Potential To Emit (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 a lesser quantity as the Department may establish by rule; or

   c. PTE > 70 tons/year of PM_{10} in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing

MAQP #2678-03 for the KEM 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 of any one HAP and less than 25 tons/year of all HAPs.

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

d. This facility is not subject to any current NESHAP standards.

e. This facility is subject to current NSPS standards (40 CFR 60, Subpart OOO).

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 Operation Permit, KEM will be required to obtain a Title V Operating Permit.

III. Emission Inventory

	tons/year					
Emission Source	**PM**	**PM10**	**NOx**	**CO**	**VOC**	**SO2**
250 TPH 1998 Jaw Crusher	1.31	0.59	--	--	--	--
250 TPH 1959 Cedar Rapids Crusher	1.31	0.59	--	--	--	--
250 TPH 1947 Universal Crusher	1.31	0.59	--	--	--	--
70 TPH Finley Hydro-Screen	1.1	0.23	--	--	--	--
35 TPH Homemade Screen	0.55	0.11	--	--	--	--
150 hp Diesel-Powered Engine/Generator	1.45	1.45	20.37	4.39	1.65	1.35
100 hp Diesel-Powered Engine/Generator	0.96	0.96	13.58	2.93	1.10	0.90
48 hp Diesel-Powered Engine/Generator	0.46	0.46	6.52	1.40	0.53	0.43
2 Concrete Batch Plants (up to 30 yd^3/hr total)	19.05	6.14	--	--	--	--
1 gal/hr Diesel engine powering Finley Hydro-Screen	0.19	0.19	0.02	0.00	0.00	0.00
1.25 gal/hr Gasoline motor powering homemade screen	0.21	0.21	0.02	0.00	0.00	0.00
0.5 gal/hr Gasoline engine for concrete batch plant	0.08	0.08	0.01	0.00	0.00	0.00
0.25 gal/hr Gasoline engine for concrete batch plant	0.04	0.04	0.00	0.00	0.00	0.00
Storage Piles	3.61	1.71	--	--	--	--
Haul Roads / Vehicle Traffic	5.68	1.57	--	--	--	--
Conveyor Transfer Points	0.92	0.30	--	--	--	--
Total Emissions	**32.65**	**13.11**	**40.51**	**8.73**	**3.29**	**2.68**

Crushing [1998 Jaw Crusher] (SCC 3-05-020-05)

Maximum Process Rate = 250 ton/hr (Application information)
Maximum Hours of Operation = 8,760 hrs/yr

PM Emissions:
Emission Factor = 0.0012 lb/ton (crushing, AP 42, Table 11.19.2-2, 8/04)
Calculation: (250 ton/hr) * (8760 hr/yr) * (0.0012 lb/ton) * (ton/2000 lb) = 1.31 ton/yr
Calculation: (250 ton/hr) * (8760 hr/yr) * (0.0012 lb/ton) * (ton/2000 lb) * (1 - 0/100) = 1.31 ton/yr

PM_{10} Emissions:
Emission Factor = 0.00054 lb/ton (crushing, AP 42, Table 11.19.2-2, 8/04)
Calculation: (250 ton/hr) * (8760 hr/yr) * (0.00054 lb/ton) * (ton/2000 lb) = 0.59 ton/yr
Calculation: (250 ton/hr) * (8760 hr/yr) * (0.00054 lb/ton) * (ton/2000 lb) * (1 - 0/100) = 0.59 ton/yr

Crushing [1959 Cedar Rapids Crusher] (SCC 3-05-020-05)

Maximum Process Rate = 250 ton/hr (Maximum plant process rate)
Maximum Hours of Operation = 8,760 hr/yr

PM Emissions:
Emission Factor = 0.0012 lb/ton (crushing, AP 42, Table 11.19.2-2, 8/04)
Calculation: (250 ton/hr) * (8760 hr/yr) * (0.0012 lb/ton) * (ton/2000 lb) = 1.31 ton/yr
Calculation: (250 ton/hr) * (8760 hr/yr) * (0.0012 lb/ton) * (ton/2000 lb) * (1 - 0/100) = 1.31 ton/yr

PM_{10} Emissions:
Emission Factor = 0.00054 lb/ton (crushing, AP 42, Table 11.19.2-2, 8/04)
Calculation: (250 ton/hr) * (8760 hr/yr) * (0.00054 lb/ton) * (ton/2000 lb) = 0.59 ton/yr

Crushing [1947 Universal Crusher] (SCC 3-05-020-05)

Maximum Process Rate = 250 ton/hr (Maximum plant process rate)
Maximum Hours of Operation = 8,760 hr/yr

PM Emissions:
Emission Factor = 0.0012 lb/ton (crushing, AP 42, Table 11.19.2-2, 8/04)
Calculation: (250 ton/hr) * (8760 hr/yr) * (0.0012 lb/ton) * (ton/2000 lb) = 1.31 ton/yr
Calculation: (250 ton/hr) * (8760 hr/yr) * (0.0012 lb/ton) * (ton/2000 lb) * (1 - 0/100) = 1.31 ton/yr

PM_{10} Emissions:
Emission Factor = 0.00054 lb/ton (crushing, AP 42, Table 11.19.2-2, 8/04)
Calculation: (250 ton/hr) * (8760 hr/yr) * (0.00054 lb/ton) * (ton/2000 lb) = 0.59 ton/yr

Finley Hydro-Screen (SCC 3-05-020-02, 03)

Maximum Process Rate = 70 ton/hr (Maximum plant process rate)
Maximum Hours of Operation = 8,760 hr/yr
Number of Screens = 1 screen(s) (Company Information)

Total PM Emissions:
Emission Factor = 0.0036 lb/ton (0.025 uncontrolled, 0.0022 controlled, AP 42, Table 11.19.2-2, 8/04)
Calculation: (70 ton/hr) * (8760 hr/yr) * (0.0036 lb/ton) * (ton/2000 lb) * (1 screen(s)) = 1.10 ton/yr
Calculation: (70 ton/hr) * (8760 hr/yr) * (0.0036 lb/ton) * (ton/2000 lb) * (1 screen(s)) * (1 - 0/100) = 1.10 ton/yr

Total PM_{10} Emissions:
Emission Factor = 0.00074 lb/ton (0.0087 uncontrolled, 0.00074 controlled, AP 42, Table 11.19.2-2, 8/04)
Calculation: (70 ton/hr) * (8760 hrs/yr) * (0.00074 lb/ton) * (ton/2000 lb) * (1 screen(s)) = 0.23 ton/yr
Calculation: (70 ton/hr) * (8760 hrs/yr) * (0.00074 lb/ton) * (ton/2000 lb) * (1 screen(s)) * (1 - 0/100) = 0.23 ton/yr
Homemade Screen (SCC 3-05-020-02, 03)

Maximum Process Rate = 35 ton/hr (Maximum plant process rate)
Maximum Hours of Operation = 8,760 hr/yr
Number of Screens = 1 screen(s) (Company Information)

Total PM Emissions:
Emission Factor = 0.0036 lb/ton (0.025 uncontrolled, 0.0022 controlled, AP 42, Table 11.19.2-2, 8/04)
Calculation: (35 ton/hr) * (8760 hr/yr) * (0.0036 lb/ton) * (ton/2000 lb) * (1 screen(s)) = 0.55 ton/yr
Calculation: (35 ton/hr) * (8760 hr/yr) * (0.0036 lb/ton) * (ton/2000 lb) * (1 screen(s)) * (1 - 0/100) = 0.55 ton/yr

Total PM_{10} Emissions:
Emission Factor = 0.00074 lb/ton (0.0087 uncontrolled, 0.00074 controlled, AP 42, Table 11.19.2-2, 8/04)
Calculation: (35 ton/hr) * (8760 hr/yr) * (0.00074 lb/ton) * (ton/2000 lb) * (1 screen(s)) = 0.11 ton/yr
Calculation: (35 ton/hr) * (8760 hr/yr) * (0.00074 lb/ton) * (ton/2000 lb) * (1 screen(s)) * (1 - 0/100) = 0.11 ton/yr

Diesel-Powered Engine/Generator

Note: Emissions are based on the power output of the engine (150 hp).
Operational Capacity of Engine = 150 hp
Hours of Operation = 8,760.00 hours

PM Emissions:
PM Emissions = 1.45 ton/yr (Assume PM = PM10)
PM Emissions = 2,890.80 lbs/yr (Assume PM = PM10)

PM_{10} Emissions:
Emission Factor = 0.0022 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (8,760 hours) * (150 hp) * (0.0022 lbs/hp-hr) * (ton/2000 lb) = 1.45 ton/yr
Calculation: (8,760 hours) * (150 hp) * (0.0022 lbs/hp-hr) = 2,890.80 lb/yr

NOx Emissions:
Emission Factor = 0.031 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (8,760 hours) * (150 hp) * (0.031 lbs/hp-hr) * (ton/2000 lb) = 20.37 ton/yr
Calculation: (8,760 hours) * (150 hp) * (0.031 lbs/hp-hr) = 40,734.00 lb/yr

CO Emissions:
Emission Factor = 0.00668 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (8,760 hours) * (150 hp) * (0.00668 lbs/hp-hr) * (ton/2000 lb) = 4.39 ton/yr
Calculation: (8,760 hours) * (150 hp) * (0.00668 lbs/hp-hr) = 8,777.52 lb/yr

VOC Emissions:
Emission Factor = 0.0025141 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, TOC, Exhaust & Crankcase, 10/96)
Calculation: (8,760 hours) * (150 hp) * (0.0025141 lbs/hp-hr) * (ton/2000 lb) = 1.65 ton/yr
Calculation: (8,760 hours) * (150 hp) * (0.0025141 lbs/hp-hr) = 3,303.53 lb/yr

SOx Emissions:
Emission Factor = 0.00205 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (8,760 hours) * (150 hp) * (0.00205 lbs/hp-hr) * (ton/2000 lb) = 1.347 ton/yr
Calculation: (8,760 hours) * (150 hp) * (0.00205 lbs/hp-hr) = 2,693.70 lb/yr

Diesel Engine Generator

Note: Emissions are based on the power output of the engine (100 hp).
Operational Capacity of Engine = 100 hp
Hours of Operation = 8,760.00 hours

PM Emissions:
PM Emissions = 0.96 ton/yr (Assume PM = PM10)
PM Emissions = 1,927.20 lb/yr (Assume PM = PM10)

PM_{10} Emissions:
Emission Factor = 0.0022 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)

Calculation: (8,760 hours) * (100 hp) * (0.0022 lbs/hp-hr) * (ton/2000 lb) = 0.96 ton/yr
Calculation: (8,760 hours) * (100 hp) * (0.0022 lbs/hp-hr) = 1,927.20 lb/yr

NOx Emissions:
Emission Factor = 0.031 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (8,760 hours) * (100 hp) * (0.031 lbs/hp-hr) * (ton/2000 lb) = 13.58 ton/yr
Calculation: (8,760 hours) * (100 hp) * (0.031 lbs/hp-hr) = 27,156.00 lb/yr

CO Emissions:
Emission Factor = 0.00668 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (8,760 hours) * (100 hp) * (0.00668 lbs/hp-hr) * (ton/2000 lb) = 2.93 ton/yr
Calculation: (8,760 hours) * (100 hp) * (0.00668 lbs/hp-hr) = 5,851.68 lb/yr

VOC Emissions:
Emission Factor = 0.0025141 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, TOC, Exhaust & Crankcase, 10/96)
Calculation: (8,760 hours) * (100 hp) * (0.0025141 lbs/hp-hr) * (ton/2000 lb) = 1.10 ton/yr
Calculation: (8,760 hours) * (100 hp) * (0.0025141 lbs/hp-hr) = 2,202.35 lb/yr

SOx Emissions:
Emission Factor = 0.00205 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (8,760 hours) * (100 hp) * (0.00205 lbs/hp-hr) * (ton/2000 lb) = 0.898 ton/yr
Calculation: (8,760 hours) * (100 hp) * (0.00205 lbs/hp-hr) = 1,795.80 lb/yr

Diesel Engine Generator

Note: Emissions are based on the power output of the engine (48 hp).
Operational Capacity of Engine = 48 hp
Hours of Operation = 8,760.00 hours

PM Emissions:
PM Emissions = 0.46 ton/yr (Assume PM = PM10)
PM Emissions = 925.06 lb/yr (Assume PM = PM10)

PM_{10} Emissions:
Emission Factor = 0.0022 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (8,760 hours) * (48 hp) * (0.0022 lbs/hp-hr) * (ton/2000 lb) = 0.46 ton/yr
Calculation: (8,760 hours) * (48 hp) * (0.0022 lbs/hp-hr) = 925.06 lb/yr

NOx Emissions:
Emission Factor = 0.031 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (8,760 hours) * (48 hp) * (0.031 lbs/hp-hr) * (ton/2000 lb) = 6.52 ton/yr
Calculation: (8,760 hours) * (48 hp) * (0.031 lbs/hp-hr) = 13,034.88 lb/yr

CO Emissions:
Emission Factor = 0.00668 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (8,760 hours) * (48 hp) * (0.00668 lbs/hp-hr) * (ton/2000 lb) = 1.40 ton/yr
Calculation: (8,760 hours) * (48 hp) * (0.00668 lbs/hp-hr) = 2,808.81 lb/yr

VOC Emissions:
Emission Factor = 0.0025141 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, TOC, Exhaust & Crankcase, 10/96)
Calculation: (8,760 hours) * (48 hp) * (0.0025141 lbs/hp-hr) * (ton/2000 lb) = 0.53 ton/yr
Calculation: (8,760 hours) * (48 hp) * (0.0025141 lbs/hp-hr) = 1,057.13 lb/yr
SOx Emissions:
Emission Factor = 0.00205 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Calculation: (8,760 hours) * (48 hp) * (0.00205 lbs/hp-hr) * (ton/2000 lb) = 0.431 ton/yr
Calculation: (8,760 hours) * (48 hp) * (0.00205 lbs/hp-hr) = 861.98 lb/yr

2 Concrete Batch Plants (up to 30 yd^3/hr total)

SOURCE	PM	PM_{10}
1. Aggregate Delivery to Ground Storage	0.85	0.40
2. Sand Delivery to Ground Storage	0.20	0.09
3. Aggregate Transfer to Conveyor	0.85	0.40
4. Sand Transfer to Conveyor	0.20	0.09
5. Aggregate Transfer to Elevated Storage	0.42	0.20
6. Sand Transfer to Elevated Storage	0.10	0.05
7. Cement Delivery to Storage Silo	0.03	0.01
8. Cement Supplement (Fly ash) Unloading to Silo	0.04	0.02
9. Weigh Hopper Loading of Sand/Aggregate	1.35	0.63
10. Truck Mix Loading	15.02	4.23
Total	**19.05**	**6.14**

1. Aggregate Delivery to Ground Storage
Maximum Process Rate = 27.98 tons/hr (46% of total concrete)
Hours of Operation = 8,760 hours

PM Emissions:
Emission Factor = 0.0069 lbs/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hours) * (27.98 ton/hr) * (0.0069 lbs/ton) * (ton/2000 lb) = 0.85 tons
Calculation: (8,760 hours) * (27.98 ton/hr) * (0.0069 lbs/ton) * (ton/2000 lb) * (1-0/100) = 0.85 tons

PM_{10} Emissions:
Emission Factor = 0.0033 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hours) * (27.98 ton/hr) * (0.0033 lb/ton) * (ton/2000 lb) = 0.40 tons
Calculation: (8,760 hours) * (27.98 ton/hr) * (0.0033 lb/ton) * (ton/2000 lb) * (1-0/100) = 0.40 tons

2. Sand Delivery to Ground Storage
Maximum Process Rate = 21.42 ton/hr (35% of total concrete)
Hours of Operation = 8,760 hr/yr

PM Emissions:
Emission Factor = 0.0021 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (21.42 ton/hr) * (0.0021 lb/ton) * (ton/2000 lb) = 0.20 tons
Calculation: (8,760 hr/yr) * (21.42 ton/hr) * (0.0021 lb/ton) * (ton/2000 lb) * (1-0/100) = 0.20 tons

PM_{10} Emissions:
Emission Factor = 0.00099 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (21.42 ton/hr) * (0.00099 lb/ton) * (ton/2000 lb) = 0.09 tons
Calculation: (8,760 hr/yr) * (21.42 ton/hr) * (0.00099 lb/ton) * (ton/2000 lb) * (1-0/100) = 0.09 tons

3. Aggregate Transfer to Conveyor
Maximum Process Rate = 27.98 ton/hr (46% of total concrete)
Hours of Operation = 8,760 hr/yr

PM Emissions:
Emission Factor = 0.0069 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (27.98 ton/hr) * (0.0069 lb/ton) * (ton/2000 lb) = 0.85 tons
Calculation: (8,760 hr/yr) * (27.98 ton/hr) * (0.0069 lb/ton) * (ton/2000 lb) * (1-0/100) = 0.85 tons
PM_{10} Emissions:
Emission Factor = 0.0033 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (27.98 ton/hr) * (0.0033 lb/ton) * (ton/2000 lb) = 0.40 tons
Calculation: (8,760 hr/yr) * (27.98 ton/hr) * (0.0033 lb/ton) * (ton/2000 lb) * (1-0/100) = 0.40 tons

4. Sand Transfer to Conveyor
Maximum Process Rate = 21.42 ton/hr (35% of total concrete)

Hours of Operation = 8,760 hr/yr

PM Emissions:
Emission Factor = 0.0021 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (21.42 ton/hr) * (0.0021 lb/ton) * (ton/2000 lb) = 0.20 tons
Calculation: (8,760 hr/yr) * (21.42 ton/hr) * (0.0021 lb/ton) * (ton/2000 lb) * (1-0/100) = 0.20 tons

PM_{10} Emissions:
Emission Factor = 0.00099 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (21.42 ton/hr) * (0.00099 lb/ton) * (ton/2000 lb) = 0.09 tons
Calculation: (8,760 hr/yr) * (21.42 ton/hr) * (0.00099 lb/ton) * (ton/2000 lb) * (1-0/100) = 0.09 tons

5. Aggregate Transfer to Storage Bins
Maximum Process Rate = 27.98 ton/hr (46% of total concrete)
Hours of Operation = 8,760 hr/yr

PM Emissions:
Emission Factor = 0.0069 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
PM Control Efficiency = 50% (water slurry)
Calculation: (8,760 hr/yr) * (27.98 ton/hr) * (0.0069 lb/ton) * (ton/2000 lb) = 0.85 tons
Calculation: (8,760 hr/yr) * (27.98 ton/hr) * (0.0069 lb/ton) * (ton/2000 lb) * (1-50/100) = 0.42 tons

PM_{10} Emissions:
Emission Factor = 0.0033 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
PM Control Efficiency = 50% (water slurry)
Calculation: (8,760 hr/yr) * (27.98 ton/hr) * (0.0033 lb/ton) * (ton/2000 lb) = 0.40 tons
Calculation: (8,760 hr/yr) * (27.98 ton/hr) * (0.0033 lb/ton) * (ton/2000 lb) * (1-50/100) = 0.20 tons

6. Sand Transfer to Storage Bins
Maximum Process Rate = 21.42 ton/hr (35% of total concrete)
Hours of Operation = 8,760 hr/yr

PM Emissions:
Emission Factor = 0.0021 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
PM Control Efficiency = 50% (water slurry)
Calculation: (8,760 hr/yr) * (21.42 ton/hr) * (0.0021 lb/ton) * (ton/2000 lb) = 0.20 tons
Calculation: (8,760 hr/yr) * (21.42 ton/hr) * (0.0021 lb/ton) * (ton/2000 lb) * (1-50/100) = 0.10 tons

PM_{10} Emissions:
Emission Factor = 0.00099 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
PM Control Efficiency = 50% (water slurry)
Calculation: (8,760 hr/yr) * (21.42 ton/hr) * (0.00099 lb/ton) * (ton/2000 lb) = 0.09 tons
Calculation: (8,760 hr/yr) * (21.42 ton/hr) * (0.00099 lb/ton) * (ton/2000 lb) * (1-50/100) = 0.05 tons

7. Cement Delivery to Silo
Maximum Process Rate = 7.37 ton/hr (12% of total concrete)
Hours of Operation = 8,760 hr/yr

PM Emissions:
Emission Factor = 0.00099 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (7.37 ton/hr) * (0.00099 lb/ton) * (ton/2000 lb) = 0.03 tons
Calculation: (8,760 hr/yr) * (7.37 ton/hr) * (0.00099 lb/ton) * (ton/2000 lb) * (1-0/100) = 0.03 tons

PM_{10} Emissions:
Emission Factor = 0.00034 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (7.37 ton/hr) * (0.00034 lb/ton) * (ton/2000 lb) = 0.01 tons

Calculation: (8,760 hr/yr) * (7.37 ton/hr) * (0.00034 lb/ton) * (ton/2000 lb) * (1-0/100) = 0.01 tons

8. Cement Supplement Unloading to Silo
Maximum Process Rate = 1.10 ton/hr (2% of total concrete)
Hours of Operation = 8,760 hr/yr

PM Emissions:
Emission Factor = 0.0089 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (1.10 ton/hr) * (0.0089 lb/ton) * (ton/2000 lb) = 0.04 tons
Calculation: (8,760 hr/yr) * (1.10 ton/hr) * (0.0089 lb/ton) * (ton/2000 lb) * (1-0/100) = 0.04 tons

PM_{10} Emissions:
Emission Factor = 0.0049 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
PM Control Efficiency = 0%
Calculation: (8,760 hr/yr) * (1.10 ton/hr) * (0.0049 lb/ton) * (ton/2000 lb) = 0.02 tons
Calculation: (8,760 hr/yr) * (1.10 ton/hr) * (0.0049 lb/ton) * (ton/2000 lb) * (1-0/100) = 0.02 tons

9. Weigh Hopper Loading of Sand/Aggregate
Maximum Process Rate = 60.36 ton/hr
Hours of Operation = 8,760 hr/yr

PM Emissions:
Emission Factor = 0.0051 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (60.36 ton/hr) * (0.0051 lb/ton) * (ton/2000 lb) = 1.35 tons
Calculation: (8,760 hr/yr) * (60.36 ton/hr) * (0.0051 lb/ton) * (ton/2000 lb) * (1-0/100) = 1.35 tons

PM_{10} Emissions:
Emission Factor = 0.0024 lb/ton (uncontrolled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (60.36 ton/hr) * (0.0024 lb/ton) * (ton/2000 lb) = 0.63 tons
Calculation: (8,760 hr/yr) * (60.36 ton/hr) * (0.0024 lb/ton) * (ton/2000 lb) * (1-0/100) = 0.63 tons

10. Truck Mix Loading of Cement/Supplement/Sand/Aggregate
Maximum Process Rate = 60.36 ton/hr
Hours of Operation = 8,760 hr/yr

PM Emissions:
Emission Factor = 0.0568 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (60.36 ton/hr) * (0.0568 lb/ton) * (ton/2000 lb) = 15.02 tons
Calculation: (8,760 hr/yr) * (60.36 ton/hr) * (0.0568 lb/ton) * (ton/2000 lb) * (1-0/100) = 15.02 tons

PM_{10} Emissions:
Emission Factor = 0.016 lb/ton (controlled, AP-42, Table 11.12-2, 6/06)
Calculation: (8,760 hr/yr) * (60.36 ton/hr) * (0.016 lb/ton) * (ton/2000 lb) = 4.23 tons
Calculation: (8,760 hr/yr) * (60.36 ton/hr) * (0.016 lb/ton) * (ton/2000 lb) * (1-0/100) = 4.23 tons

Diesel Motor for Finley Hydro-Screen

Operational Capacity of Engine = 1 gal/hr
Hours of Operation = 8,760.00 hours

PM Emissions:
PM Emissions = 0.19 ton/yr (Assume PM = PM10)

PM_{10} Emissions:
Emission Factor = 0.31 lbs/MMBtu/hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Heat Input = 0.137 MMBtu/gal
Calculation: (8,760 hours) * (1 gal/hr) * (0.31 lbs/MMBtu/hr) * (0.137 MMBtu/gal) * (ton/2000 lb) = 0.19 ton/yr

NOx Emissions:

Emission Factor = 0.031 lbs/MMBtu/hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Heat Input = 0.137 MMBtu/gal
Calculation: (8,760 hours) * (1 gal/hr) * (0.031 lbs/MMBtu/hr) * (0.137 MMBtu/gal) * (ton/2000 lb) = 0.02 ton/yr

CO Emissions:
Emission Factor = 0.00668 lbs/MMBtu/hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Heat Input = 0.137 MMBtu/gal
Calculation: (8,760 hours) * (1 gal/hr) * (0.0067 lbs/MMBtu/hr) * (0.137 MMBtu/gal) * (ton/2000 lb) = 0.00 ton/yr

VOC Emissions:
Emission Factor = 0.0025141 lbs/MMBtu/hr (AP-42, Sec. 3.3, Table 3.3-1, TOC, Exhaust & Crankcase, 10/96)
Heat Input = 0.137 MMBtu/gal
Calculation: (8,760 hours) * (1 gal/hr) * (0.0025 lbs/MMBtu/hr) * (0.137 MMBtu/gal) * (ton/2000 lb) = 0.00 ton/yr

SOx Emissions:
Emission Factor = 0.00205 lbs/MMBtu/hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Heat Input = 0.137 MMBtu/gal
Calculation: (8,760 hours) * (1 gal/hr) * (0.002 lbs/MMBtu/hr) * (0.137 MMBtu/gal) * (ton/2000 lb) = 0.00 ton/yr

Gasoline Engine for Homemade Screen

Operational Capacity of Engine = 1 gal/hr
Hours of Operation = 8,760.00 hours

PM Emissions:
PM Emissions = 0.21 ton/yr (Assume PM = PM10)

PM_{10} Emissions:
Emission Factor = 0.31 lbs/MMBtu/hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Heat Input = 0.123 MMBtu/gal
Calculation: (8,760 hours) * (1 gal/hr) * (0.31 lbs/MMBtu/hr) * (0.123 MMBtu/gal) * (ton/2000 lb) = 0.21 ton/yr

NOx Emissions:
Emission Factor = 0.031 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Heat Input = 0.123 MMBtu/gal
Calculation: (8,760 hours) * (1 gal/hr) * (0.031 lbs/hp-hr) * (ton/2000 lb) = 0.02 ton/yr

CO Emissions:
Emission Factor = 0.00668 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Heat Input = 0.123 MMBtu/gal
Calculation: (8,760 hours) * (1 gal/hr) * (0.00668 lbs/hp-hr) * (ton/2000 lb) = 0.00 ton/yr

VOC Emissions:
Emission Factor = 0.0025141 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, TOC, Exhaust & Crankcase, 10/96)
Heat Input = 0.123 MMBtu/gal
Calculation: (8,760 hours) * (1 gal/hr) * (0.0025141 lbs/hp-hr) * (ton/2000 lb) = 0.00 ton/yr

SOx Emissions:
Emission Factor = 0.00205 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Heat Input = 0.123 MMBtu/gal
Calculation: (8,760 hours) * (1 gal/hr) * (0.00205 lbs/hp-hr) * (ton/2000 lb) = 0.001 ton/yr

Gasoline Engine for Concrete Batch Plant

Operational Capacity of Engine = 1 gal/hr
Hours of Operation = 8,760.00 hours

PM Emissions:
PM Emissions = 0.08 ton/yr (Assume PM = PM10)

PM_{10} Emissions:

Emission Factor = 0.31 lbs/MMBtu/hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Heat Input = 0.123 MMBtu/gal
Calculation: (8,760 hours) * (1 gal/hr) * (0.31 lbs/MMBtu/hr) * (0.123 MMBtu/gal) * (ton/2000 lb) = 0.08 ton/yr

NOx Emissions:
Emission Factor = 0.031 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Heat Input = 0.123 MMBtu/gal
Calculation: (8,760 hours) * (1 gal/hr) * (0.031 lbs/hp-hr) * (ton/2000 lb) = 0.01 ton/yr

CO Emissions:
Emission Factor = 0.00668 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Heat Input = 0.123 MMBtu/gal
Calculation: (8,760 hours) * (1 gal/hr) * (0.00668 lbs/hp-hr) * (ton/2000 lb) = 0.00 ton/yr

VOC Emissions:
Emission Factor = 0.0025141 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, TOC, Exhaust & Crankcase, 10/96)
Heat Input = 0.123 MMBtu/gal
Calculation: (8,760 hours) * (1 gal/hr) * (0.0025141 lbs/hp-hr) * (ton/2000 lb) = 0.00 ton/yr

SOx Emissions:
Emission Factor = 0.00205 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Heat Input = 0.123 MMBtu/gal
Calculation: (8,760 hours) * (1 gal/hr) * (0.00205 lbs/hp-hr) * (ton/2000 lb) = 0.001 ton/yr

Gasoline Engine for Concrete Batch Plant

Operational Capacity of Engine = 0.25 gal/hr
Hours of Operation = 8,760.00 hours

PM Emissions:
PM Emissions = 0.04 ton/yr (Assume PM = PM10)

PM_{10} Emissions:
Emission Factor = 0.31 lbs/MMBtu/hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Heat Input = 0.123 MMBtu/gal
Calculation: (8,760 hours) * (0 gal/hr) * (0.31 lbs/MMBtu/hr) * (0.123 MMBtu/gal) * (ton/2000 lb) = 0.04 ton/yr

NOx Emissions:
Emission Factor = 0.031 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Heat Input = 0.123 MMBtu/gal
Calculation: (8,760 hours) * (0 gal/hr) * (0.031 lbs/hp-hr) * (ton/2000 lb) = 0.00 ton/yr

CO Emissions:
Emission Factor = 0.00668 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Heat Input = 0.123 MMBtu/gal
Calculation: (8,760 hours) * (0 gal/hr) * (0.00668 lbs/hp-hr) * (ton/2000 lb) = 0.00 ton/yr

VOC Emissions:
Emission Factor = 0.0025141 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, TOC, Exhaust & Crankcase, 10/96)
Heat Input = 0.123 MMBtu/gal
Calculation: (8,760 hours) * (0 gal/hr) * (0.0025141 lbs/hp-hr) * (ton/2000 lb) = 0.00 ton/yr

SOx Emissions:
Emission Factor = 0.00205 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)
Heat Input = 0.123 MMBtu/gal
Calculation: (8,760 hours) * (0 gal/hr) * (0.00205 lbs/hp-hr) * (ton/2000 lb) = 0.000 ton/yr

Storage Piles

Maximum Process Rate = 250 ton/hr (Maximum plant process rate)
Maximum Hours of Operation = 8,760 hr/yr
Number of Piles = 2 piles

PM Emissions:
Predictive equation for emission factor provided per AP 42, Sec. 13.2.4.3, 11/06.
Emission Factor = k (0.0032) * (U/5)^1.3 * (M / 2)^-1.4 = 0.00330 lb/ton
Where: k = particle size multiplier = 0.74 (Value for PM < 30 microns per AP 42, Sec. 13.2.4.3, 11/06)
U = mean wind speed = 8.2 mph (Average from values provided in AP 42, Sec. 13.2.4.3, 11/06)
M = material moisture content = 2.5% (Average from values provided in AP 42, Sec. 13.2.4.3, 11/06)
Control Efficiency = 50% (Water or chemical spray)
Calculation: (250 ton/hr) * (8760 hr/yr) * (0.00330 lb/ton) * (ton/2000 lb) * (2 piles) = 7.22 ton/yr
Calculation: (250 ton/hr) * (8760 hr/yr) * (0.00330 lb/ton) * (ton/2000 lb) * (2 piles) * (1 - 50/100) = 3.61 ton/yr

PM_{10} Emissions:
Predictive equation for emission factor provided per AP 42, Sec. 13.2.4.3, 11/06.
Emission Factor = k (0.0032) * (U/5)^1.3 * (M / 2)^-1.4 = 0.00156 lb/ton
Where: k = particle size multiplier = 0.35 (Value for PM < 10 microns per AP 42, Sec. 13.2.4.3, 11/06)
U = mean wind speed = 8.2 mph (Average from values provided in AP 42, Sec. 13.2.4.3, 11/06)
M = material moisture content = 2.5% (Average from values provided in AP 42, Sec. 13.2.4.3, 11/06)
Control Efficiency = 50% (Water or chemical spray)
Calculation: (250 ton/hr) * (8760 hrs/yr) * (0.00156 lb/ton) * (ton/2000 lb) * (2 piles) = 3.41 ton/yr
Calculation: (250 ton/hr) * (8760 hrs/yr) * (0.00156 lb/ton) * (ton/2000 lb) * (2 piles) * (1 - 50/100) = 1.71 ton/yr

Haul Roads

Vehicle Miles Traveled (VMT) per Day = 5 VMT/day (Estimate)	5	VMT/day
VMT per hour = (5 VMT/day) * (day/24 hrs) = 0.21 VMT/hr	0.21	VMT/hr
Hours of Operation = 8,760 hr/yr	8,760	hr/yr

PM Emissions:
Predictive equation for emission factor for unpaved roads at industrial sites provided per AP 42, Ch. 13.2.2, 11/06.
Emission Factor = k * (s / 12)^a * (W / 3)^b = 12.46 lb/VMT
Where: k = constant = 4.9 lbs/VMT (Value for PM30/TSP, AP 42, Table 13.2.2-2, 11/06)
s = surface silt content = 7.1 % (Mean value, sand/gravel processing, material storage area, AP 42, Table 13.2.2-1, 11/06)
W = mean vehicle weight = 54 tons (1994 average loaded/unloaded or a 40 ton truck)
a = constant = 0.7 (Value for PM30/TSP, AP 42, Table 13.2.2-2, 11/06)
b = constant = 0.45 (Value for PM30/TSP, AP 42, Table 13.2.2-2, 11/06)
Control Efficiency = 50% (Water spray or chemical dust suppressant)
Calculation: (8760 hr/yr) * (0.21 VMT/hr) * (12.46 lb/VMT) * (ton/2000 lb) = 11.37 tons/yr (Uncontrolled Emissions)
Calculation: (8760 hr/yr) * (0.21 VMT/hr) * (12.46 lb/VMT) * (ton/2000 lb) * (1-50/100) = 5.68 ton/yr (Apply 50% control efficiency)

PM10 Emissions:
Predictive equation for emission factor for unpaved roads at industrial sites provided per AP 42, Ch. 13.2.2, 11/06.
Emission Factor = k * (s / 12)^a * (W / 3)^b = 3.43 lb/VMT
Where: k = constant = 1.5 lbs/VMT (Value for PM10, AP 42, Table 13.2.2-2, 11/06)
s = surface silt content = 7.1 % (Mean value, sand/gravel processing, material storage area, AP 42, Table 13.2.2-1, 11/06)
W = mean vehicle weight = 54 tons (1994 average loaded/unloaded or a 40 ton truck)
a = constant = 0.9 (Value for PM10, AP 42, Table 13.2.2-2, 11/06)
b = constant = 0.45 (Value for PM10, AP 42, Table 13.2.2-2, 11/06)
Control Efficiency = 50% (Water spray or chemical dust suppressant)
Calculation: (8760 hr/yr) * (0.21 VMT/hr) * (3.43 lb/VMT) * (ton/2000 lb) = 3.13 tons/yr (Uncontrolled Emissions)

Calculation: (8760 hr/yr) * (0.21 VMT/hr) * (3.43 lb/VMT) * (ton/2000 lb) * (1-50/100) = 1.57 tons/yr (Apply 50% control efficiency)

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

Maximum Process Rate = 250 ton/hr (Maximum plant process rate)
Maximum Hours of Operation = 8,760 hr/yr
Number of Transfers = 6 transfer (Company Information)

Total PM Emissions:
Emission Factor = 0.00014 lb/ton (0.0030 uncontrolled, 0.00014 controlled, AP 42, Table 11.19.2-2, 8/04)
Calculation: (250 ton/hr) * (8760 hr/yr) * (0.00014 lb/ton) * (ton/2000 lb) * (6 transfer) = 0.92 ton/yr
Calculation: (250 ton/hr) * (8760 hr/yr) * (0.00014 lb/ton) * (ton/2000 lb) * (6 transfer) * (1 - 0/100) = 0.92 ton/yr

Total PM10 Emissions:
Emission Factor = 0.000046 lb/ton (0.00110 uncontrolled, 0.000046 controlled, AP 42, Table 11.19.2-2, 8/04)
Calculation: (250 ton/hr) * (8760 hr/yr) * (0.000046 lb/ton) * (ton/2000 lb) * (6 transfer) = 0.30 ton/yr
Calculation: (250 ton/hr) * (8760 hr/yr) * (0.000046 lb/ton) * (ton/2000 lb) * (6 transfer) * (1 - 0/100) = 0.30 ton/yr

IV. BACT Analysis

A BACT determination is required for any new or modified source. KEM shall install on the new or modified source the maximum air pollution control capability that is technologically practicable and economically feasible, except that BACT shall be utilized. A BACT analysis was not required for this permit action because the current permit action is considered an administrative action.

V. Existing Air Quality

MAQP #2678-03 is issued to KEM for the operation of a portable crushing/screening facility to be located at various locations throughout Montana. MAQP #2678-03 will cover the operations while operating at any location within Montana, excluding those counties that have a Department approved permitting program or in or within 10 kilometers (km) of any PM_{10} nonattainment area. Thus, under this permit, this facility will only be allowed to operate in those areas that are unclassified or classified as attainment areas for air quality.

VI. Taking or Damaging Analysis

As required by 2-10-105, MCA, the Department conducted the following private property taking and damaging assessment.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private

		property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

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

VII. Environmental Assessment

An environmental assessment was not required for this permit action because it is considered an administrative action.

Permit Analysis Prepared by: Trista Glazier
Date: May 8, 2009