Montana Department of
ENVIRONMENTAL QUALITY
Brian Schweitzer, Governor
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August 27, 2012

Mr. Keith Engebretson
LHC, Inc.
P.O. Box 7338
Kalispell, MT 59904

Dear Mr. Engebretson:

Montana Air Quality Permit #4741-01 is deemed final as of August 25, 2012, by the Department of Environmental Quality (Department). This permit is for a portable drum-mix asphalt plant. 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,

Charles Homer
Manager, Air Permitting, Compliance and Registration
Air Resources Management Bureau
(406) 444-5279

Deanne Fischer, P.E.
Environmental Engineer
Air Resources Management Bureau
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CH:DF
Enclosure

Montana Department of Environmental Quality
Permitting and Compliance Division

Montana Air Quality Permit #4741-01

LHC, Inc.
P.O. Box 7338
Kalispell, MT 59904

August 25, 2012

MONTANA AIR QUALITY PERMIT

Issued To: LHC, Inc.
P.O. Box 7338
Kalispell, MT 59904

MAQP: #4741-01
Administrative Amendment (AA) Request Received: 07/11/2012
Department's Decision on AA:08/09/2012
Permit Final: 08/25/2012
AFS #:777-4171

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

SECTION I: Permitted Facilities

A. Plant Location

LHC operates a portable drum mix asphalt plant. The legal description of the facility's home pit is in Sections 25 and 26, Township 29N, Range 22W, Flathead County, Montana. However, MAQP #4741-01 applies while operating at any location in Montana, except 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, Montana*. An addendum will be required for locations in or within 10 km of certain PM_{10} nonattainment areas.

Addendum 2 applies to the LHC facility while operating at any location in or within 10 km of certain PM_{10} nonattainment areas during the summer months (April 1 – September 30) and at sites approved by the Department during the winter months (October 1 – March 31).

B. Current Permit Action

On July 11, 2012, the Department received a request from LHC for an administrative amendment (AA) to change Section II.A.8. of MAQP #4741-00 and Section III.A.6 of Addendum 1 to clarify the fuel type used in the asphalt heater and the hot mix dryer. The current permit action is an administrative amendment (AA) that will correctly specify that the asphalt heater will be fueled with propane and the hot mix dryer will be fueled with diesel.

SECTION II: Conditions and Limitations

A. Emission Limitations

1. Asphalt plant particulate matter emissions shall be limited to 0.04 grains per dry standard cubic feet (gr/dscf) from the asphalt drum mix dryer exhaust (ARM 17.8.340, ARM 17.8.752, and 40 Code of Federal Regulations (CFR) 60, Subpart I).

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

3. LHC shall not cause or authorize to be discharged into the atmosphere from dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler; systems for mixing hot mix asphalt; and the loading,

transfer, and storage systems associated with emission control systems, any visible emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart I).

4. Water and spray bars shall be available on site at all times and operated as necessary to maintain compliance with the opacity limitations in Sections II.A.2 and II.A.3 (ARM 17.8.749).

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

6. LHC 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 and ARM 17.8.752).

7. LHC shall install, operate, and maintain a fabric-filter baghouse for particulate matter air pollution control on the asphalt drum mix dryer exhaust. A device to measure the pressure drop (magnehelic gauge, manometer, etc.) on the control devices (baghouse) must be installed and maintained. Pressure drop must be measured in inches of water. Temperature indicators at the control device inlets and outlets must be installed and maintained (ARM 17.8.749 and ARM 17.8.752).

8. LHC shall use only diesel as fuel for the asphalt heater, and propane as fuel for the hot mix dryer (ARM 17.8.749).

9. Hours of operation of the asphalt plant (including the generator engines) shall be limited to 2,000 hours per rolling 12-month time period (ARM 17.8.749 and ARM 17.8.1204).

10. Total asphalt plant production shall be limited to 960,000 tons per year during any rolling 12-month time period (ARM 17.8.749 and ARM 17.8.1204).

11. Once a stack test is performed, the asphalt production rate shall be limited to the average production rate during the last source test demonstrating compliance (ARM 17.8.749).

12. LHC shall not operate or have on-site more than 2 diesel engines/generators. The total maximum combined capacity of the engines that drive the generators shall not exceed 1,999 bhp (ARM 17.8.749).

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

14. LHC shall comply with all applicable standards and limitations, monitoring, reporting, recordkeeping, testing, and notification requirements contained in 40 CFR 60, Subpart I, *Standards of Performance for Hot Mix Asphalt Facilities* (ARM 17.8.340 and 40 CFR 60, Subpart I).

15. LHC shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* and 40 CFR 63, Subpart ZZZZ, *National Emissions Standards for Hazardous Air*

Pollutants for Stationary Reciprocating Internal Combustion Engines, for any applicable diesel engine (ARM 17.8.340; 40 CFR 60, Subpart IIII; ARM 17.8.342 and 40 CFR 63, Subpart ZZZZ).

B. Testing Requirements

1. Within 60 days after achieving maximum production, but no later than 180 days after initial start-up, an Environmental Protection Agency (EPA) Methods 1-5 source test shall be performed on the asphalt drum mix dryer exhaust stack to demonstrate compliance with Section II.A.1. An EPA Method 9 opacity test shall be performed in conjunction with all particulate tests to demonstrate compliance with the conditions specified in Section II.A.2. Testing shall continue on an every 4-year basis or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105, ARM 17.8.340, ARM 17.8.749, and 40 CFR 60 Subpart I).

2. Since asphalt production will be limited to the average production rate during the last compliance source test, it is suggested that the test be performed at the highest practical production rate (ARM 17.8.749).

3. LHC may retest at any time in order to test at a higher production rate (ARM 17.8.749).

4. Temperature and pressure drop across the pollution control device must be recorded daily and kept on site according to Section II.C.7 (ARM 17.8.749).

5. Temperature and pressure drop across the pollution control device must be recorded during the compliance source test and reported as part of the test results (ARM 17.8.749).

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

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

C. Operational Reporting Requirements

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

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

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

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

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

5. LHC shall document, by month, the hours of operation of the facility including the diesel engines/generators. By the 25th day of each month, LHC shall total the hours of operation of the facility for the previous month. The monthly information will be used to demonstrate compliance with the rolling 12-month limitation in Section II.A.9 and II.A.12. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

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

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

SECTION III: Addendum

LHC shall comply with all conditions in Addendum 2 to MAQP #4741-01, as applicable (ARM 17.8.749).

SECTION IV: General Conditions

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

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

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

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

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

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

G. Air Quality Operation Fees – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by LHC may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Duration of Permit – Construction or installation must begin or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

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

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

Montana Air Quality Permit (MAQP) Analysis
LHC, Inc.
MAQP #4741-01

I. Introduction/Process Description

LHC, Inc. (LHC) owns and operates a portable drum mix asphalt plant with a maximum rated design capacity of 480 tons per hour (TPH).

A. Permitted Equipment

1. A portable drum mix asphalt plant and associated equipment with a maximum production capacity of 480 TPH utilizing a propane fueled burner in the asphalt dryer and a diesel fueled hot asphalt oil heater.

2. Two, diesel-fired engines/generators with a total combined maximum capacity of up to 1,999 brake horsepower (bhp).

B. Source Description

For a typical operational set-up, aggregate is loaded into the cold feed bins. The aggregate is conveyed into the single drum dryer/mixer to dry the aggregate and mix with the asphalt cement (AC) hot oil that is supplied by the ADM direct fire AC tank. The combined aggregate and oil mixture spills into the 75 foot drag chain and is deposited into the 65 ton surge bin. All the exhaust removed from the drum dryer/mixer is processed in the baghouse to remove any fines. The baghouse is pulsed with air to remove the fines which are then returned back into the drum dryer/mixer for recycling.

C. Permit History

On April 30, 2012 LHC submitted a complete permit application to operate a portable drum mix asphalt plant and associated equipment with a maximum production capacity of 480 TPH utilizing a propane fired burner in the asphalt dryer, and a diesel fueled hot asphalt oil heater. The plant would be powered by two diesel fired engine/generators with a maximum combined capacity not to exceed 1,999 bhp. In addition, LHC also requested an addendum to operate in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) nonattainment areas. The application was assigned **MAQP #4741-00** and **Addendum 1** was established. The facility's home pit is located in Sections 25 and 26, Township 29N, Range 22W, Flathead County, Montana.

D. Current Permit Action

On July 11, 2012, the Department received a request from LHC for an administrative amendment (AA) to change Section II.A.8.of MAQP #4741-00 and Section III.A.6. of the associated Addendum 1 to clarify the fuel type used in the asphalt heater and the hot mix dryer. The current permit action is an administrative amendment (AA) that will correctly specify that the asphalt heater will be fueled with diesel and the hot mix dryer will be fueled with propane. **MAQP #4741-01** replaces MAQP#4741-00 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 of Environmental Quality (Department). Upon request, the Department will provide references for locations of complete copies of all applicable rules and regulations where appropriate.

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

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

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

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

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

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

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

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

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide

4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}
11. ARM 17.8.230 Fluoride in Forage

LHC must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, LHC shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause or authorize to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this section.

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

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

6. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). LHC is considered an NSPS-affected facility under 40 CFR Part 60 and is subject to the requirements of the following subparts.

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

   b. 40 CFR 60, Subpart I – Standards of Performance for Hot Mix Asphalt Facilities. In order for an asphalt plant to be subject to this subpart, the facility must meet the definition of an affected facility and the affected equipment must have been constructed, reconstructed, or modified after August 31, 1983. Based on the information submitted by LHC, the asphalt plant equipment to be used under MAQP #4741-01 is subject to this subpart.

c. 40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE). Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are manufactured after April 1, 2006, and are not fire pump engines, and owners and operators of stationary CI ICE that modify or reconstruct their stationary CI ICE after July 11, 2005, are subject to this subpart. Based on the information submitted by LHC, the CI ICE equipment to be used under MAQP #4741-01 is not subject to this subpart because of the manufacturing date and size. Since this MAQP is written in a de minimis-friendly manner, this subpart may apply to other facility CI ICE in the future.

7. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. This rule incorporates, by reference, 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Source Categories. LHC is considered a NESHAP-affected facility under 40 CFR Part 63 and is subject to the requirements of the following subparts.

a. 40 CFR 63, Subpart A – General Provisions apply to all equipment or facilities subject to a NESHAPs Subpart as listed below.

b. 40 CFR 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants (HAPs) for Stationary Reciprocating Internal Combustion Engines (RICE). An owner or operator of a stationary reciprocating internal combustion engine (RICE) at a major or area source of HAP emissions is subject to this rule except if the stationary RICE is being tested at a stationary RICE test cell/stand. An area source of HAP emissions is a source that is not a major source. Based on the information submitted by LHC, the RICE equipment to be used under MAQP #4741-01 may potentially be subject to this subpart because the facility is an area source of HAP emissions. However since the RICE is intended to be portable, LHC does not have to comply with the applicable emission limitations and operating limitations of 40 CFR 63, Subpart ZZZZ. This subpart would become applicable if a RICE remains in a location for more than 12 months.

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

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

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department.

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

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

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

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify, or use any asphalt plant, crusher or screen that has the potential to emit (PTE) greater than 15 tons per year of any pollutant. LHC has a PTE greater than 15 tons per year of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}), oxides of nitrogen (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC); therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, modification, or use of a source. A permit application was not required for the current permit action because the permit change is considered an administrative permit change. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. An affidavit of publication of public notice was not required for the current permit action because the permit change is considered an administrative permit change.

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

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

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

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

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

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

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

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

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

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

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

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

This facility is not a major stationary source because it is not a listed source and the facility's PTE is less than 250 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 PM_{10} in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #4741-01 for LHC, the following conclusions were made:

a. The facility's PTE is less than 100 tons/year for any pollutant.

b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year of all HAPs.

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

d. This facility is subject to current NSPS (40 CFR 60, Subpart I– Standards of Performance for Hot Mix Asphalt Plants applies to this facility and 40 CFR 60, Subpart IIII – Standards of Performance for CI ICE may potentially apply to this facility).

e. This facility is potentially subject to current NESHAP standards (40 CFR 63, Subpart ZZZZ – NESHAP for Stationary RICE).

f. This source is not a Title IV affected source.

g. This source is not a solid waste combustion unit.

h. This source is not an EPA designated Title V source.

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

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

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

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

3. ARM 17.8.1207 Certification of Truth, Accuracy, and Completeness. The compliance certification submittal by ARM 17.8.1204(3) shall contain certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under this subchapter shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

III. BACT Determination

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

A BACT determination was not required for the current permit action because the permit change is considered an administrative permit change.

IV. Emission Inventory**

ANNUAL	tons/yr						
Emission Source	**PM**	**PM_{10}**	**$PM_{2.5}$**	**NOx**	**CO**	**VOC**	**SO_2**
Cold Aggregate Storage Piles	1.55	0.73	0.11	--	--	--	--
Cold Aggregate Handling/Conveyors	0.13	0.04		--	--	--	--
Cold Aggregate Screen	1.73	1.06	--	--	--	--	--
Diesel-Fired Asphalt Oil Heater (diesel)	1.73	--		--	0.006	--	--
480 TPH Drum Mix Asphalt Dryer (propane)	13.64	10.61	10.22	12.48	62.40	15.36	1.63
Asphalt Surge Bin (silo) Filling	0.28	0.28	0.28	--	0.57	5.50	--
Plant Load-Out	0.11	0.11	0.11	--	0.10	0.29	--
Haul Roads / Vehicle Traffic	1.45	0.41	0.04	--	--	--	--
1,465 hp Diesel Engine Generator	3.22	3.22	3.22	45.42	9.79	3.68	3.00
534 bhp Diesel Engine Generator	1.17	1.17	1.17	16.55	3.57	1.34	1.09
Total Emissions	**25.02**	**17.65**	**15.16**	**74.45**	**76.42**	**26.17**	**5.73**

Footnotes:
a. Inventory reflects enforceable limits on hours of operation to keep allowable emissions below the Title V threshold AND 80 tpy.
b. All PM values include filterable and condensable fractions. Filterable fractions are based on NSPS limit of 0.04 gr/dscf.
c. Emission factors forpiles based on the conditions assumed in the predictive equation without add'l water spray control (AP42, 13.2.4.4)

**** CO = carbon monoxide**
HAPs = hazardous air pollutants
hp = horsepower
lb = pound
N/A = not applicable
ND = no data available
NO_X = oxides of nitrogen
PM = particulate matter
PM_{10} = particulate matter with an aerodynamic diameter of 10 microns or less
$PM_{2.5}$ = particulate matter with an aerodynamic diameter of 2.5 microns or less
SO_X = oxides of sulfur
TPH = tons per hour
TPY = tons per year
VOC = volatile organic compounds
yr = year

Cold Aggregate Storage Piles

Maximum Process Rate = 480 ton/hr (Maximum plant process rate)	480	ton/hr
Maximum Hours of Operation = 2,000 hrs/yr	2,000	hrs/yr
Number of Piles = 1 pile	1	pile

PM Emissions:
Predictive equation for emission factor for storage piles per AP 42, Sec. 13.2.4.3, 11/06. (conservative application to bins)

Emission Factor = k (0.0032) * (U/5)^1.3 * (M / 2)^-1.4 =	0.00322	lb/ton
Where: k = particle size multiplier (Value for PM < 30 microns per AP 42, Sec. 13.2.4.3, 11/06) =	0.74	
U = mean wind speed (Estimate avg based on values provided in AP 42, Sec. 13.2.4.3, 11/06)=	8.15	mph
M = material moisture content (Estimate avg based on values provided in AP 42, Sec. 13.2.4.3, 11/06)=	2.525	%
Control Efficiency = 0% (Water or chemical spray)	0	%
Calculation: (480 ton/hr) * (2000 hrs/yr) * (0.00322 lb/ton) * (ton/2000 lb) * (1 pile) =	**1.55**	ton/yr

Note: Based on the conditions assumed in the predictive equation without add'l water spray control.

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 =	0.00153	lb/ton
Where: k = particle size multiplier (Value for PM < 10 microns per AP 42, Sec. 13.2.4.3, 11/06)	0.35	
U = mean wind speed (Estimate avg based on values provided in AP 42, Sec. 13.2.4.3, 11/06)	8.15	mph
M = material moisture content (Estimate avg based on values provided in AP 42, Sec. 13.2.4.3, 11/06)=	2.525	%
Control Efficiency = 0% (Water or chemical spray)	0	%
Calculation: (480 ton/hr) * (2000 hrs/yr) * (0.00153 lb/ton) * (ton/2000 lb) * (1 pile) =	**0.73**	ton/yr

Note: Based on the conditions assumed in the predictive equation without add'l water spray control.

Filterable $PM_{2.5}$ Emissions:

Predictive equation for emission factor provided per **AP 42, Sec. 13.2.4.3, 11/06**.		
Emission Factor = k (0.0032) * (U/5)^1.3 * (M / 2)^-1.4 =	0.00023	lb/ton
Where: k = particle size multiplier (Value for PM < 2.5 microns per AP 42, Sec. 13.2.4.3, 11/06)=	0.053	
U = mean wind speed (Estimate avg based on values provided in AP 42, Sec. 13.2.4.3, 11/06)=	8.15	mph
M = material moisture content (Estimate avg based on values provided in AP 42, Sec. 13.2.4.3, 11/06)=	2.5	%
Control Efficiency = 0% (Water or chemical spray)	0	%
Calculation: (480 ton/hr) * (2000 hrs/yr) * (0.00023 lb/ton) * (ton/2000 lb) * (1 pile) =	**0.11**	ton/yr

Conveyor Transfer Point (SCC 3-05-02006)

Maximum Process Rate = 480 ton/hr (Maximum plant process rate)	480	ton/hr
Maximum Hours of Operation = 2,000 hrs/yr	2,000	hrs/yr
Number of Transfers = 2 transfers (Assumed)	2	transfers

Total PM Emissions:

Emission Factor = 0.00014 lb/ton (controlled, AP 42, Table 11.19.2-2, 8/04)	0.00014	lb/ton
Calculation: (480 ton/hr) * (2000 hrs/yr) * (2 transfers) * (ton/2000 lb) * (0.00014 lb/ton) =	**0.13**	ton/yr
Note: Based on controlled emissions factors		

Total PM10 Emissions:

Emission Factor = 0.000046 lb/ton (controlled, AP 42, Table 11.19.2-2, 8/04)	0.000046	lb/ton
Calculation: (480 ton/hr) * (2000 hrs/yr) * (0.5376 lbs/day) * (ton/2000 lb) * (0.00014 lb/ton) =	**0.04**	ton/yr
Note: Based on controlled emissions factors		

Cold Aggregate Screen

Maximum Process Rate =	480	ton/hr
Maximum Hours of Operation =	2,000	hrs/year
Number of Screens =	1	screens

Total PM Emissions:

Emission Factor = 0.0036 lb/ton (controlled, AP 42, Table 11.19.2-2, 8/04)	0.0036	lb/ton
Calculation: (480 ton/hr) * (2000 hrs/year) * (1 screens) * (ton/2000 lb) * (0.0036 lb/ton) =	**1.7**	ton/yr
Note: Based on controlled emissions factors		

Total PM10 Emissions:

Emission Factor = 0.0022 lb/ton (controlled, AP 42, Table 11.19.2-2, 8/04)	0.0022	lb/ton
Calculation: (480 ton/hr) * (2000 hrs/year) * (1 screens) * (ton/2000 lb) * (0.0022 lb/ton) =	**1.06**	ton/yr

Hot Oil Heater

Production Rate =	5.00	gal/hr
Maximum Hours of Operation =	2,000	hrs/yr

CO Emissions:

Emission Factor = 0.0012 lb/gal (AP-42, Section 11.1, Table 11.1-13, No. 2 fuel oil, 3/04)	0.0012	lb/gal
Calculation: (2000 hrs/yr) * (5.00 gal/hr) * (0.0012 lb/gal) * (ton/2000 lb) =	**0.006**	ton/yr

Dryer, fabric filter (SCC 3-05-002-05, -55 to -63)

Propane fuel

Maximum Process Rate (Application information):	480	ton/hr
Maximum Hours of Operation (Annual):	2,000	hrs/yr
Dry Standard Volumetric Flowrate:	12,636	dscfm

Filterable PM Emissions:

Based on Emission Limit		
Emission Factor (permit limit)	0.04	gr/dscf

Calculation: (0.04 gr/dscf) * (12,636 dscfm) * (1 lb / 7000 gr) * (60 min/hr) =	**4.33**	lb/hr
Calculation: (4.33 lb/hr) * (2000 hrs/yr) * (0.0005 ton/lb) =	**4.33**	ton/yr

Filterable PM_{10} Emissions:

Based on Emission Limit

Emission Factor (AP-42 Table 11.1-4, PM10 is 30% of filtereable PM)	0.012	gr/dscf
Calculation: (0.012 gr/dscf) * (12,636 dscfm) * (1 lb / 7000 gr) * (60 min/hr) =	**1.30**	lb/hr
Calculation: (1.30 lb/hr) * (2000 hrs/yr) * (0.0005 ton/lb) =	**1.30**	ton/yr

Filterable $PM_{2.5}$ Emissions:

Based on Emission Limit

Emission Factor (AP-42 Table 11.1-4, PM10 is 21% of filtereable PM)	0.0084	gr/dscf
Calculation: (0.0084 gr/dscf) * (12,636 dscfm) * (1 lb / 7000 gr) * (60 min/hr) =	**0.91**	lb/hr
Calculation: (0.91 lb/hr) * (2000 hrs/yr) * (0.0005 ton/lb) =	**0.91**	ton/yr

Condensable $PM_{2.5}$ Emissions:

Based on AP-42 Drum mix dryer fired with natural gas, propane, fuel oil, and waste oil. The data indicate that fuel type does not significantly effect PM emissions

Emission Factor (fabric filter, AP 42, Table 11.1-3, 3/04, inorganic+organic)	0.0194	lb/ton
Control Efficiency = 0%	0	%
Calculation: (480 ton/hr) * (2000 hrs/yr) * (0.0194 lb/ton) * (ton/2000 lb) =	**9.31**	ton/yr
Calculation: (480 ton/hr) * (2000 hrs/yr) * (0.0194 lb/ton) * (ton/2000 lb) * (1 - 0/100) =	**9.31**	ton/yr

CO Emissions:

Emission Factor (AP 42, Table 11.1-7, 03/04, propane (as natural gas))	0.13	lb/ton
Control Efficiency = 0%	0	%
Calculation: (480 ton/hr) * (2000 hrs/yr) * (0.13 lb/ton) * (ton/2000 lb) =	**62.40**	ton/yr
Calculation: (480 ton/hr) * (2000 hrs/yr) * (0.13 lb/ton) * (ton/2000 lb) * (1 - 0/100) =	**62.40**	ton/yr

NOx Emissions:

Emission Factor (propane (as natural gas), AP 42, Table 11.1-7, 3/04)	0.026	lb/ton
Control Efficiency = 0%	0	%
Calculation: (480 ton/hr) * (2000 hrs/yr) * (0.026 lb/ton) * (ton/2000 lb) =	**12.48**	ton/yr
Calculation: (480 ton/hr) * (2000 hrs/yr) * (0.026 lb/ton) * (ton/2000 lb) * (1 - 0/100) =	**12.48**	ton/yr

SO2 Emissions:

Emission Factor (AP 42, Table 11.1-8, 3/04 propane (as natural gas))	0.0034	lb/ton
Control Efficiency = 0%	0	%
Calculation: (480 ton/hr) * (2000 hrs/yr) * (0.0034 lb/ton) * (ton/2000 lb) =	**1.63**	ton/yr
Calculation: (480 ton/hr) * (2000 hrs/yr) * (0.0034 lb/ton) * (ton/2000 lb) * (1 - 0/100) =	**1.63**	ton/yr

VOC Emissions:

Emission Factor (AP 42, Table 11.1-8, 3/04 propane (as natural gas))	0.032	lb/ton
Control Efficiency = 0%	0	%
Calculation: (480 ton/hr) * (2000 hrs/yr) * (0.032 lb/ton) * (ton/2000 lb) =	**15.36**	ton/yr
Calculation: (480 ton/hr) * (2000 hrs/yr) * (0.032 lb/ton) * (ton/2000 lb) * (1 - 0/100) =	**15.36**	ton/yr

Silo Filling (SCC 3-05-002-13)

Maximum Process Rate (Maximum plant process rate)=	480	ton/hr
Maximum Hours of Operation (Annual)=	2,000	hr/year

Total PM Emissions:

(Total PM is assumed to be predominantly PM-2.5 since emissions consist of condensed vapors; AP 42, Table 11.1-14.)

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.

Emission Factor = 0.000332 + 0.00105(-V)e^((0.0251)(T + 460) - 20.43) =	0.00059	lb/ton
Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)	-0.5	
T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)	325	F
Calculation: (480 ton/hr) * (2000 hr/year) * (0.00059 lb/ton) * (ton/2000 lb) =	**0.28**	TPY

VOC Emissions: (VOC = TOC * 94%, AP-42, Table 11.1-16, 3/04)

Predictive equation for TOC emission factor provided per AP 42, Table 11.1-14, 3/04.

Emission Factor = 0.0504(-V)e^((0.0251)(T + 460) - 20.43) * (94%) =	0.01146	lb/ton
Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)	-0.5	
T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)	325	F
Calculation: (480 ton/hr) * (2000 hr/year) * (0.01146 lb/ton) * (ton/2000 lb) =	**5.50**	TPY

CO Emissions:

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.		
Emission Factor = 0.00488(-V)e^((0.0251)(T + 460) - 20.43) = 0.00118 lb/ton	0.00118	lb/ton
Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)	-0.5	
T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)	325	F
Calculation: (480 ton/hr) * (2000 hr/year) * (0.00118 lb/ton) * (ton/2000 lb) =	**0.57**	TPY

Plant Load-Out (SCC 3-05-002-14)

Maximum Process Rate (Maximum plant process rate)=	480	ton/hr
Maximum Hours of Operation =	2,000	hrs/yr

Total PM Emissions: (Total PM is assumed to be predominantly PM-2.5 since emissions consist of condensed vapors; AP 42, Table 11.1-14.)

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.		
Emission Factor = 0.000181 + 0.00141(-V)e^((0.0251)(T + 460) - 20.43) = 0.00023 lb/ton	0.00023	lb/ton
Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)	-0.5	
T = HMA mix temperature = 250 F (Max. from application, process flow narrative)	250	F
Calculation: (480 ton/hr) * (2000 hrs/yr) * (0.00023 lb/ton) * (ton/2000 lb) =	**0.112**	ton/yr

VOC Emissions: (VOC = TOC * 94%, AP-42, Table 11.1-16, 3/04)

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.		
Emission Factor = 0.0172(-V)e^((0.0251)(T + 460) - 20.43) * 94% = 0.00060 lb/ton	0.00060	lb/ton
Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)	-0.5	
T = HMA mix temperature = 250 F (Max. from application, process flow narrative)	250	F
Calculation: (480 ton/hr) * (2000 hrs/yr) * (0.00060 lb/ton) * (ton/2000 lb) =	**0.29**	ton/yr

CO Emissions:

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.		
Emission Factor = 0.00558(-V)e^((0.0251)(T + 460) - 20.43) = -0.50000	0.00021	
Where: V = Asphalt volatility = 250 (Default value per AP 42, Table 11.1-14, 3/04)	-0.5	
T = HMA mix temperature = 0 % (Default value per AP 42, Table 11.1-14, 3/04)	250	F
Calculation: (480 ton/hr) * (2000 hrs/yr) * (0.00021) * (ton/2000 lb) =	0.10	ton/yr

Haul Roads

Vehicle Miles Traveled (VMT) per Day (Estimate)	5	VMT/day
VMT per hour = (5 VMT/day) * (day/24 hrs) =	0.21	VMT/hr
Hours of Operation =	2,000	hrs/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 = 13.90 lb/VMT	13.90	lb/VMT
Where: k = constant = 4.9 lbs/VMT (Value for PM30/TSP)	4.9	lbs/VMT
s = surface silt content = 8.3 % (Mean value, sand/gravel processing, material storage area)	8.3	%
W = mean vehicle weight = 54 tons (1994 average loaded/unloaded or a 40 ton truck)	54	tons
a = constant = 0.7 (Value for PM30/TSP)	0.7	
b = constant = 0.45 (Value for PM30/TSP)	0.45	
Control Efficiency = 50% (Water spray or chemical dust suppressant)	50	%
Calculation: (2000 hrs/yr) * (0.21 VMT/hr) * (13.90 lb/VMT) * (ton/2000 lb) =	**2.90**	tons/yr
Calculation: (2000 hrs/yr) * (0.21 VMT/hr) * (13.90 lb/VMT) * (ton/2000 lb) * (1-50/100) =	**1.45**	tons/yr

PM10 Emissions:

Emission Factor = k * (s / 12)^a * (W / 3)^b = 3.95 lb/VMT	3.95	lb/VMT
Where: k = constant = 1.5 lbs/VMT (Value for PM10)	1.5	lbs/VMT
s = surface silt content = 8.3 % (Mean value, sand/gravel processing, material storage area)	8.3	%
W = mean vehicle weight = 54 tons (1994 average loaded/unloaded or a 40 ton truck)	54	tons
a = constant = 0.9 (Value for PM10)	0.9	
b = constant = 0.45 (Value for PM10)	0.45	
Control Efficiency = 50% (Water spray or chemical dust suppressant)	50	%
Calculation: (2000 hrs/yr) * (0.21 VMT/hr) * (3.95 lb/VMT) * (ton/2000 lb) =	**0.82**	tons/yr
Calculation: (2000 hrs/yr) * (0.21 VMT/hr) * (3.95 lb/VMT) * (ton/2000 lb) * (1-50/100) =	**0.41**	tons/yr

$PM_{2.5}$ Emissions:

Emission Factor = k * (s / 12)^a * (W / 3)^b = 0.40 lb/VMT	0.40	lb/VMT
Where: k = constant = 0.15 lbs/VMT (Value for PM2.5)	0.15	lbs/VMT
s = surface silt content = 8.3 % (Mean value, sand/gravel processing, material storage area)	8.3	%
W = mean vehicle weight = 54 tons (1994 average loaded/unloaded or a 40 ton truck)	54	tons
a = constant = 0.9 (Value for PM2.5)	0.9	
b = constant = 0.45 (Value for PM2.5)	0.45	
Control Efficiency = 50% (Water spray or chemical dust suppressant)	50	%
Calculation: (2000 hrs/yr) * (0.21 VMT/hr) * (0.40 lb/VMT) * (ton/2000 lb) =	**0.08**	tons/yr
Calculation: (2000 hrs/yr) * (0.21 VMT/hr) * (0.40 lb/VMT) * (ton/2000 lb) * (1-50/100) =	**0.04**	tons/yr

Diesel Engine Generator (1465 bhp)

Operational Capacity of Generator	910	kw
Operational Capacity of Engine = 1,465 hp	1,465	hp
Hours of Operation = 2,000 hours	2,000	hours

Total PM/PM10/PM2.5 Emissions:

Emission Factor(AP-42, Sec. 3.3, Table 3.3-1, 10/96) =	2.20E-03	lbs/hp-hr
Calculation: (2,000 hours) * (1,465 hp) * (0.0022 lbs/hp-hr) * (ton/2000 lb) =	**3.22**	ton/yr

NOx Emissions:

Emission Factor(AP-42, Sec. 3.3, Table 3.3-1, 10/96) =	3.10E-02	lbs/hp-hr
Calculation: (2,000 hours) * (1,465 hp) * (0.031 lbs/hp-hr) * (ton/2000 lb) =	**45.42**	ton/yr

CO Emissions:

Emission Factor (AP-42, Sec. 3.3, Table 3.3-1, 10/96)=	6.68E-03	lbs/hp-hr
Calculation: (2,000 hours) * (1,465 hp) * (0.00668 lbs/hp-hr) * (ton/2000 lb) =	**9.79**	ton/yr

VOC Emissions:

Emission Factor (AP-42, Table 3.3-1, TOC, Exhaust + Crankcase, 10/96)=	2.51E-03	lbs/hp-hr
Calculation: (2,000 hours) * (1,465 hp) * (0.0025141 lbs/hp-hr) * (ton/2000 lb) =	**3.68**	ton/yr

SO_2 Emissions:

Emission Factor = 0.00205 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)	2.05E-03	lbs/hp-hr
Calculation: (2,000 hours) * (1,465 hp) * (0.00205 lbs/hp-hr) * (ton/2000 lb) =	**3.00**	ton/yr

Diesel Engine Generator (534 bhp)

	350	kw
Operational Capacity of Engine =	534	hp
Hours of Operation =	2,000	hours

Total PM/PM10/PM2.5 Emissions:

Emission Factor(AP-42, Sec. 3.3, Table 3.3-1, 10/96) =	2.20E-03	lbs/hp-hr
Calculation: (2,000 hours) * (534 hp) * (0.0022 lbs/hp-hr) * (ton/2000 lb) =	**1.17**	ton/yr

NOx Emissions:

Emission Factor(AP-42, Sec. 3.3, Table 3.3-1, 10/96) =	3.10E-02	lbs/hp-hr
Calculation: (2,000 hours) * (534 hp) * (0.031 lbs/hp-hr) * (ton/2000 lb) =	**16.55**	ton/yr

CO Emissions:

Emission Factor (AP-42, Sec. 3.3, Table 3.3-1, 10/96)=	6.68E-03	lbs/hp-hr
Calculation: (2,000 hours) * (534 hp) * (0.00668 lbs/hp-hr) * (ton/2000 lb) =	**3.57**	ton/yr

VOC Emissions:

Emission Factor (AP-42, Table 3.3-1, TOC, Exhaust + Crankcase, 10/96)=	2.51E-03	lbs/hp-hr
Calculation: (2,000 hours) * (534 hp) * (0.0025141 lbs/hp-hr) * (ton/2000 lb) =	**1.34**	ton/yr

SO_2 Emissions:

Emission Factor = 0.00205 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)	2.05E-03	lbs/hp-hr
Calculation: (2,000 hours) * (534 hp) * (0.00205 lbs/hp-hr) * (ton/2000 lb) =	**1.09**	ton/yr

V. Existing Air Quality

MAQP #4741-01 and Addendum 2 are for a facility that will locate at sites in or within 10 kilometers (km) of certain PM_{10} nonattainment areas. The more stringent operating conditions contained in the addendum will minimize any potential impact on the nonattainment areas and will protect the national ambient air quality standards. Also, this facility is a portable source that would be expected to operate on an intermittent and temporary basis and any effects on air quality would be expected to be minor and short-lived.

VI. Air Quality Impacts

The Department determined that there will be no impacts from this permitting action because this permitting action is considered an administrative action. Therefore, the Department believes this action will not cause or contribute to a violation of any ambient air quality standard.

VII. Ambient Air Impact Analysis

Based on the information provided and the conditions established in MAQP #4741-01 and Addendum 2, the Department determined that there will be no impacts from this permitting action. The Department believes it will not cause or contribute to a violation of any ambient air quality standard.

VIII. Taking or Damaging Implication Analysis

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

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

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

IX. Environmental Assessment

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

Analysis prepared by: Deanne Fischer
Date: August 2, 2012

Addendum 2
LHC, Inc.
Montana Air Quality Permit (MAQP) #4741-01

An addendum to MAQP #4741-01 is hereby granted to LHC, Inc. (LHC) pursuant to Section 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.765, as amended, for the following:

I. Permitted Equipment:

LHC owns and operates a portable drum-mix asphalt plant and associated equipment with a maximum production capacity of 480-tons per hour (TPH). The equipment used at the facility includes:

- Diesel fueled asphalt oil heater
- Propane fueled drum asphalt dryer
- 1,465 brake horsepower (bhp) engine/generator
- 534 bhp engine/generator
- Associated equipment

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

Addendum 2 applies to the LHC facility while operating at any location in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) nonattainment areas. Additionally, seasonal and site restrictions apply to the facility as follows:

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

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

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

C. LHC shall comply with the limitations and conditions contained in Addendum 2 to MAQP #4741-01 while operating in or within 10 km of any of the previously identified PM_{10} nonattainment areas. Addendum 2 shall be valid until revoked or modified. The Department reserves the authority to modify Addendum 2 at any time based on local conditions of any future site. These conditions may include, but are not limited to, local terrain, meteorological conditions, proximity to residences or other businesses, etc.

III. Limitations and Conditions

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

1. Asphalt plant particulate matter emissions shall be limited to 0.04 grains per dry standard cubic feet (gr/dscf) from the asphalt drum mix drier exhaust (ARM 17.8.340, ARM 17.8.752, and 40 Code of Federal Regulations (CFR) 60, Subpart I).

2. LHC shall not cause or authorize to be discharged into the atmosphere from any equipment, any visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

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

4. LHC 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.3 (ARM 17.8.749 and ARM 17.8.752).

5. LHC shall install, operate, and maintain a fabric-filter baghouse for particulate matter air pollution control from the asphalt drum mix drier exhaust. A device to measure the pressure drop (magnehelic gauge, manometer, etc.) on the control devices (baghouse) must be installed and maintained. Pressure drop must be measured in inches of water. Temperature indicators at the control device inlets and outlets must be installed and maintained (ARM 17.8.749 and ARM 17.8.752).

6. LHC shall use only diesel as fuel for the asphalt heater and propane as fuel for the hot mix dryer (ARM 17.8.749).

7. LHC shall not operate or have on-site more than 2 diesel engines/generators. The maximum total combined rated capacity of the engines that drive the generators shall not exceed 1,999 bhp (ARM 17.8.749).

B. Operation Limitations and Conditions – Winter Season Conditions (October 1 - March 31)

1. Asphalt plant particulate matter emissions shall be limited to 0.04 grains per dry standard cubic feet (gr/dscf) from the asphalt drum mix drier exhaust (ARM 17.8.340, ARM 17.8.752, and 40 CFR) 60, Subpart I).

2. LHC shall not cause or authorize to be discharged into the atmosphere from any equipment, any visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

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

4. LHC 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.B.3 (ARM 17.8.749).

5. LHC shall install, operate, and maintain a fabric-filter baghouse for particulate matter air pollution control from the asphalt drum mix drier exhaust. A device to measure the pressure drop (magnehelic gauge, manometer, etc.) on the control devices (baghouse) must be installed and maintained. Pressure drop must be measured in inches of water. Temperature indicators at the control device inlets and outlets must be installed and maintained (ARM 17.8.749 and ARM 17.8.752).

6. LHC shall use only diesel as fuel for the asphalt heater and propane as fuel for the hot mix dryer (ARM 17.8.749).

7. LHC shall not operate or have on-site more than 2 diesel engines/generators. The total maximum combined rated capacity of the engines that drive the generators shall not exceed 1,999 bhp and operation of the engines/generators shall not exceed 4 hours per day (ARM 17.8.749).

8. During the Winter Season, asphalt plant production shall not exceed 4 hours per day (ARM 17.8.749).

9. During the Winter Season, asphalt plant production shall not exceed 1,920 tons per day (ARM 17.8.749).

C. Operational Reporting Requirements

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

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

   a. Daily tons of asphalt produced. LHC shall document, by day, the total asphalt production. LHC shall sum the total asphalt production for the previous day to demonstrate compliance with the limitations in Section III.B.9;

   b. Daily hours of operation at each site;

   c. Daily hours of operation and the bhp for each engine at each site;

   d. Type and amount of fuel used for the:

      i. Asphalt plant (hot mix dryer),
      ii. Hot oil heater, and,
      iii. Diesel engine/generator.

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

Addendum 2 Analysis
LHC, Inc.
Montana Air Quality Permit (MAQP) #4741-01

I. Permitted Equipment

LHC owns and operates a portable drum-mix asphalt plant and associated equipment with a maximum production capacity of 480 tons per hour (TPH). The equipment used at the facility includes:

- Diesel fueled asphalt oil heater
- Propane fueled drum asphalt dryer
- 1,465 brake horsepower (bhp) engine/generator
- 534 bhp engine/generator
- Associated equipment

II. Source Description

For a typical operational set-up, aggregate is loaded into the cold feed bins. The aggregate is conveyed into the single drum dryer/mixer to dry the aggregate and mix with the asphalt cement (AC) hot oil that is supplied by the ADM direct fire AC tank. The combined aggregate and oil mixture spills into the 75 foot drag chain and is deposited into the 65 ton surge bin. All the exhaust removed from the drum dryer/mixer is processed in the baghouse to remove any fines. The baghouse is pulsed with air to remove the fines which are then returned back into the drum dryer/mixer for recycling.

III. Applicable Rules and Regulations

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

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

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

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

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

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

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

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

IV. Emission Inventory

SUMMER	lbs/day						
Emission Source	**PM**	**PM10**	**PM2.5**	**NOx**	**CO**	**VOC**	**SO_2**
Cold Aggregate Storage Piles	37.15	17.57	2.66	--	--	--	--
Cold Aggregate Handling/Conveyors	3.23	1.06	0.00	--	--	--	--
Cold Aggregate Screen	41.47	25.34	--	--	--	--	--
Diesel-Fired Asphalt Oil Heater	--	--		--	0.1440	--	--
480 TPH Drum Mix Asphalt Dryer	327.47	254.68	59.08	299.52	1497.60	368.64	39.17
Asphalt Surge Bin (silo) Filling	6.75	6.75	6.75	--	13.59	131.97	--
Plant Load-Out	0.45	0.45	0.45	--	2.37	1.14	--
Haul Roads / Vehicle Traffic	69.50	19.76	1.98	--	--	--	--
1,465 bhp Diesel Engine Generator	77.35	77.35	77.35	1089.96	234.87	88.40	72.08
534 bhp Diesel Engine Generator	28.20	28.20	28.20	397.30	85.61	32.22	26.27
Total Emissions	**563.36**	**402.97**	**148.27**	**1389.48**	**1748.57**	**590.15**	**111.25**

a. The asphalt plant and engine generators may operate 24 hr/day but not more than 2,000 hrs/yr in accordance with the conditions and limitations in MAQP#4741-01. PM_{10} emissions do not exceed 547 lb/day.

WINTER	lbs/day						
Emission Source	**PM**	**PM10**	**PM2.5**	**NOx**	**CO**	**VOC**	**SO_2**
Cold Aggregate Storage Piles	6.19	2.93	0.44	--	--	--	--
Cold Aggregate Handling/Conveyors	0.54	0.18	0.00	--	--	--	--
Cold Aggregate Screen (controlled)	6.91	4.22	--	--	--	--	--
Diesel-Fired Asphalt Oil Heater	--	--		--	0.024	--	--
480 TPH Drum Mix Asphalt Dryer	54.58	42.45	40.89	49.92	249.60	61.44	6.53
Asphalt Surge Bin (silo) Filling	1.12	1.12	1.12	--	2.27	21.99	--
Plant Load-Out	0.00	0.00	0.00	--	0.39	0.00	--
Haul Roads / Vehicle Traffic	11.58	3.29	0.33	--	--	--	--
1,465 hp Diesel Engine Generator	12.89	12.89	12.89	181.66	39.14	14.73	12.01
534 bhp Diesel Engine Generator	4.70	4.70	4.70	66.22	14.27	5.37	1.09
Total Emissions	**98.52**	**71.79**	**60.38**	**297.80**	**305.70**	**103.54**	**19.64**

a. Hours of operation restricted to 4 hrs/day to keep PM10 emissions below 82 lbs/day

Cold Aggregate Storage Piles

Predictive equation for emission factor for storage piles per AP 42, Sec. 13.2.4.3, 11/06. (conservative application to bins)

Maximum Process Rate (Maximum plant process rate)=	480	ton/hr
Number of Piles =	1	pile
Maximum Hours of Operation (summer hours)=	24	hrs/day
Maximum Hours of Operation (winter hours)=	4.0	hrs/day

PM Emissions:

Note: Based on the conditions assumed in the predictive equation without add'l water spray control.

Emission Factor = k (0.0032) * (U/5)^1.3 * (M / 2)^-1.4 =	0.00322	lb/ton
Where: k = particle size multiplier (Value for PM < 30 microns per AP 42, Sec. 13.2.4.3, 11/06)=	0.74	
U = mean wind speed (Estimate avg based on values provided in AP 42, Sec. 13.2.4.3, 11/06)=	8.15	mph
M = material moisture content (Estimate avg based on values provided in AP 42, Sec. 13.2.4.3, 11/06)=	2.525	%
Calculation: (480 ton/hr) * (24 hrs/day) * (0.00322 lb/ton) * (1 pile) =	**37.15**	lb/day
Calculation: (480 ton/hr) * (4 hrs/day) * (0.00322 lb/ton) * (1 pile) =	**6.19**	lb/day

PM10 Emissions:

Predictive equation for emission factor provided per **AP 42, Sec. 13.2.4.3, 11/06**.		
Emission Factor = k (0.0032) * (U/5)^1.3 * (M / 2)^-1.4 =	0.00153	lb/ton
Where: k = particle size multiplier (Value for PM < 10 microns per AP 42, Sec. 13.2.4.3, 11/06)=	0.35	
U = mean wind speed (Estimate avg based on values provided in AP 42, Sec. 13.2.4.3, 11/06)=	8.15	mph
M = material moisture content (Estimate avg based on values provided in AP 42, Sec. 13.2.4.3, 11/06)=	2.525	%
Calculation: (480 ton/hr) * (24 hrs/day) * (0.00153 lb/ton) * (1 pile) = 17.57 lb/day (Summer hours)	**17.57**	lb/day
Calculation: (480 ton/hr) * (4 hrs/day) * (0.00153 lb/ton) * (1 pile) = 2.93 lb/day (Winter hours)	**2.93**	lb/day

Filterable $PM_{2.5}$ Emissions:

Predictive equation for emission factor provided per **AP 42, Sec. 13.2.4.3, 11/06**.		
Emission Factor = k (0.0032) * (U/5)^1.3 * (M / 2)^-1.4 =	0.00023	lb/ton
Where: k = particle size multiplier (Value for PM < 2.5 microns per AP 42, Sec. 13.2.4.3, 11/06)=	0.053	
U = mean wind speed (Estimate avg based on values provided in AP 42, Sec. 13.2.4.3, 11/06)=	8.15	mph
M = material moisture content (Estimate avg based on values provided in AP 42, Sec. 13.2.4.3, 11/06)=	2.5	%
Calculation: (480 ton/hr) * (24 hrs/day) * (0.00023 lb/ton) * (1 pile) = 2.66 lb/day (Summer hours)	**2.66**	lb/day
Calculation: (480 ton/hr) * (4 hrs/day) * (0.00023 lb/ton) * (1 pile) = 0.44 lb/day (Winter hours)	**0.44**	lb/day

Conveyor Transfer Point (SCC 3-05-02006)

Note: Based on controlled emissions factors		
Maximum Process Rate = 480 ton/hr (Maximum plant process rate)	480	ton/hr
Maximum Hours of Operation = 24 hrs/day (summer hours)	24	hrs/day
Maximum Hours of Operation = 4 hrs/day (winter hours)	4.0	hrs/day
Number of Transfers = 2 transfers (Assumed)	2	transfers

Total PM Emissions:

Emission Factor = 0.00014 lb/ton (controlled, AP 42, Table 11.19.2-2, 8/04)	0.00014	lb/ton
Calculation: (480 ton/hr) * (24 hrs/day) * (2 transfers) * (0.00014 lb/ton) =	**3.23**	lbs/day
Calculation: (480 ton/hr) * (4 hrs/day) * (2 transfers) * (0.00014 lb/ton) =	**0.54**	lbs/day

Total PM10 Emissions:

Emission Factor = 0.000046 lb/ton (controlled, AP 42, Table 11.19.2-2, 8/04)	0.000046	lb/ton
Calculation: (480 ton/hr) * (24 hrs/day) * (2 transfers) * (0.000046 lb/ton) =	**1.06**	lbs/day
Calculation: (480 ton/hr) * (4 hrs/day) * (2 transfers) * (0.000046 lb/ton) =	**0.18**	lbs/day

Cold Aggregate Screen

Note: Based on controlled emissions factors		
Maximum Process Rate =	480	ton/hr
Maximum Hours of Operation =	24	hrs/day
Maximum Hours of Operation =	4.0	hrs/day
Number of Screens =	1	screens

Total PM Emissions:

Emission Factor = 0.0036 lb/ton (controlled, AP 42, Table 11.19.2-2, 8/04)	0.0036	lb/ton
SummerCalculation: (480 ton/hr) * (24 hrs/day) * (1 screens) * (0.0036 lb/ton) =	**41.47**	lbs/day
Winter Calculation: (480 ton/hr) * (4 hrs/day) * (1 screens) A20 * (0.0036 lb/ton) =	**6.91**	lbs/day

Total PM10 Emissions:

Emission Factor = 0.0022 lb/ton (controlled, AP 42, Table 11.19.2-2, 8/04)	0.0022	lb/ton
Summer Calculation: (480 ton/hr) * (24 hrs/day) * (1 screens) * (0.0022 lb/ton) =	**25.34**	lbs/day
Winter Calculation: (480 ton/hr) * (4 hrs/day) * (1 screens) * (0.0036 lb/ton) =	**4.22**	lbs/day

Hot Oil Heater

Production Rate = 5.00 gal/hr	5.00	gal/hr
Maximum Hours of Operation (summer) =	24	hrs/day
Maximum Hours of Operation (winter) =	4.0	hrs/day

CO Emissions:

Emission Factor = 0.0012 lb/gal (AP-42, Section 11.1, Table 11.1-13, No.2 fuel oil, 3/04)	0.0012	lb/gal
Calculation (summer): (24 hrs/day) * (5 gal/hr) * (0.0012 lb/gal) =	**0.1440**	lbs/day
Calculation (winter): (4 hrs/day) * (5 gal/hr) * (0.0012 lb/gal) =	**0.0240**	lbs/day

Dryer, fabric filter (SCC 3-05-002-05, -55 to -63)

Propane fuel

Maximum Process Rate (Application information)=	480	ton/hr
Maximum Hours of Operation (summer hours)=	24	hrs/day
Maximum Hours of Operation (winter hours)=	4.0	hrs/day
Dry Standard Volumetric Flowrate:	12,636	dscfm

Filterable PM Emissions:

Based on Emission Limit

Emission Factor (permit limit)=	0.04	gr/dscf
Calculation: (0.04 gr/dscf) * (12,636 dscfm) * (1 lb / 7000 gr) * (60 min/hr) =	**4.33**	lb/hr
Calculation: (4.33 lb/hr) * (24 hrs/day) (Summer hours)=	**103.98**	lbs/day
Calculation: (4.33 lb/hr) * (4 hrs/day) (Winter hours)=	**17.33**	lbs/day

Filterable PM_{10} Emissions:

Based on Emission Limit

Emission Factor = 0.012 gr/dscf (AP-42 Table 11.1-4, PM10 is 30% of filtereable PM)	0.012	gr/dscf
Calculation: (0.012 gr/dscf) * (12,636 dscfm) * (1 lb / 7000 gr) * (60 min/hr) =	**1.30**	lb/hr
Calculation: (1.30 lb/hr) * (24 hrs/day) (Summer hours)=	**31.19**	lbs/day
Calculation: (1.30 lb/hr) * (4 hrs/day) (Winter hours)=	**5.20**	lbs/day

Filterable $PM_{2.5}$ Emissions:

Based on Emission Limit

Emission Factor = 0.0084 gr/dscf (AP-42 Table 11.1-4, PM10 is 21% of filtereable PM)	0.0084	gr/dscf
Calculation: (0.0084 gr/dscf) * (12,636 dscfm) * (1 lb / 7000 gr) * (60 min/hr) =	**0.91**	lb/hr
Calculation: (0.91 lb/hr) * (24 hrs/day) (Summer hours)=	**21.84**	lbs/day
Calculation: (0.91 lb/hr) * (4 hrs/day) (Winter hours)=	**3.64**	lbs/day

Condensable $PM_{2.5}$ Emissions:

Based on AP-42 Drum mix dryer fired with natural gas, propane, fuel oil, and waste oil. The data indicate that fuel type does not significantly effect PM emissions

Emission Factor (fabric filter, AP 42, Table 11.1-3, 3/04, inorganic+organic)=	0.0194	lb/ton
Calculation: (480 ton/hr) * (24 hrs/day) * (0.0194 lb/ton) (Summer hours)=	**223.49**	lb/day
Calculation: (480 ton/hr) * (4 hrs/day) * (0.0194 lb/ton) (Winter hours)=	**37.25**	lb/day

CO Emissions:

Emission Factor (AP 42, Table 11.1-7, 03/04, propane (as natural gas))=	0.13	lb/ton
Calculation: (480 ton/hr) * (24 hrs/day) * (0.13 lb/ton) (Summer hours)=	**1497.60**	lb/day
Calculation: (480 ton/hr) * (4 hrs/day) * (0.13 lb/ton) (Winter hours)=	**249.60**	lb/day

NOx Emissions:

Emission Factor (propane (as natural gas), AP 42, Table 11.1-7, 3/04)=	0.026	lb/ton
Calculation: (480 ton/hr) * (24 hrs/day) * (0.026 lb/ton) (Summer hours)=	**299.52**	lb/day
Calculation: (480 ton/hr) * (4 hrs/day) * (0.026 lb/ton) (Winter hours)=	**49.92**	lb/day

SO2 Emissions:

Emission Factor (AP 42, Table 11.1-8, 3/04 propane (as natural gas))=	0.0034	lb/ton
Calculation: (480 ton/hr) * (24 hrs/day) * (0.0034 lb/ton) (Summer hours)=	**39.17**	lb/day
Calculation: (480 ton/hr) * (4 hrs/day) * (0.0034 lb/ton) (Winter hours)=	**6.53**	lb/day

VOC Emissions:

Emission Factor = (AP 42, Table 11.1-8, 3/04 propane (as natural gas))=	0.032	lb/ton
Calculation: (480 ton/hr) * (24 hrs/day) * (0.032 lb/ton) (Summer hours)=	**368.64**	lb/day
Calculation: (480 ton/hr) * (4 hrs/day) * (0.032 lb/ton) (Winter hours)=	**61.44**	lb/day

Silo Filling (SCC 3-05-002-13)

Maximum Process Rate = 480 ton/hr (Maximum plant process rate)	480	ton/hr
Maximum Hours of Operation (summer hours)=	24	hrs/day
Maximum Hours of Operation (winter hours)=	4.0	hrs/day

Total PM Emissions:

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.		
Emission Factor = 0.000332 + 0.00105(-V)e^((0.0251)(T + 460) - 20.43) =	0.00059	lb/ton
Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)	-0.5	
T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)	325	F
Calculation: (480 ton/hr) * (24 hrs/day) * (0.00059 lb/ton) * =	**6.75**	lb/day
Calculation: (480 ton/hr) * (4 hrs/day) * (0.00059 lb/ton) * =	**1.12**	lb/day

VOC Emissions: (VOC = TOC * 94%, AP-42, Table 11.1-16, 3/04)

Predictive equation for TOC emission factor provided per AP 42, Table 11.1-14, 3/04.		
Emission Factor = 0.0504(-V)e^((0.0251)(T + 460) - 20.43) * (94%) = 0.01146 lb/ton	0.01146	lb/ton
Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)	-0.5	
T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)	325	F
Calculation: (480 ton/hr) * (24 hrs/day) * (0.01146 lb/ton) =	**131.97**	lb/day
Calculation: (480 ton/hr) * (4 hrs/day) * (0.01146 lb/ton) * =	**21.99**	lb/day

CO Emissions:

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.		
Emission Factor = 0.00488(-V)e^((0.0251)(T + 460) - 20.43) = 0.00118 lb/ton	0.00118	lb/ton
Where: V = Asphalt volatility = -0.5 (Default value per AP 42, Table 11.1-14, 3/04)	-0.5	
T = HMA mix temperature = 325 F (Default value per AP 42, Table 11.1-14, 3/04)	325	F
Calculation: (480 ton/hr) * (24 hrs/day) * (0.00118 lb/ton) =	**13.59**	lb/day
Calculation: (480 ton/hr) * (4 hrs/day) * (0.00118 lb/ton) * =	**2.27**	lb/day

Plant Load-Out (SCC 3-05-002-14)

Maximum Process Rate = 480 ton/hr (Maximum plant process rate)	480	ton/hr
Maximum Hours of Operation = 24 hrs/day (summer hours)	24	hrs/day
Maximum Hours of Operation = 4 hrs/day (winter hours)	4.0	hrs/day

Total PM Emissions: (Total PM is assumed to be predominantly PM-2.5 since emissions consist of condensed vapors; AP 42, Table 11.1-14.)

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.		
Emission Factor = 0.000181 + 0.00141(-V)e^((0.0251)(T + 460) - 20.43) =	0.00023	lb/ton
Where: V = Asphalt volatility (Default value per AP 42, Table 11.1-14, 3/04)=	-0.5	
T = HMA mix temperature (Max. from application, process flow narrative)=	250	F
Calculation: (480 ton/hr) * (24 hrs/day) * (0.00023 lb/ton) =	**2.68**	lb/day
Calculation: (480 ton/hr) * (4 hrs/day) * (0.00023 lb/ton) =	**0.45**	lb/day

Organic $PM_{2.5}$ Emissions:

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.		
Emission Factor = 0.00141(-V)e^((0.0251)(T + 460) - 20.43) =	0.00005	lb/ton
Where: V = Asphalt volatility (Default value per AP 42, Table 11.1-14, 3/04)=	-0.5	
T = HMA mix temperature (Max. from application, process flow narrative)=	250	F
Calculation: (480 ton/hr) * (24 hrs/day) * (0.00005 lb/ton) =	**0.60**	lb/day
Calculation: (480 ton/hr) * (4 hrs/day) * (0.00005 lb/ton) =	**0.10**	lb/day

VOC Emissions: (VOC = TOC * 94%, AP-42, Table 11.1-16, 3/04)

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.		
Emission Factor = 0.0172(-V)e^((0.0251)(T + 460) - 20.43) * 94% =	0.00060	lb/ton
Where: V = Asphalt volatility (Default value per AP 42, Table 11.1-14, 3/04)=	-0.5	
T = HMA mix temperature (Max. from application, process flow narrative)=	250	F
Calculation: (480 ton/hr) * (24 hrs/day) * (0.00060 lb/ton) =	**6.85**	lb/day
Calculation: (480 ton/hr) * (4 hrs/day) * (0.00060 lb/ton) =	**1.14**	lb/day

CO Emissions:

Predictive equation for emission factor provided per AP 42, Table 11.1-14, 3/04.		
Emission Factor = 0.00558(-V)e^((0.0251)(T + 460) - 20.43) =	0.00021	
Where: V = Asphalt volatility (Default value per AP 42, Table 11.1-14, 3/04)=	-0.5	
T = HMA mix temperature (Default value per AP 42, Table 11.1-14, 3/04)=	250	F
Calculation: (480 ton/hr) * (24 hrs/day) * (0.00021) =	**0.10**	ton/yr
Calculation: (480 ton/hr) * (4 hrs/day) * (0.00021) =	**2.37**	lb/day

Haul Roads

Vehicle Miles Traveled (VMT) per Day = (Estimate)	5	VMT/day
VMT per hour = (5 VMT/day) * (day/24 hrs) =	0.21	VMT/hr
Maximum Hours of Operation (summer hours)=	24	hrs/day
Maximum Hours of Operation (winter hours)=	4.0	hrs/day

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 =	13.90	lb/VMT
Where: k = constant = 4.9 lbs/VMT (Value for PM30/TSP,)	4.9	lbs/VMT
s = surface silt content = 8.3 % (Mean value, sand/gravel processing, material storage area,)	8.3	%
W = mean vehicle weight = 54 tons (1994 average loaded/unloaded or a 40 ton truck)	54	tons
a = constant = 0.7 (Value for PM30/TSP)	0.7	
b = constant = 0.45 (Value for PM30/TSP)	0.45	
Control Efficiency = 50% (Water spray or chemical dust suppressant)	50	%
Calculation: (0.21 VMT/hr) * (24 hrs/day) * (13.90 lb/VMT) =	**69.50**	lb/day
Calculation: (24 hrs/day) * (0.21 VMT/hr) * (13.90 lb/VMT) (1-50/100) =	**34.75**	lb/day
Calculation: (0.21 VMT/hr) * (4 hrs/day) * (13.90 lb/VMT) =	**11.58**	lb/day
Calculation: (4 hrs/day) * (0.21 VMT/hr) * (13.90 lb/VMT) (1-50/100) =	**5.79**	lb/day

PM10 Emissions:

Emission Factor = k * (s / 12)^a * (W / 3)^b =	3.95	lb/VMT
Where: k = constant = 1.5 lbs/VMT (Value for PM10)	1.5	lbs/VMT
s = surface silt content = 8.3 % (Mean value, sand/gravel processing, material storage area)	8.3	%
W = mean vehicle weight = 54 tons (1994 average loaded/unloaded or a 40 ton truck)	54	tons
a = constant = 0.9 (Value for PM10)	0.9	
b = constant = 0.45 (Value for PM10)	0.45	
Control Efficiency = 50% (Water spray or chemical dust suppressant)	50	%
Calculation: (0.21 VMT/hr) * (24 hrs/day) * (3.95 lb/VMT) =	**19.76**	lb/day
Calculation: (24 hrs/day) * (0.21 VMT/hr) * (3.95 lb/VMT) (1-50/100) =	**9.88**	lb/day
Calculation: (0.21 VMT/hr) * (4 hrs/day) * (3.95 lb/VMT) =	**3.29**	lb/day
Calculation: (4 hrs/day) * (0.21 VMT/hr) * (3.95 lb/VMT) (1-50/100) =	**1.65**	lb/day

$PM_{2.5}$ Emissions:

Emission Factor = k * (s / 12)^a * (W / 3)^b = 0.40 lb/VMT	0.40	lb/VMT
Where: k = constant = 0.15 lbs/VMT (Value for PM2.5)	0.15	lbs/VMT
s = surface silt content = 8.3 % (Mean value, sand/gravel processing, material storage area)	8.3	%
W = mean vehicle weight = 54 tons (1994 average loaded/unloaded or a 40 ton truck)	54	tons
a = constant = 0.9 (Value for PM2.5)	0.9	
b = constant = 0.45 (Value for PM2.5)	0.45	
Control Efficiency = 50% (Water spray or chemical dust suppressant)	50	%
Calculation: (0.21 VMT/hr) * (24 hrs/day) * (0.40 lb/VMT) =	**1.98**	lb/day
Calculation: (24 hrs/day) * (0.21 VMT/hr) * (0.40 lb/VMT) (1-50/100) =	**0.99**	lb/day
Calculation: (0.21 VMT/hr) * (4 hrs/day) * (0.40 lb/VMT) =	**0.33**	lb/day
Calculation: (4 hrs/day) * (0.21 VMT/hr) * (0.40 lb/VMT) (1-50/100) =	**0.16**	lb/day

Diesel Engine Generator (1465 bhp)

Operational Capacity of Engine = 1,465 hp	1,465.0	hp
Maximum Hours of Operation = 24 hrs/day (summer hours)	24	hrs/day
Maximum Hours of Operation = 4 hrs/day (winter hours)	4.0	hrs/day

Total PM/PM10/PM2.5 Emissions:

Emission Factor(AP-42, Sec. 3.3, Table 3.3-1, 10/96) =	2.20E-03	lbs/hp-hr
Calculation: (24 hrs/day) * (1,465 hp) * (0.0022 lbs/hp-hr) =	**77.35**	lbs/day
Calculation: (4 hrs/day) * (1,465 hp) * (0.0022 lbs/hp-hr) =	**12.89**	lbs/day

NOx Emissions:

Emission Factor(AP-42, Sec. 3.3, Table 3.3-1, 10/96) =	3.10E-02	lbs/hp-hr
Calculation: (24 hrs/day) * (1,465 hp) * (0.031 lbs/hp-hr) =	**1,089.96**	lbs/day
Calculation: (4 hrs/day) * (1,465 hp) * (0.031 lbs/hp-hr) =	**181.66**	lbs/day

CO Emissions:

Emission Factor (AP-42, Sec. 3.3, Table 3.3-1, 10/96)=	6.68E-03	lbs/hp-hr
Calculation: (24 hrs/day) * (1,465 hp) * (0.00668 lbs/hp-hr) =	**234.87**	lbs/day
Calculation: (4 hrs/day) * (1,465 hp) * (0.00668 lbs/hp-hr) =	**39.14**	lbs/day

VOC Emissions:

Emission Factor (AP-42, Table 3.3-1, TOC, Exhaust + Crankcase, 10/96)=	2.51E-03	lbs/hp-hr
Calculation: (24 hrs/day) * (1,465 hp) * (0.0025141 lbs/hp-hr) =	**88.40**	lbs/yr
Calculation: (4 hrs/day) * (1,465 hp) * (0.0025141 lbs/hp-hr) =	**14.73**	lbs/day

SO_2 Emissions:

Emission Factor = 0.00205 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)	2.05E-03	lbs/hp-hr
Calculation: (24 hrs/day) * (1,465 hp) * (0.00205 lbs/hp-hr) =	**72.08**	lbs/yr
Calculation: (4 hrs/day) * (1,465 hp) * (0.00205 lbs/hp-hr) =	**12.01**	lbs/day

Diesel Engine Generator (534 bhp)

Operational Capacity of Engine = 534 hp	534.0	hp
Maximum Hours of Operation = 24 hrs/day (summer hours)	24	hrs/day
Maximum Hours of Operation = 4 hrs/day (winter hours)	4.0	hrs/day

Total PM/PM10/PM2.5 Emissions:

Emission Factor(AP-42, Sec. 3.3, Table 3.3-1, 10/96) =	2.20E-03	lbs/hp-hr
Calculation: (24 hrs/day) * (534 hp) * (0.0022 lbs/hp-hr) =	**28.20**	lbs/day
Calculation: (4 hrs/day) * (534 hp) * (0.0022 lbs/hp-hr) =	**4.70**	lbs/day

NOx Emissions:

Emission Factor(AP-42, Sec. 3.3, Table 3.3-1, 10/96) =	3.10E-02	lbs/hp-hr
Calculation: (24 hrs/day) * (534 hp) * (0.031 lbs/hp-hr) =	**397.30**	lbs/day
Calculation: (4 hrs/day) * (534 hp) * (0.031 lbs/hp-hr) =	**66.22**	lbs/day

CO Emissions:

Emission Factor (AP-42, Sec. 3.3, Table 3.3-1, 10/96)=	6.68E-03	lbs/hp-hr
Calculation: (24 hrs/day) * (534 hp) * (0.00668 lbs/hp-hr) =	**85.61**	lbs/day
Calculation: (4 hrs/day) * (534 hp) * (0.00668 lbs/hp-hr) =	**14.27**	lbs/day

VOC Emissions:

Emission Factor (AP-42, Table 3.3-1, TOC, Exhaust + Crankcase, 10/96)=	2.51E-03	lbs/hp-hr
Calculation: (24 hrs/day) * (534 hp) * (0.0025141 lbs/hp-hr) =	**32.22**	lbs/yr
Calculation: (4 hrs/day) * (534 hp) * (0.0025141 lbs/hp-hr) =	**5.37**	lbs/day

SO_2 Emissions:

Emission Factor = 0.00205 lbs/hp-hr (AP-42, Sec. 3.3, Table 3.3-1, 10/96)	2.05E-03	lbs/hp-hr
Calculation: (24 hrs/day) * (1,465 hp) * (0.00205 lbs/hp-hr) =	**26.27**	lbs/yr
Calculation: (4 hrs/day) * (534 hp) * (0.00205 lbs/hp-hr) =	**4.38**	lbs/day

V. Existing Air Quality

On July 1, 1987, the Environmental Protection Agency (EPA) promulgated new National Ambient Air Quality Standards (NAAQS) for particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}). Due to exceedances of the national standards for PM_{10}, the cities of Kalispell (and the nearby Evergreen area), Columbia Falls, Butte, Whitefish, Libby, Missoula, and Thompson

Falls were designated by EPA as nonattainment for PM_{10}. As a result of this designation, the EPA required the Department and the City-County Health Departments to submit PM_{10} State Implementation Plans (SIP). The SIPs consisted of emission control plans that controlled fugitive dust emissions from roads, parking lots, construction, and demolition, since technical studies identified these sources to be the major contributors to PM_{10} emissions.

MAQP #4741-01 and Addendum 2 are for a portable drum-mix asphalt plant that will locate at sites in or within 10 kilometers (km) of certain PM_{10} nonattainment areas. The more stringent operating conditions contained in the addendum will minimize any potential impact on the nonattainment areas and will protect the national ambient air quality standards. Also, this facility is a portable source that would be expected to operate on an intermittent and temporary basis and any effects on air quality would be expected to be minor and short-lived.

VI. Air Quality Impacts

MAQP #4741-01 and Addendum 2 will cover the operations of this portable crushing/screening plant while operating at any location within Montana, excluding those counties that have a Department approved permitting program and those areas that are tribal lands.

Addendum 2 will cover the operations of this portable asphalt plant, while operating in or within 10 km of certain PM_{10} nonattainment areas during the winter months (October 1 through March 31). Additionally, the facility will also be allowed to operate in or within 10 km of PM_{10} nonattainment areas during the summer months (April 1 through September 30).

VII. Taking or Damaging Implication Analysis

As required by 2-10-101 through 105, MCA, the Department conducted a private property taking and damaging assessment (see Section VII of the Permit Analysis for MAQP#4741-01) and determined there are no taking or damaging implications associated with this permit action.

VIII. Environmental Assessment

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

Addendum Analysis Prepared by: Deanne Fischer
Date: August 2, 2012