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

PRELIMINARY DETERMINATION
ON PERMIT APPLICATION

Date of Mailing: February 26, 2013

Name of Applicant: Knife River, Inc.

Source: Portable Hot-Mix Asphalt Plant

Proposed Action: The Department of Environmental Quality (Department) proposes to issue a permit, with conditions, to the above-named applicant. The application was assigned Montana Air Quality Permit Application Number 4865-00.

Proposed Conditions: See attached.

Public Comment: Any member of the public desiring to comment must submit such comments in writing to the Air Resources Management Bureau (Bureau) of the Department at the above address. Comments may address the Department's analysis and determination, or the information submitted in the application. In order to be considered, comments on this Preliminary Determination are due by March 28, 2013. Copies of the application and the Department's analysis may be inspected at the Bureau's office in Helena. For more information, you may contact the Department.

Departmental Action: The Department intends to make a decision on the application after expiration of the Public Comment period described above. A copy of the decision may be obtained at the above address. The permit shall become final on the date stated in the Department's Decision on this permit, unless an appeal is filed with the Board of Environmental Review (Board).

Procedures for Appeal: Any person jointly or severally adversely affected by the final action may request a hearing before the Board. Any appeal must be filed by the date stated in the Department's Decision on this permit. The request for a hearing shall contain an affidavit setting forth the grounds for the request. Any hearing will be held under the provisions of the Montana Administrative Procedures Act. Submit requests for a hearing in triplicate to: Chairman, Board of Environmental Review, P.O. Box 200901, Helena, MT 59620.

For the Department,

Julie A Merkel

Julie Merkel
Air Permitting Program Supervisor
Air Resources Management Bureau
(406) 444-3626

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

JM:DCK
Enclosure

MONTANA AIR QUALITY PERMIT

Issued to: Knife River, Inc.
4800 Wilke Road
Missoula, MT 59808

MAQP: #4865-00
Application Complete: 01/18/2013
Preliminary Determination Issued: 02/26/2013
Department's Decision Issued:
Permit Final:
AFS: #777-4865

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Knife River, Inc. (Knife River) pursuant to Sections 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

Knife River proposes to install and operate a portable drum mix-asphalt plant and associated equipment with a 400 tons per hour (TPH) maximum production capacity. A complete list of permitted equipment is contained in Section I.A of the permit analysis.

B. Plant Location

The Knife River hot-mix asphalt plant will initially be located within Section 6, Township 13 North, Range 19 West in Missoula County, Montana. However, MAQP #4865-00 applies while operating at any location in Montana, except those areas having a Department of Environmental Quality (Department) approved permitting program or areas considered tribal lands. *A Missoula County air quality permit will be required for locations within Missoula County, Montana.*

Addendum #1 will apply to the Knife River facility while operating at locations in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of ten microns or less (PM_{10}) nonattainment areas.

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) (ARM 17.8.752; ARM 17.8.340 and 40 Code of Federal Regulations (CFR) 60, Subpart I).

2. Knife River shall not cause or authorize to be discharged into the atmosphere from the asphalt plant stack emissions that exhibit 20% opacity or greater averaged over 6 consecutive minutes (ARM 17.8.304; ARM 17.8.340 and 40 CFR 60, Subpart I).

3. Knife River shall not cause or authorize to be discharged into the atmosphere from 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 opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.308).

4. Knife River 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).

5. Knife River shall treat all unpaved portions of the haul roads, access roads, and 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.4 (ARM 17.8.749).

6. Knife River shall install, operate, and maintain a baghouse for control of particulate matter. A device to measure the pressure drop (magnehelic gauge, manometer, etc.) on the control device (baghouse) must be installed and maintained. Pressure drop must be measured in inches of water. Temperature indicators at the control device inlet and outlet must be installed and maintained (ARM 17.8.749).

7. Knife River shall install, operate, and maintain a fabric-filter baghouse for particulate matter air pollution control from the mineral filler storage silo exhaust. A device to measure the pressure drop (magnehelic gauge, manometer, etc.) across the fabric filter system must be installed and maintained on the baghouses. Pressure drop must be measured in inches of water (ARM 17.8.752).

8. Knife River shall be limited to a maximum of 1,120,000 tons of asphalt production during any rolling 12-month period (ARM 17.8.749 and ARM 17.8.1204).

9. Knife River shall only use recycled waste oil, number 2 fuel oil, propane, or natural gas as fuel for the hot mix drier (ARM 17.8.749 and ARM 17.8.1204).).

10. Knife River shall only use diesel, propane, or natural gas as fuel for the asphalt oil heater (ARM 17.8.749 and ARM 17.8.1204).).

11. The asphalt production rate shall be limited to the average production rate during the last source test demonstrating compliance (ARM 17.8.749).

12. Knife River shall not operate or have on site more than two (2) diesel-fired generator sets at any given time and the maximum rate design capacity of the diesel engine(s) driving the generator set(s) shall not exceed 1,538 brake-horsepower (bhp) (ARM 17.8.1204).

13. Operation of the hot-mix asphalt plant, including the diesel-fired generator set(s), shall not exceed 2,800 hours during any rolling 12-month time period (ARM 17.8.1204).

14. Knife River shall comply with all applicable standards and limitations, and the 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. Knife River shall comply with all applicable standards and limitations, and the reporting, recordkeeping, testing, 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).

16. If the permitted equipment is used in conjunction with any other equipment owned or operated by Knife River, 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 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 drier 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 compliance source test, it is suggested that the test be performed at the highest practical production rate (ARM 17.8.749).

3. Temperature and pressure drop across the drier baghouse, and pressure drop across the lime silo baghouse, must be recorded daily and kept on site according to Section II.C.2 (ARM 17.8.749).

4. Temperature and pressure drop across the drier baghouse must be recorded during the compliance source test and reported as part of the test results (ARM 17.8.749).

5. Knife River may retest at any time in order to test at a higher production rate (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).

C. Reporting Requirements

1. If this 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. The facility shall not operate in the new location for more than one year (ARM 17.8.749 and ARM 17.8.765).

2. Knife River shall maintain on-site records showing daily hours of operation, daily production rates, and daily pressure drop and temperature readings from the baghouses for the last 12 months. The records compiled in accordance with this permit shall be maintained by Knife River 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 for inspection by the Department (ARM 17.8.749).

3. Knife River 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).

4. Knife River 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. Knife River shall document, by month, total asphalt production from the asphalt plant. By the 25th day of each month, Knife River shall total the asphalt production for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.8. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

6. Knife River shall document, by month, the hours of operation of the asphalt plant and the generator set(s). By the 25th day of each month, Knife River shall total the hours of operation for each equipment for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitations in Sections II.A.13 and II.A.13. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

7. Knife River shall annually certify that its emissions are less than those that would require the facility 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).

D. Notification

1. Within 30 days of commencement of construction of any New Source Performance Standard (NSPS)-affected equipment, Knife River shall notify the Department of the date of commencement of construction of the affected equipment (ARM 17.8.340 and 40 CFR 60, Subpart A and Subpart I).

2. Within 15 days of the actual start-up date of any NSPS-affected equipment, Knife River shall submit written notification to the Department of the initial start-up date of the affected equipment (ARM 17.8.340 and 40 CFR 60, Subpart A and Subpart I).

3. Within 15 days of the actual start-up date of any non-NSPS-affected equipment, Knife River shall submit written notification to the Department of the initial start-up date of the affected equipment (ARM 17.8.749).

SECTION III: General Conditions

A. Inspection – Knife River 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 Knife River fails to appeal as indicated below.

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

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

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

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

G. Air Quality Permit Fees – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by Knife River 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. Knife River 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
Knife River, Inc.
MAQP #4865-00

I. Introduction/Process Description

Knife River, Inc. (Knife River) proposes to install and operate a portable rotary drum-mix asphalt plant with a maximum rated design capacity of 400 tons per hour (TPH) of asphalt production.

A. Permitted Equipment

The following list of permitted equipment is provided for reference, as Portions of MAQP #4865-00 are written de minimis friendly, whereby operational flexibility is provided so that alternate equipment may be utilized as long as maximum permitted capacities are not exceeded. See Section II of the MAQP for specific equipment limitations and/or conditions. Equipment permitted under this action includes, but is not limited to the following:

- 1989 CMI rotary drum dryer-mix asphalt plant with baghouse control – 97 million British Thermal Units per hour (mmbtu/hr) duel fuel-fired (Propane or waste oil)
- 1990 Gencor HYCGO100 asphalt oil storage tank and heater – 1.5 mmbtu/hr dual fuel (Propane or diesel)
- Hydrated lime storage silo with baghouse control
- Asphalt storage silo
- 1,350 brake-horse power primary diesel-fired generator set
- 188 bhp secondary diesel-fired generator set
- Aggregate handling equipment; conveyors, aggregate bins, RAP bin, etc.
- Associate Equipment

B. Source Description

For a typical operational set-up, aggregate materials are taken from the on-site aggregate stockpiles and dumped via a front end loader into the cold aggregate feed bins. The cold aggregate is then transferred from the cold aggregate feed bins via conveyor to a screen and weigh bridge conveyor which feeds the drum mixer. The cold aggregate is dried and heated within the drum mixer which is fired with propane or waste oil. The exhaust from the dryer vents to the atmosphere through the primary baghouse. The plant is also set-up to utilize reclaimed asphalt pavement (RAP) material, which is feed directly into the drum via a designated RAP bin. Liquid asphalt cement is introduced into the aggregate within the drum mixer. Hydrated lime is delivered from a storage silo to the drum via an enclosed feed auger system. Particulate emissions from the lime storage and feeder system are routed to a baghouse. Liquid asphalt cement is delivered through hoses from the portable hot oil heater tank. Once all the raw materials have been introduced into the drum mixer they are continuously mixed and heated by the drum mixer burner. A single diesel-fired generator set power the operation.

After heating and mixing is completed, the asphalt product is transferred from the drum mixer to the asphalt product silo via a conveyor. The asphalt remains in the asphalt silo until it is loaded into trucks for transport to a given job location.

The proposed home-pit designated for this plant is Section 6, Township 13 North, Range 19 West in Missoula County, Montana.

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 location of complete copies of all applicable rules and regulations or copies where appropriate.

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

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

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

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

   Knife River 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 (SO_2)
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide (NO_2)
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide (CO)
5. ARM 17.8.211 Ambient Air Quality Standards for Ozone (O_3)
6. ARM 17.8.220 Ambient Air Quality Standards for Settled Particulate Matter (PM)
7. ARM 17.8.221 Ambient Air Quality Standard for Visibility
8. ARM 17.8.223 Ambient Air Quality Standard for Particulate Matter with an Aerodynamic Diameter of Ten Microns or less (PM_{10})

Knife River must maintain compliance with the applicable ambient air quality standards.

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

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

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

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

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

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

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

7. ARM 17.8.340 Standard of Performance for New Stationary Sources. This rule incorporates, by reference, 40 Code of Federal Regulations (CFR) Part 60, Standards of Performance for New Stationary Sources (NSPS). Based on the information submitted by Knife River the portable drum mix-asphalt plant and associated equipment are subject to NSPS (40 CFR 60), as follows:

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

   b. 40 CFR 60, Subpart I – Standards of Performance of Hot Mix Asphalt Facilities. This subpart applies to any hot mix asphalt facility. Therefore, this facility 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. As the permit is written de minimis-friendly, Knife River may substitute compression

ignition internal combustion engine(s), therefore applicability to this subpart shall be dependent upon the date of construction and/or manufacture of the diesel engine utilized.

8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. This rule incorporates, by reference, 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Source Categories. Based on the information submitted by Knife River the diesel-fired engines associated with MAQP #4865-00 is applicable to NESHAP (40 CFR 63), as follows:

   a. 40 CFR 63, Subpart A – General Provisions. This subpart applies to all equipment or facilities subject to a NESHAP subpart as listed below:

   b. 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants (NESHAPs) 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. As Knife River is considered an area source of HAP emissions and operates RICE equipment the engine(s) are potentially subject to this subpart.

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

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. Knife River submitted the appropriate application fee for the current permit action.

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

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

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

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

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an MAQP or permit modification to construct, modify, or use any asphalt plant, crusher or screen that has the potential to emit (PTE) greater than 15 tpy of any pollutant. Knife River has a PTE greater than 15 tpy of oxides of nitrogen (NO_X), PM, PM_{10}, CO, SO_2, and volatile organic compounds (VOC); therefore, an MAQP is required.

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

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application. (1) This rule requires that a permit application be submitted prior to installation, modification, or use of a source. Knife River submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. Knife River submitted an affidavit of publication of public notice for the January 9, 2013, issue of the *Daily Interlake*, a newspaper of general circulation in the City of Kalispell in Flathead County, as proof of compliance with the public notice requirements.

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

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

8. ARM 17.8.755 Inspection of Permit. This rule requires that MAQPs 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 Knife River 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 MAQP 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 MAQP 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 MAQP 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 MAQP may be transferred from one person to another if written notice of intent to transfer, including the names of the transferor and the transferee, is sent to the Department.

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

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

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

   This facility is not a major stationary source because it is not a listed source and the facility's PTE is less than 250 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 tpy of any pollutant;

   b. PTE > 10 tpy of a single hazardous air pollutant (HAP), PTE > 25 tpy of combined HAPs, or lesser quantity as the Department may establish by rule; or

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

2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #4865-00 for Knife River, the following conclusions were made:

a. Knife River has requested that federally-enforceable permit operating limits be established to maintain the facility's PTE to less than 100 tpy.

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

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

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

e. This facility is potentially subject to a current NESHAP Standard (40 CFR 63, Subpart ZZZZ).

f. This source is not a Title IV affected source

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

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

Knife River 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. <u>ARM 17.8.1207 Certification of Truth, Accuracy, and Completeness</u>. 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. Knife River 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. Asphalt Drum Mixer

The Department reviewed relevant control options, as well as previous BACT determinations. The following control options were reviewed by the Department in order to make the following BACT determinations:

- Fabric Filter Baghouse
- Electrostatic Precipitator
- Cyclone
- Wet Scrubber

All of the listed technologies are deemed technically feasible for this application. Technical feasible control options, in order the highest control efficiency to the lowest control efficiency base on PM control are as follows:

1. Fabric Filter Baghouse (99 – 99.9% efficient) (EPA Fact Sheet EPA-452/F-03-025, 07/15/03)
2. Electrostatic Precipitator (99 – 99.9% efficient) (EPA Fact Sheet EPA-452/F-03-028, 07/15/03)
3. Cyclone (up to 99% efficient) (EPA Fact Sheet EPA-452/F-03-005, 07/15/03)
4. Wet Scrubber (70 – greater than 99% efficient) (EPA Fact Sheet EPA-452/F-03-0017, 07/15/03)

Knife River has proposed to use a fabric filter baghouse for the control of PM from the exhaust of the asphalt drum mixer. Because Knife River proposes to use a control technology that is equivalent to the highest control efficiency, no further economic analysis is needed. The control option selected has control technology and a control cost comparable to other recently permitted similar sources and is capable of achieving the appropriate emissions standards. Operating and maintaining a baghouse will constitute BACT for the asphalt drum mixer. All asphalt drum mixer emissions are limited to 0.04 grains per dry standard cubic foot (gr/dscf) for particulate and 20 percent opacity in accordance with 40 CFR 60, Subpart I. Knife River shall install and operate a device to measure the pressure drop (magnehelic gauge, manometer, etc.) across the fabric filter system, as well as temperature indicators at the baghouse inlet and outlet.

B. Mineral Filler Silo

Knife River will utilize a mineral filler (lime) as an additive to the asphalt. Mineral filler will be stored in an on-site silo and will be added to the asphalt drum mixer as needed. The PM emissions generated from the filling the silo will be routed to a dedicated baghouse. As with the asphalt drum mixer BACT analysis, Knife River has proposed to utilize a control technology that is equivalent to the highest control efficiency. The baghouse is considered to be the BACT for controlling the PM emissions associated with the mineral filler silo. In accordance with 40 CFR 60, Subpart I, systems for loading, transferring, and storing mineral filler are considered part of an affected facility and emissions are limited to 0.04 gr/dscf for PM and 20 percent opacity. Knife River shall install and operate a device to measure the pressure drop (magnehelic gauge, manometer, etc.) across the fabric filter system.

C. Diesel Generators

Due to the limited amount of emissions produced by the diesel-fired engine(s) used in association with MAQP #4865-00 and the lack of cost effective add-on controls, such add-on controls would be cost prohibitive. Therefore, the Department determined that proper operation and maintenance with no add-on controls would constitute BACT for the diesel-fired engine(s).

In addition, any existing and new diesel-fired engine would likely be required to comply with the federal engine emission limitations including, EPA Tiered emission standards for non-road engines (40 CFR Parts 89 and 1039), New Source Performance Standard emission limitations for stationary compression ignition engines (40 CFR 60, Subpart IIII), or National Emissions Standards for Hazardous Air Pollutant Sources for Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ). Therefore, the Department has determined that compliance with applicable federal standards and proper operation and maintenance of the engines constitutes BACT for these engines.

D. Fugitive Emissions

Knife River must take reasonable precautions to limit the fugitive emissions of airborne particulate matter on haul roads, access roads, parking lots, and the general plant area. Reasonable precautions include treating 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. Using water and/or chemical dust suppressant to comply with the reasonable precautions limitation will be considered BACT.

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

IV. Emission Inventory

	Emissions Tons/Year [PTE] [(a)(b)(c)]						
Emission Source	PM	PM_{10}	$PM_{2.5}$	CO	NOx	SO_2	VOC
Rotary Drum Mix Asphalt Plant w/ baghouse	18.48	12.88	12.49	72.80	30.80	32.48	17.92
Asphalt Binder Storage Bin & Heater	0.05	0.02	0.00	0.17	0.37	0.109	0.01
Aggregate Handling & Storage Piles	5.57	2.64	0.40	--	--	--	--
Aggregate Screening &Conveying	2.62	0.88	0.57	--	--	--	--
Lime Silo transfer & Conveying	0.05	0.05	0.05	--	--	--	--
Asphalt Storage & Handling	0.33	0.33	0.33	0.66	--	--	6.82
Asphalt Load-Out	0.29	0.29	0.29	0.76	--	--	2.33
Primary Diesel Engine [≤ 1,350 bhp]	4.16	4.16	0.74	12.63	58.59	3.87	4.75
Secondary Diesel Engine [≤188 bhp]	0.58	0.58	0.10	1.76	8.16	0.54	0.66
Unpaved Roadways	5.49	1.51	0.15	--	--	--	--
TOTAL EMISSIONS ►	37.62	23.33	15.12	88.77	97.92	37.00	32.50

(a) Emission Inventory reflects enforceable limits on hours of operation of the diesel-fired generator engine and asphalt production throughput to maintain allowable CO and NO_x emissions below the Title V threshold [100 tpy].

(b) $PM/PM_{10}/PM_{2.5}$ emissions presented in the table represent the sum of the filterable and condensable particulate matter (CPM) fractions.

(c) For dual fuel combustion equipment the Emission inventory presents the emission factors resulting in the highest emission rate.

ASOS, Automated Surface Observing System
AWOS, Automated Weather Observing System
bhp, brake-horsepower
CO, carbon monoxide
Btu, million British Thermal Units
dscf, dry standard cubic feet
°F, degrees Fahrenheit
ft^3, cubic feet
g, grams
gr, grains
Hg, mercury
HMA, hot mix asphalt
hr, hour
lbs, pounds
mm, million
NO_X, oxides of nitrogen
PTE, Potential To Emit
PM, particulate matter
PM_{COND}, condensable particulate matter [< 2 .5 microns]
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
scf, standard cubic feet
SM, synthetic minor (with respect to Title V criteria pollutants)
SO_2, sulfur dioxide
TPH, tons per hour
TPY, tons per year
VOC, volatile organic compounds

Rotary Drum Hot-Mix Asphalt Plant with Baghouse [SCC 3-05-002-55/SCC 3-05-002-63]

1989 CMI PTD-400 HMA Plant (Counter-Flow Drum Mixer)
Dryer fuel Configuration: Duel fuel - Waste Oil, Natural Gas, or Propane
Maximum Rated Heat Input: 97 mmbtu/hr
Control Equipment: Standard Havens PB Air Pulse Baghouse
Production Rate: 400 Tons/Hour (Maximum) 1120000 tons/year (Restricted Maximum)

Power Plant: 1350 bhp Primary Diesel-Fired Generator Set (Asphalt Plant & Production Power Supply)
188 bhp Secondary Diesel-Fired Generator Set (Non-Production Power Supply)
Note: Asphalt Plant May Operate On Utility Supplied Power

Operating Hours: 2800 Hours/Year (Restricted Maximum)

Plant Elevation:	3208	feet (initial location)	
Pressure at Altitude:	26.66	inches Hg (estimate at 68ºF)	
STP:	29.92	inches. Hg @ 68 ºF	55454 ºRankine

Stack Parameters:

Actual Flow Rate (volume):	19,541	acfm (application)	
Stack Temperature:	246	ºF (application)	705.67 ºRankine
Stack Gas Moisture:	12	% (estimate)	
Std. Flow Rate (volume):	13020	scfm	
Dry Std. Flow Rate (volume):	11458	dscfm	

*Std. Volumetric Flow rate Correction (acfm → scfm) V1 = V2 * (P2/P1) * (T1//T2)*

Particulate Emissions: Stack Parameters (controlled)

PM Emissions:
Emission Rate 0.04 gr/dscf [Permit Limit]
Calculations (0.04 gr/dscf) * (11458 dscfm) * (60 min/hr) * (1 lb / 7000 gr) = 3.93 lbs/hr
(3.93 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) = 5.50 TPY

PM_{10} Emissions:
Emission Rate 0.012 gr/dscf [30% PM_{10} to PM, AP-42 Table 11.1-4, 3/04]
Calculations (0.012 gr/dscf) * (11458 dscfm) * (60 min/hr) * (1 lb / 7000 gr) = 1.18 lbs/hr
(1.18 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) = 1.65 TPY

$PM_{2.5}$ Emissions:
Emission Rate 0.0084 gr/dscf [21% $PM_{2.5}$ to PM, AP-42 Table 11.1-4, 3/04]
Calculations (0.0084 gr/dscf) * (11458 dscfm) * (60 min/hr) * (1 lb / 7000 gr) = 0.82 lbs/hr
(0.82 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) = 1.15 TPY

Particulate Emissions: Emission Factor Determination (Controlled)

PM Emissions:
Emission Rate 0.033 lbs/ton Asphalt Product [AP-42 Table 11.1-3, 3/04]
Calculations (0.033 lbs/ton) * (400 tons/hour) = 13.20 lbs/hr
(13.20 lbs/hr) * (2800 hours/year) * (0.0005 tons/lbs) = 18.48 TPY

PM_{10} Emissions:
Emission Rate 0.023 lbs/ton Asphalt Product [AP-42 Table 11.1-3, 3/04]
Calculations (0.023 lbs/ton) * (400 tons/hour) = 9.20 lbs/hr

(9.20 lbs/hr) * (2800 hours/year) * (0.0005 tons/lbs) = 12.88 TPY

PM_{10} Emissions (filterable):

Emission Rate	0.0039 lbs/ton Asphalt Product	[AP-42 Table 11.1-3, 3/04]	
Calculations	(0.0039 lbs/ton) * (400 tons/hour) =		1.56 lbs/hr
	(1.56 lbs/hr) * (2800 hours/year) * (0.0005 tons/lbs) =		2.18 TPY

$PM_{2.5}$ Emissions (filterable):

Emission Rate	0.0029 lbs/ton Asphalt Product	[AP-42 Table 11.1-4, 3/04]	
Calculations	(0.0029 lbs/ton) * (400 tons/hour) =		1.16 lbs/hr
	(1.16 lbs/hr) * (2800 hours/year) * (0.0005 tons/lbs) =		1.62 TPY

$PM_{2.5}$ Emissions (condensable):

Emission Rate	0.0194 lbs/ton Asphalt Product	[AP-42 Table 11.1-3, 3/04]	
Calculations	(0.0194 lbs/ton) * (400 tons/hour) =		7.76 lbs/hr
	(7.76 lbs/hr) * (2800 hours/year) * (0.0005 tons/lbs) =		10.86 TPY

CO Emissions (uncontrolled):

Emission Factor	0.13 lbs/ton Asphalt Product	[AP-42 Table 11.1-7, 3/04]	
Calculations	(0.13 lbs/ton) * (400 tons/hr) =		52.00 lbs/hr
	(52.00 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		72.80 TPY

NO_X Emissions (uncontrolled):

Emission Factor	0.055 lbs/ton Asphalt Product	[AP-42 Table 11.1-7, 3/04 - waste oil]	
Calculations	(0.055 lbs/ton) * (400 tons/hr) =		22.00 lbs/hr
	(22.00 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		30.80 TPY

SO_2 Emissions (uncontrolled):

Emission Factor	0.0580 lbs/ton Asphalt Product	[AP-42 Table 11.1-7, 3/04 - waste oil]	
Calculations	(0.058 lbs/ton) * (400 tons/hr) =		23.20 lbs/hr
	(23.20 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		32.48 TPY

VOC Emissions (uncontrolled):

Emission Factor	0.032 lbs/ton Asphalt Product	[AP-42 Table 11.1-8, 3/04]	
Calculations	(0.032 lbs/ton) * (400 tons/hr) =		12.80 lbs/hr
	(12.80 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		17.92 TPY

CH4 Emissions (uncontrolled):

Emission Factor	0.012 lbs/ton Asphalt Product	[AP-42 Table 11.1-8, 3/04]	
Calculations	(0.012 lbs/ton) * (400 tons/hr) =		4.80 lbs/hr
	(4.80 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		6.72 TPY

CO2 Emissions (uncontrolled):

Emission Factor	33 lbs/ton Asphalt Product	[AP-42 Table 11.1-8, 3/04]	
Calculations	(33 lbs/ton) * (400 tons/hr) =		13200.00 lbs/hr
	(13,200.00 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		18480.00 TPY

CO2e Emissions (uncontrolled):

CO2e (CH4)

Emission Factor	21 GWP	(USEPA 40 CFR 98, Subpart A - Table A-1)

Calculations	(21 GWP) * (6.72 TPY) =	141.12 TPY
Total CO2e	(141.12 TPY CO2e (CH4)) + (18480 TPY CO2) =	18621.12 TPY

HAPs Emissions (controlled):

Emission Factor	0.0053 lbs/ton Asphalt Product [AP-42 Table 11.1-10, 3/04 - NG]	
Calculations	(0.0053 lbs/ton) * (400 tons/hr) =	2.12 lbs/hr
	(2.12 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =	2.97 TPY

Gencor HYCGO100 Asphalt Heater [SCC 3-05-002-08 or SCC 3-05-002-06]

Fuel Type:	Dual Fuel - Diesel or Natural Gas
Burner Firing Rate:	1.50 mmbtu/hr [Maximum Design]
Fuel Rate (Diesel):	10.9 gallons/hour [Estimated →19,300 btu/lb]
	77.72 lbs/hr [7.1 lbs/gal]
Fuel Rate (NG):	0.0015 mmscf/hr [1020 btu/scf]
Operating Hours:	2800 hrs/year

Particulate Emissions (uncontrolled):

PM Emissions (total):

Emission Factor	PM (filterable) + PM (condensable)	
Calculations	0.022 lbs/hr PM (filterable) + 0.014 lbs/hr PM (condensable) =	0.04 lbs/hr
	(0.036 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =	0.05 TPY

PM Emissions (filterable):

Emission Factor	2.0 lbs/10^3 gallons [AP-42 Table 1.3-1, 5/10 - diesel]	
Calculations	(2.0 lbs / 1,000 gal) * (10.95 gal/hr) =	0.02 lbs/hr
	(0.022 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =	0.03 TPY

PM_{10} Emissions (total):

Emission Factor	PM10 (filterable) + PM10 (condensable)	
Calculations	0.011 lbs/hr PM10 (filterable) + 0.014 lbs/hr PM10 (condensable) =	0.03 lbs/hr
	(0.025 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =	0.04 TPY

PM_{10} Emissions (filterable):

Emission Factor	1.0 lbs/10^3 gallons [AP-42 Table 1.3-6, 5/10 - diesel]	
Calculations	(1.0 lbs / 1,000 gal) * (10.9 gal/hr) =	0.01 lbs/hr
	(0.011 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =	0.02 TPY

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.25 lbs/10^3 gallons [AP-42 Table 1.3-6, 5/10 - diesel]	
Calculations	(0.25 lbs / 1,000 gal) * (10.9 gal/hr) =	0.003 lbs/hr
	(0.003 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =	0.00 TPY

$PM_{2.5}$ Emissions (condensable):

Emission Factor	1.30 lbs/10^3 gallons* [AP-42 Table 1.3-2, 5/10 -diesel]	
Calculations	(1.3 lbs / 1,000 gal) * (10.9 gal/hr) =	0.01 lbs/hr
	(0.014 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =	0.02 TPY

** All PM condensable assumed < 1.0 micron in diameter*

CO Emissions (uncontrolled):

Emission Factor	84.0 lbs/10^6 scf	[AP-42 Table 1.4-1, 7/98 - NG]	
Calculations	(84.0 lbs/106 scf) * (0.0015 mmscf/hr) =		0.12 lbs/hr
	(0.124 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		0.17 TPY

NO_X Emissions (uncontrolled):

Emission Factor	24 lbs/10^3 gallons	[AP-42 Table 1.3-1, 5/10 - diesel]	
Calculations	(24.0 lbs / 1,000 gal) * (10.9 gal/hr) =		0.26 lbs/hr
	(0.26 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		0.37 TPY

SO_2 Emissions (uncontrolled):

Emission Factor	(77.72 lbs/hr)*(0.05%/100)*(1 lb mol S/32.1 lb S)*(64.1 lb SO2/lb mol SO2) =	0.08 lbs/hr
Calculations	(0.08 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =	
	** Based on maximum diesel fuel sulfur content of 500 ppm [40 CFR 80.510(a)(1)]*	0.11 TPY

VOC Emissions (uncontrolled):

Emission Factor	lbs/10^6 scf 5.500	[AP-42 Table 1.4-2, 7/98 - NG]	
Calculations	(5.5 lbs/106 scf) * (0.0015 mmscf/hr) =		0.01 lbs/hr
	(0.008 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		0.011 TPY

Aggregate Handling & Load-in [SCC 30500216]

Process Rate: 400 tons/hour
Number of Piles: 2 pile Transfers [Initial Pile Load-In → Aggregate Load-Out to Feed Bin]
Operating Hours: 2800 hours/year

Particulate Emissions (controlled):

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

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

k, Dimensionless Particle Size Multiplier PM =	0.74	[AP-42 13.2.4, 11/06]
k, Dimensionless Particle Size Multiplier PM_{10} =	0.35	[AP-42 13.2.4, 11/06]
k, Dimensionless Particle Size Multiplier $PM_{2.5}$ =	0.053	[AP-42 13.2.4, 11/06]
U, Mean Wind Speed (mph) =	9.3	[ASOS/AWOS AVE-MT 10 yr Ave.]
M, Material Moisture Content (%) =	2.1	[AP-42 13.2.4-1, 11/06]

PM Emissions:

Emission Factor	EF = 0.74 * (0.0032) * [(9.33/5)^1.3 / (2.1 / 2)^1.4] =	0.0050 lbs/ton	
Calculations	(0.0050 lbs/ton) * (400 tons/hr) * (2 pile) =		3.98 lbs/hr
	(3.98 lbs/hr) * (2800 hrs/year) * (0.0005 lbs/ton) =		5.57 TPY

PM_{10} Emissions:

Emission Factor	EF = 0.35 * (0.0032) * (7.0/5)^1.3 / (2.1 / 2)^1.4 =	0.0024 lbs/ton	
Calculations	(0.0024 lbs/ton) * (400 tons/hr) * (2 pile) =		1.88 lbs/hr
	(1.88 lbs/hr) * (2800 hrs/year) * (0.0005 lbs/ton) =		2.64 TPY

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.053 * (0.0032) * (7.0/5)^1.3 / (2.1 / 2)^1.4 = 0.0004 lbs/ton	
Calculations	(0.0004 lbs/ton) * (400 tons/hr) * (2 pile) =	0.29 lbs/hr
	(0.29 lbs/hr) * (2800 hrs/year) * (0.0005 lbs/ton) =	0.40 TPY

Aggregate Screening & Conveyor Transfer [SCC 3-05-020-02 & 3-05-020-06]

Process Rate: 400 tons/hour
Number of Transfers: 2 Transfers
Operating Hours: 2800 hours/year

PM Emissions (controlled):

Emission Factor	0.0023 lbs/ton transferred [AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00234 lbs/ton) * (400 tons/hr) * (2 Transfers) =	1.87 lbs/hr
	(1.87 lbs/hr) * (2800 hrs/year) * (0.0005 lbs/ton) =	2.62 TPY

PM_{10} Emissions (controlled):

Emission Factor	0.00079 lbs/ton transferred [AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00079 lbs/ton) * (400 tons/hr) * (2 Transfers) =	0.63 lbs/hr
	(0.63 lbs/hr) * (2800 hrs/year) * (0.0005 lbs/ton) =	0.88 TPY

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.000513 lbs/ton transferred [AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.000513 lbs/ton) * (400 tons/hr) * (2 Transfers) =	0.41 lbs/hr
	(0.41 lbs/hr) * (2800 hrs/year) * (0.0005 lbs/ton) =	0.57 TPY

Lime Silo Product transfer & Conveying [SCC 3-05-016-24]

Process Rate: 400 tons/hour
Operating Hours: 2800 hours/year

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.000088 lbs/ton material transferred [AP-42 Table 11.17-4, 2/98]	
Calculations	(0.000088 lbs/ton) * (400 tons/hr) =	0.035 lbs/hr
	(0.04 lbs/hr) * (2800 hrs/year) * (0.0005 lbs/ton) =	0.05 TPY

PM_{10} Emissions (controlled):

Emission Factor	0.000088 lbs/ton material transferred [AP-42 Table 11.17-4, 2/98]	
Calculations	(0.000088 lbs/ton) * (400 tons/hr) =	0.035 lbs/hr
	(0.04 lbs/hr) * (2800 hrs/year) * (0.0005 lbs/ton) =	0.05 TPY

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.000088 lbs/ton material transferred [AP-42 Table 11.17-4, 2/98]	
Calculations	(0.000088 lbs/ton) * (400 tons/hr) =	0.04 lbs/hr
	(0.04 lbs/hr) * (2800 hrs/year) * (0.0005 lbs/ton) =	0.05 TPY

Asphalt Storage & Silo Filling [SCC 3-05-002-13]

Process Rate: 400 tons/hour
Operating Schedule: 2800 tons/year

Particulate Emissions (uncontrolled):

Emission Factor $EF = 0.000332+0.00105(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]

where: EF, Emission Factor = lbs emitted / ton HMA produced
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

PM Emissions:

Emission Factor	EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00059 lbs/ton HMA
Calculations	(0.00059 lbs/ton) * (400 tons/hr) =	0.23 lbs/hr
	(0.23 lbs/hr) * (2800 tons/year) * (0.0005 lbs/ton) =	0.33 TPY

PM_{10} Emissions:

Emission Factor	EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00059 lbs/ton HMA
Calculations	(0.00059 lbs/ton) * (400 tons/hr) =	0.23 lbs/hr
	(0.23 lbs/hr) * (2800 tons/year) * (0.0005 lbs/ton) =	0.33 TPY

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00059 lbs/ton HMA
Calculations	(0.00059 lbs/ton) * (400 tons/hr) =	0.23 lbs/hr
	(0.23 lbs/hr) * (2800 tons/year) * (0.0005 lbs/ton) =	0.33 TPY

CO Emissions (uncontrolled):

Emission Factor EF = $0.00488(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

CO Emissions (uncontrolled):

Emission Factor	EF = 0.00488 * (0.05)*e((0.0251) * (325 + 460) - 20.43) =	0.0012 lbs/ton HMA
Calculations	(0.0012 lbs/ton) * (400 tons/hr) =	0.47 lbs/hr
	(0.47 lbs/hr) * (2800 tons/year) * (0.0005 lbs/ton) =	0.66 TPY

VOC Emissions (uncontrolled):

Emission Factor EF = $0.0504(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

VOC Emissions (uncontrolled):

Emission Factor	EF = 0.0504 * (0.05) * e ((0.0251) * (325 + 460) - 20.43) =	0.0122 lbs/ton HMA
Calculations	(0.0122 lbs/ton) * (400 tons/hr) =	4.87 lbs/hr
	(4.87 lbs/hr) * (2800 tons/year) * (0.0005 lbs/ton) =	6.82 TPY

Asphalt Plant Load-Out [SCC 3-05-002-14]

Process Rate: 400 tons/hour
Operating Schedule: 2800 hours/year

Particulate Emissions (uncontrolled):

Emission Factor EF = $0.000181+0.00141(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
where: EF, Emission Factor = lbs emitted / ton HMA produced
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

PM Emissions:

Emission Factor	EF = 0.000181 + 0.00141 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00052 lbs/ton HMA
Calculations	(0.00052 lbs/ton) * (400 tons/hr) =	0.21 lbs/hr
	(0.21 lbs/hr) * (2800 tons/year) * (0.0005 lbs/ton) =	0.29 TPY

PM_{10} Emissions:

Emission Factor	EF = 0.000181 + 0.00141 * (0.05) * *e* ((0.0251) * (325 + 460) - 20.43) =	0.00052 lbs/ton HMA
Calculations	(0.00052 lbs/ton) * (400 tons/hr) =	0.21 lbs/hr
	(0.21 lbs/hr) * (2800 tons/year) * (0.0005 lbs/ton) =	0.29 TPY

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.000181 + 0.00141 * (0.05) * *e* ((0.0251) * (325 + 460) - 20.43) =	0.00052 Lbs/ton HMA
Calculations	(0.00052 lbs/ton) * (400 tons/hr) =	0.21 lbs/hr
	(0.21 lbs/hr) * (2800 tons/year) * (0.0005 lbs/ton) =	0.29 TPY

CO Emissions (uncontrolled):

Emission Factor $EF = 0.00558(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]

where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

CO Emissions:

Emission Factor	EF = 0.00558 * (0.05) * *e* ((0.0251) * (325 + 460) - 20.43) =	0.00135 lbs/ton HMA
Calculations	(0.00135 lbs/ton) * (400 tons/hr) =	0.54 lbs/hr
	(0.54 lbs/hr) * (2800 tons/year) * (0.0005 lbs/ton) =	0.76 TPY

VOC Emissions (uncontrolled):

Emission Factor $EF = 0.0172(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]

where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

VOC Emissions:

Emission Factor	EF = 0.0172 * (0.05) * e ((0.0251) * (325 + 460) - 20.43) =	0.00416 lbs/ton HMA
Calculations	(0.00416 lbs/ton) * (400 tons/hr) =	1.66 lbs/hr
	(1.66 lbs/hr) * (2800 tons/year) * (0.0005 lbs/ton) =	2.33 TPY

Diesel Generator Engines [SCC 2-02-001-02]

Primary Diesel-Fired Generator Set (Asphalt Plant & Production Power Supply)

Engine Rating:	1350 bhp [Design Maximum Output]
Fuel Input:	9.45 MMBtu/hr [BSFC →7,000 Btu/hp-hr]
	69.0 gallons/hour [Estimated →19,300 Btu/lb]
Hours of Operation:	2800 hours/year

Particulate Emissions (uncontrolled):

PM Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 3.3-1, 10/96]

Calculations	(0.0022 lb/hp-hr) * (1350 bhp) =		2.97 lbs/hr
	(2.97 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		4.16 TPY

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (1350 bhp) =		2.97 lbs/hr
	(2.97 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		4.16 TPY

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu	[AP-42 3.4-2, 10/96]	
Calculations	(0.0479 lb/MMBtu) * (0.00 MMBtu/hr) =		0.45 lbs/hr
	(0.45 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		0.63 TPY

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu	[AP-42 3.4-2, 10/96]	
Calculations	(0.0077 lb/MMBtu) * (9.45 MMBtu/hr) =		0.07 lbs/hr
	(0.07 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		0.10 TPY

CO Emissions (controlled):

Emission Factor	0.00668 lb/hp-hr	[AP-42 3.3-1, 10/96]	
	(0.00668 lb/hp-hr) * (1350 bhp)		
Calculations	=		9.02 lbs/hr
	(9.02 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		12.63 TPY

NOx Emissions (uncontrolled):

Emission Factor	0.031 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.031 lb/hp-hr) * (1350 bhp) =		41.85 lbs/hr
	(41.85 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		58.59 TPY

SO_2 Emissions (uncontrolled):

Emission Factor	0.00205 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.0021 lb/hp-hr) * (1350 bhp) =		2.77 lbs/hr
	(2.77 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		3.87 TPY

VOC Emissions (uncontrolled):

Emission Factor	0.002514 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.0025 lb/hp-hr) * (1350 bhp) =		3.39 lbs/hr
	(3.39 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		4.75 TPY

Secondary Diesel-Fired Generator Set (Non-Production Power Supply)

Engine Rating:	188 bhp [Design Maximum Output]
Fuel Input:	1.32 MMBtu/hr [BSFC →7,000 Btu/hp-hr]
	9.6 gallons/hour [Estimated →19,300 Btu/lb]
Hours of Operation:	2800 hours/year

Particulate Emissions(uncontrolled):

PM Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (188 bhp) =		0.41 lbs/hr
	(0.41 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		0.58 TPY

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (188 bhp) =		0.41 lbs/hr
	(0.41 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		0.58 TPY

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu	[AP-42 3.4-2, 10/96]	
Calculations	(0.0479 lb/MMBtu) * (0.00 MMBtu/hr) =		0.06 lbs/hr
	(0.06 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		0.09 TPY

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu	[AP-42 3.4-2, 10/96]	
Calculations	(0.0077 lb/MMBtu) * (1.316 MMBtu/hr) =		0.01 lbs/hr
	(0.01 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		0.01 TPY

CO Emissions (uncontrolled):

Emission Factor	0.00668 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.00668 lb/hp-hr) * (188 bhp) =		1.26 lbs/hr
	(1.26 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		1.76 TPY

NOx Emissions (uncontrolled):

Emission Factor	0.031 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.031 lb/hp-hr) * (188 bhp) =		5.83 lbs/hr
	(5.83 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		8.16 TPY

SO_2 Emissions (uncontrolled):

Emission Factor	0.00205 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.0021 lb/hp-hr) * (188 bhp) =		0.39 lbs/hr
	(0.39 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		0.54 TPY

VOC Emissions (uncontrolled):

Emission Factor	0.002514 lb/hp-hr	[AP-42 3.3-1, 10/96]	
Calculations	(0.0025 lb/hp-hr) * (188 bhp) =		0.47 lbs/hr
	(0.47 lbs/hr) * (2800 hrs/yr) * (0.0005 tons/lb) =		0.66 TPY

Unpaved Roadways (Haul Roads) - Secondary Emissions

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

Particulate Emissions (controlled):

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

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

k,	Empirical Constant PM =	4.9	[AP-42 Table 13.2.2-2, 11/06]
k,	Empirical Constant PM_{10} =	1.5	[AP-42 Table 13.2.2-2, 11/06]
k,	Empirical Constant $PM_{2.5}$ =	0.15	[AP-42 Table 13.2.2-2, 11/06]

s,	Surface Material Silt Content (%) =	7.1	[AP-42 Table 13.2.2-1, 11/06]
W,	Mean Vehicle Weight (tons) =	50	[Applicant Provided Data]
a,	Empirical Constant PM =	0.7	[AP-42 Table 13.2.2-2, 11/06]
a,	Empirical Constant $PM_{10}/PM_{2.5}$ =	0.9	[AP-42 Table 13.2.2-2, 11/06]
b,	Empirical Constant PM - $PM_{2.5}$ =	0.45	[AP-42 Table 13.2.2-2, 11/06]

PM Emissions:				
Emission Factor	EF = 4.9 * (7.1/12)^0.7 * (50/3)^0.45 =	12.04	lbs/VMT	
Calculations	(12.04 lbs/VMT) * (5 miles/day) * (1 - 0.5 Ce) =			30.09 lbs/day
	(30.09 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =			5.49 TPY
PM_{10} Emissions:				
Emission Factor	EF = 1.5 * (7.1/12)^0.9 * (50/3)^0.45 =	3.32	lbs/VMT	
Calculations	(3.32 lbs/VMT) * (5 miles/day) * (1 - 0.5 Ce) =			8.29 lbs/day
	(8.29 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =			1.51 TPY
$PM_{2.5}$ Emissions:				
Emission Factor	EF = 0.15 * (7.1/12)^0.9 * (50/3)^0.45 =	0.33	lbs/VMT	
Calculations	(0.33 lbs/VMT) * (5 miles/day) * (1 - 0.5 Ce) =			0.83 lbs/day
	(0.83 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =			0.15 TPY

V. Existing Air Quality

The home-pit location of this portable source is Section 6, Township 13 North, Range 19 West in Missoula County, Montana. The initial location and those areas for which this facility is permitted to operate under MAQP #4865-00 has been designated unclassified/attainment with all ambient air quality standards and there are no major air pollution sources in the surrounding area.

Addendum #1 to this permit will apply to the source while operating in or within 10 km of any nonattainment areas.

VI. Air Quality Impacts

MAQP #4865-00 covers operation of this asphalt plant while operating in areas within Montana that are classified as attainment or unclassifiable with federal ambient air quality standards, excluding counties that have a Department-approved permitting program and areas that are tribal lands. This permit contains conditions and limitations that would protect air quality, and would limit the facility's emissions below the major source threshold. Furthermore, this facility is a portable source that would operate on an intermittent and temporary basis, so any effects to air quality will be minor and of limited duration.

If the source locates and operates in or within 10 km of any PM_{10} nonattainment area, Knife River will be required to operate in accordance with MAQP #4865-00 and Addendum #1, which includes more stringent limits and conditions to ensure that the proposed operation does not result in additional degradation of air quality in the affected nonattainment area. A more detailed discussion and analysis of ambient impacts from operations locating in or within 10 km of certain PM_{10} nonattainment areas is contained in the Addendum Analysis to Addendum #1 of MAQP #4865-00.

VII. Ambient Air Impact Analysis

The Department determined that there will be no significant impact from this permit action because this permitting action is considered an administrative action. Furthermore, the

Department believes that the amount of emissions generated by this project will not exceed any set ambient standard.

VIII. Taking or Damaging Implication Analysis

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

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

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

IX. Environmental Assessment

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

Permit Analysis Prepared by: D. Kuenzli
Date: February 22, 2013

Addendum #1
Knife River, Inc.
Montana Air Quality Permit (MAQP) #4865-00

An addendum to MAQP #4865-00 is issued to Knife River, Inc. (Knife River), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended, for the following:

I. Permitted Equipment

Knife River owns and operates a portable rotary drum-mix asphalt plant and baghouse with a maximum rated design capacity of 400 tons per hour (TPH) of asphalt production.

II. Seasonal and Site Restrictions

Addendum #1 applies to the Knife River 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) – Knife River may operation at any locations in or within 10 km of the Butte, Columbia Falls, Kalispell, Libby, Thompson Falls, and Whitefish PM_{10} nonattainment areas.

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

C. Knife River shall comply with the limitations and conditions contained in Addendum #1 to MAQP #4865-00 while operating in or within 10 km of any of the previously identified PM_{10} nonattainment areas. Addendum #1 shall be valid until revoked or modified. The Department of Environmental Quality (Department) reserves the authority to modify Addendum #1 at any time based on local conditions of any future site. These conditions may include, but are not limited to, local terrain, meteorological conditions, proximity to residences or other businesses, etc.

III. Limitations and Conditions

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

1. Asphalt plant particulate matter emissions shall be limited to 0.040 grains per dry standard cubic feet (gr/dscf) (ARM 17.8.752 and 40 Code of Federal Regulations (CFR) 60, Subpart I).

2. All visible emissions from the asphalt plant stack shall not exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

3. Knife river shall not cause or authorize to be discharged into the atmosphere from any equipment, such as 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 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

4. Knife River shall not cause or authorize to be discharged into the atmosphere from haul roads, access roads, parking lots, or the general plant area, any visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

5. Knife River shall treat all unpaved portions of the haul roads, access roads, parking lots, and general plant area with water and/or chemical dust suppressant, as necessary to maintain compliance with the 10% opacity limitation contained in Section III.A.4 (ARM 17.8.749).

6. Hot-mix asphalt production shall not exceed 1,600 tons during any rolling 24-hour time period (ARM 17.8.749).

7. Operation of the hot-mix asphalt plant, including the diesel-fired generator sets, shall not exceed fours (4) hours per day (ARM 17.8.749).

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

1. Asphalt plant particulate matter emissions shall be limited to 0.040 grains per dry standard cubic feet (gr/dscf) (ARM 17.8.752 and 40 Code of Federal Regulations (CFR) 60, Subpart I).

2. All visible emissions from the asphalt plant stack shall not exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

3. Knife river shall not cause or authorize to be discharged into the atmosphere from any equipment, such as 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 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

4. Knife River shall not cause or authorize to be discharged into the atmosphere from haul roads, access roads, parking lots, or the general plant area, any visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

5. Knife River shall treat all unpaved portions of the haul roads, access roads, parking lots, and general plant area with water and/or chemical dust suppressant, as necessary to maintain compliance with the 10% opacity limitation contained in Section III.A.4 (ARM 17.8.749).

6. Hot-mix asphalt production shall not exceed 9,600 tons during any rolling 24-hour time period (ARM 17.8.749).

B. Operational Reporting Requirements

1. If this 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 production at each site. Knife River shall document, by day, the total asphalt production. Knife River shall sum the total asphalt production for the previous day to demonstrate compliance with the limitations in Sections III.A.6 and III.B.6.

   b. Daily hours of operation of the hot-mix asphalt plant and the diesel-fired generator set(s) at each site. Knife River shall document, by day, the hours operated. Knife River shall sum the total operating hours for the previous day to demonstrate compliance with the limitations in Section III.A.7.

   c. Daily hours of operation at each site.

   d. Daily hours of operation and the hp for each engine at each site.

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

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

Addendum #1 Analysis
Knife River, Inc.
Montana Air Quality Permit (MAQP) #4865-00

I. Permitted Equipment

Knife River Excavating, Inc. (Knife River) owns and operates a portable rotary drum-mix asphalt plant and baghouse with a maximum rated design capacity of 400 tons per hour (TPH) of asphalt production.

II. Source Description

Knife River proposes to use this asphalt plant in the production of hot-mix asphalt. For a typical operational set-up, aggregate materials are fed via conveyor to the drum mixer, where the aggregate is dried and heated. Subsequently, mineral filler and asphalt oil are introduced into the drum mixer. Mineral filler is delivered from a storage silo to the drum via an enclosed feed auger system. Particulate emissions from the mineral filler storage and feeder system, as well as drum mixer, are routed to a baghouse for control. The raw materials are introduced into the drum mixer and continuously mixed and heated by the drum mixer until desired properties are obtained.

After heating and mixing is complete, the asphalt product is transferred from the drum mixer to the asphalt product silo, where the asphalt remains until it is loaded into trucks for transport. The operation is powered through the use of on-site diesel-fired engine generators.

III. Applicable Rules and Regulations

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

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

A. <u>ARM 17.8.749 Conditions for Issuance of Permit</u>. 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. <u>ARM 17.8.764 Administrative Amendment to Permit</u>. 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. <u>ARM 17.8.765 Transfer of Permit</u>. 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

	PM_{10} Emissions [PTE]		
		Summer Season [April 1-Sept 30][(a)]	Winter Season [Oct 1-March 31][(b)]
Emission Source	(lbs/hr)	(lbs/day)	(lbs/day)
Rotary Drum Mix Asphalt Plant w/ Baghouse	13.200	316.80	52.80
Liquid Asphalt Storage Bin & Heater	0.011	0.26	0.04
Aggregate Handling & Storage Piles	1.883	45.19	7.53
Aggregate Screening &Conveying	0.629	15.09	2.52
Lime Silo transfer & Conveying	0.035	0.84	0.14
Asphalt Storage & Handling	0.234	5.62	0.94
Asphalt Load-Out	0.209	5.01	0.84
Primary Diesel Engine [≤ 1,350 bhp]	2.970	71.28	11.88
Secondary Diesel Engine [≤188 bhp]	0.414	9.93	1.65
Unpaved Roadways	--	6.34	1.06
TOTAL EMISSIONS ►	19.585	476.37	79.39

(a) Emission Inventory reflects operation of the asphalt plant and associated equipment on a 24 hour schedule to demonstrate that potential PM_{10} emissions are below 547 pounds per day threshold.

(b) Emission Inventory reflects operation of the asphalt plant and associated equipment on a 4 hour schedule to demonstrate that potential PM_{10} emissions are below 82 pounds per day threshold.

ASOS, Automated Surface Observing System
AWOS, Automated Weather Observing System
bhp, brake-horsepower
Btu, million British Thermal Units
dscf, dry standard cubic feet
g, grams
gr, grains
HMA, hot mix asphalt
hr, hour
lbs, pounds
MM, million
PTE, Potential To Emit
PM, particulate matter
PM_{10}, particulate matter with an aerodynamic diameter of 10 microns or less
SO_2, sulfur dioxide
TPH, tons per hour
TPY, tons per year
VOC, volatile organic compounds

Rotary Drum Hot-Mix Asphalt Plant with Baghouse [SCC 3-05-002-55/SCC 3-05-002-63]

		Summer Season	Winter Season
Production Rate:	400 Tons/Hour (Maximum)	9600 Tons/Day	1600 Tons/Day

1989 CMI PTD-400 HMA Plant (Counter-Flow Drum Mixer)
Dryer fuel Configuration: Duel fuel - Waste Oil or Natural Gas
Maximum Rated Heat Input: 97 mmbtu/hr
Control Equipment: Standard Havens PB Air Pulse Baghouse
Power Plant: 1350 bhp Primary Diesel-Fired Generator Set (Asphalt Plant & Production Power Supply)
188 bhp Secondary Diesel-Fired Generator Set (Non-Production Power Supply)

Note: Asphalt Plant May Operate On Utility/commercial Power

Operating Schedule:

Summer Season: 24 Hours/Day (Maximum)
Winter Season: 4 Hours/Day (Restricted Maximum)

PM_{10} Emissions:

Emission Rate	0.033 lbs/ton Asphalt Product	[AP-42 Table 11.1-3, 3/04]	
Calculations	(0.033 lbs/ton) * (400 tons/hour) =		13.20 lbs/hr (controlled)
	(13.20 lbs/hr) * (24 hours/day) =		316.80 lbs/day (summer season)
	(316.80 lbs/hr) * (4 hours/day) =		52.80 lbs/day (winter season)

Gencor HYCGO100 Asphalt Heater [SCC 3-05-002-08 or SCC 3-05-002-06]

Fuel Type: Duel Fuel - Diesel or Natural Gas
Burner Firing Rate: 1.50 mmbtu/hr [Maximum Design]
Fuel Rate (Diesel) 10.9 gallons/hour [Estimated →19,300 Btu/lb]

PM_{10} Emissions (filterable):

Emission Factor	1.0 lbs/10^3 gallons	[AP-42 Table 1.3-6, 5/10 - diesel]	
Calculations	(1.0 lbs / 1,000 gal) * (10.947 gal/hr) =		0.01 lbs/hr (uncontrolled)
	(0.011 lbs/hr) * (24 hours/day) =		0.26 lbs/day (summer season)
	(0.011 lbs/hr) * (4 hours/day) =		0.04 lbs/day (winter season)

* *All PM condensable assumed < 1.0 micron in diameter*

Aggregate Handling & Load-in [SCC 30500216]

Process Rate: 400 tons/hour
Number of Piles: 2 pile Transfers [Initial Pile Load-In → Aggregate Load-Out to Feed Bin]

Particulate Emissions (controlled):

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

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

k, Dimensionless Particle Size Multiplier PM_{10} =	0.35	[AP-42 13.2.4, 11/06]
U, Mean Wind Speed (mph) =	9.3	[ASOS/AWOS AVE-MT 10 yr Ave.]
M, Material Moisture Content (%) =	2.1	[AP-42 13.2.4-1, 11/06]

PM_{10} Emissions:

Emission Factor	EF = 0.35 * (0.0032) * (7.0/5)^1.3 / (2.1 / 2)^1.4 =	0.0024 lbs/ton
Calculations	(0.0024 lbs/ton) * (400 tons/hr) * (2 pile) =	1.88 lbs/hr (uncontrolled)
	(1.88 lbs/hr) * (24 hours/day) =	45.19 lbs/day (summer season)
	(1.88 lbs/hr) * (4 hours/day) =	7.53 lbs/day (winter season)

Aggregate Screening & Conveyor Transfer [SCC 3-05-020-02 & 3-05-020-06]

Process Rate: 400 tons/hour
Number of Transfers: 2 Transfers

PM_{10} Emissions (controlled):

Emission Factor	0.00079 lbs/ton transferred	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00079 lbs/ton) * (400 tons/hr) * (2 Transfers) =		0.63 lbs/hr (controlled)
	(0.63 lbs/hr) * (24 hours/day) =		15.09 lbs/day (summer season)

(0.63 lbs/hr) * (4 hours/day) = 2.52 lbs/day (winter season)

Lime Silo Product transfer & Conveying [SCC 3-05-016-24]

Process Rate: 400 tons/hour

PM_{10} Emissions (controlled):

Emission Factor 0.000088 lbs/ton material transferred [AP-42 Table 11.17-4, 2/98]

Calculations (0.000088 lbs/ton) * (400 tons/hr) = 0.035 lbs/hr (controlled)
(0.04 lbs/hr) * (24 hours/day) = 0.84 lbs/day (summer season)
(0.04 lbs/hr) * (4 hours/day) = 0.14 lbs/day (winter season)

Asphalt Storage & Silo Filling [SCC 3-05-002-13]

Process Rate: 400 tons/hour

Particulate Emissions (uncontrolled):

Emission Factor $EF = 0.000332+0.00105(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]

where: EF, Emission Factor = lbs emitted / ton HMA produced
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

PM_{10} Emissions:

Emission Factor EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43) = 0.00059 lbs/ton HMA

Calculations (0.00059 lbs/ton) * (400 tons/hr) = 0.23 lbs/hr (uncontrolled)
(0.23 lbs/hr) * (24 hours/day) = 5.62 lbs/day (summer season)
(0.23 lbs/hr) * (4 hours/day) = 0.94 lbs/day (winter season)

Asphalt Plant Load-Out [SCC 3-05-002-14]

Process Rate: 400 tons/hour

Particulate Emissions (uncontrolled):

Emission Factor $EF = 0.000181+0.00141(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]

where: EF, Emission Factor = lbs emitted / ton HMA produced
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325ºF [Default value AP-42 Table 11.1-14, 3/04]

PM_{10} Emissions:

Emission Factor EF = 0.000181 + 0.00141 * (0.05) * *e* ((0.0251) * (325 + 460) - 20.43) = 0.00052 lbs/ton HMA

Calculations (0.00052 lbs/ton) * (400 tons/hr) = 0.21 lbs/hr (uncontrolled)
(0.21 lbs/hr) * (24 hours/day) = 5.01 lbs/day (summer season)
(0.21 lbs/hr) * (4 hours/day) = 0.84 lbs/day (winter season)

Diesel Generator Engines [SCC 2-02-001-02]

Primary Diesel-Fired Generator Set (Asphalt Plant & Production Power Supply)

Engine Rating: 1350 bhp [Design Maximum Output]
Fuel Input: 9.45 MMBtu/hr [BSFC →7,000 Btu/hp-hr]
69.0 gallons/hour [Estimated →19,300 Btu/lb]

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (1350 bhp) =		2.97 lbs/hr (uncontrolled)
	(2.97 lbs/hr) * (24 hours/day) =		71.28 lbs/day (summer season)
	(2.97 lbs/hr) * (4 hours/day) =		11.88 lbs/day (winter season)

Secondary Diesel-Fired Generator Set (Non-Production Power Supply)

Engine Rating:	188 bhp [Design Maximum Output]
Fuel Input:	1.32 MMBtu/hr [BSFC →7,000 Btu/hp-hr]
	9.6 gallons/hour [Estimated →19,300 Btu/lb]

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr	[AP-42 Table 3.3-1, 10/96]	
Calculations	(0.0022 lb/hp-hr) * (188 bhp) =		0.41 lbs/hr (uncontrolled)
	(0.41 lbs/hr) * (24 hours/day) =		9.93 lbs/day (summer season)
	(0.41 lbs/hr) * (4 hours/day) =		1.65 lbs/day (winter season)

Unpaved Roadways (Haul Roads) - Secondary Emissions

Miles Travelled [Estimate]:	5 miles/day (Summer Season)
	0.21 miles/hour
	0.83 miles/day (Winter Season)
Vehicle Weight:	27.5 Tons [Mean Vehicle Weight Empty/Full]
Control Method:	Water Application
Control Efficiency (C_e):	50%

PM_{10} Emissions:

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

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

k,	Empirical Constant PM_{10} =	1.5	[AP-42 Table 13.2.2-2, 11/06]
s,	Surface Material Silt Content (%) =	7.1	[AP-42 Table 13.2.2-1, 11/06]
W,	Mean Vehicle Weight (tons) =	27.5	[Applicant Provided Data]
a,	Empirical Constant $PM_{10}/PM_{2.5}$ =	0.9	[AP-42 Table 13.2.2-2, 11/06]
b,	Empirical Constant PM - $PM_{2.5}$ =	0.45	[AP-42 Table 13.2.2-2, 11/06]

Emission Factor	EF = 1.5 * (7.1/12)^0.9 * (27.5/3)^0.45 = 2.53 lbs/VMT	
Calculations	(2.53 lbs/VMT) * (5 miles/day) * (1 - 0.05 Ce) =	6.34 lbs/day (Summer Season)
	(2.53 lbs/VMT) * (5 miles/day) * (1 - Ce) * (hours/day) =	1.06 lbs/day (Winter Season)

V. Existing Air Quality

On July 1, 1987, the Environmental Protection Agency (EPA) promulgated new National Ambient Air Quality Standards (NAAQS) for particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}). Due to exceedance of the national standards for PM_{10}, the cities of Kalispell (and the nearby Evergreen area), Columbia Falls, Butte, Whitefish, Libby, Missoula, and Thompson Falls were designated by EPA as nonattainment for PM_{10}. As a result of this designation, the EPA required the Department and the City-County Health

Departments to submit PM_{10} State Implementation Plans (SIP). The SIPs consisted of emission control plans that controlled fugitive dust emissions from roads, parking lots, construction, and demolition, since technical studies identified these sources to be the major contributors to PM_{10} emissions.

MAQP #4865-00 and Addendum #1 are for a portable hot-mix asphalt plant that will potentially operate at sites in or within 10 km of certain PM_{10} nonattainment areas. The more stringent operating conditions contained in the addendum will minimize any potential impact on the nonattainment areas and will protect the national ambient air quality standards. Also, this facility is a portable source that would operate on an intermittent and temporary basis and any effects on air quality will be minor and short-lived.

VI. Air Quality Impacts

MAQP #4865-00 and Addendum #1 will cover the operations of this portable hot-mix asphalt plant while operating at any location within Montana, excluding those counties that have a Department approved permitting program.

Addendum #1 will cover the operations of this portable hot-mix asphalt plant, while operating in or within 10 km of any nonattainment area.

VII. Taking or Damaging Analysis

As required by 2-10-101 through 105, MCA, the Department conducted a private property taking and damaging assessment (see Section VIII of the Permit Analysis for MAQP #4865-00) and determined there are no taking or damaging implications.

VIII. Environmental Assessment

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

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

DRAFT ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Knife River Inc.

Montana Air Quality Permit number: 4865-00

Preliminary Determination Issued: 02/26/2013
Department Decision Issued:
Permit Final:

1. *Legal Description of Site*: Knife River, Inc. (Knife River) would operate a portable drum mix asphalt plant, which would initially be located in Section 6, Township 13 North, Range 19 West in Missoula County, Montana. However, Montana Air Quality Permit (MAQP) #4865-00 would apply while operating at any location in Montana, except those areas having a Department of Environmental Quality (Department)-approved permitting program, areas considered tribal lands. Addendum #1 to MAQP #4865-00 will apply when Knife River is operation within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) nonattainment areas.

2. *Description of Project*: Knife River would operate a portable drum mix asphalt plant and associated equipment with a 400 ton per hour (TPH) maximum production capacity and up to two diesel-fired generator sets with a combined capacity of up to 1,538 bhp at various locations throughout Montana.

3. *Objectives of Project*: The objective of this project would be to produce revenue for Knife River through the sale and use of asphalt. The issuance of the permit would allow Knife River to operate the permitted equipment at various locations throughout Montana, including the initial site location.

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

5. *A Listing of Mitigation, Stipulations, and Other Controls*: A list of enforceable conditions, including a BACT analysis, would be included in MAQP #4865-00.

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

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

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

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

A. Terrestrial and Aquatic Life and Habitats

Impacts on terrestrials and aquatic life could result from storm water runoff and pollutant deposition, but such impacts would be minor because the asphalt plant would be considered a minor source of emissions and would have intermittent and seasonal operations. Furthermore, the air emissions would have only minor effects on terrestrial and aquatic life because facility emissions would have good pollutant dispersion in the area of operations (see Section 7.F). Therefore, only minor and temporary effects to terrestrial and aquatic life and habitat would be expected from the proposed project.

B. Water Quality, Quantity and Distribution

Water would be required for dust suppression on the surrounding roadways and the area of operation. Typical application of water spray for dust suppression typically results in the water being evaporated to the atmosphere shortly after its application. Water's dust suppressing capacity is very temporary because of evaporation. Heavy applications of water can create soft mud or penetrate a road to the sub-base which can cause major road failure; therefore, heavy applications are typically not utilized. Consequently, several light applications are preferable to one heavy application. Pollutant deposition and water use would cause minor impacts to water resources because the facility is relatively small with seasonal and intermittent operations. The benefits of using water to control emissions outweigh the potential minor impacts to the surroundings.

C. Geology and Soil Quality, Stability and Moisture

The proposed project would have minor impacts on geology, soil quality, stability, and moisture of soils. Minor impacts from deposition of air pollutants on soils would result (as described in Section 7.F of this EA) and minor amounts of water would be used for pollution control and only as necessary in controlling particulate emissions. Thus, minimal water runoff

would occur. Since a small amount of pollution would be generated and corresponding emissions would be widely dispersed before settling upon vegetation and surrounding soils (as described in Section 7.D of this EA), impacts would be minor. Therefore, any effects upon geology and soil quality, stability, and moisture from air pollutant emissions from equipment and operation would be minor.

D. Vegetation Cover, Quantity, and Quality

The facility would be considered a minor source of emissions by industrial standards and would typically operate in areas previously designated and used for this type of operation. The overall footprint of the facility would be small, so the affect to quantity and quality of vegetative cover in the area would be minimal. There is occurrence reports of one plant species of concern (Missoula Phlox) within sections located near the proposed project section. However, the species occurrence locations are not within the proposed facility location which would be within an existing and previously disturbed gravel pit.

In addition, water use at the facility, soil disturbance from water application, and the associated runoff would also be minimal. Overall, impacts to vegetation from the project would be minor.

E. Aesthetics

MAQP #4865-00 and Addendum #1would include conditions to control emissions, including visible emissions, from the operation. The portable asphalt plant would be considered a minor industrial source.

For the proposed project, the facility would be initially located in an existing pit that is on private land that is permitted for use as an open cut operation. Approximately one acre of land would be disturbed as part of this proposed action. The operation of the proposed equipment would be visible and audible. There is a trailer court located approximately 450 feet to the northwest from the pit area boundary. Two lumber mills are located adjacent to the site as well. Any disturbance to the aesthetic value of the area would be minor because of its location within an existing pre-disturbed industrial site.

F. Air Quality

Air quality impacts from the proposed project would be minor because the facility would be relatively small and comparable in nature to other similar sources permitted by the Department. MAQP #4865-00 and Addendum #1 would include conditions limiting the facility's opacity and particulate matter emissions. The permit would also limit total emissions from the portable asphalt plant and any additional equipment operated at the site to 250 tons per year or less of any individual pollutant, excluding fugitive emissions.

Further, the Department determined that the portable asphalt plant would be a minor source of emissions as defined under the Title V Operating Permit Program because the source's potential emissions are below the major source threshold level of 100 tons per year for any regulated pollutant due to federally enforceable permit conditions which limit the total annual hours of operation and annual asphalt production. Pollutant deposition from the project would be minimal because the emissions would be well controlled, widely dispersed (from factors such as wind speed and wind direction), and would have minimal deposition on the surrounding area. Therefore, air quality impacts from the project in this area would be minor. The applicant has indicated that the source would operate on an intermittent and seasonal basis; therefore, actual emissions may be lower than accounted for in the potential emissions calculations.

G. Unique Endangered, Fragile, or Limited Environmental Resources

In an effort to assess any potential impacts to any unique endangered, fragile, or limited environmental resources in the proposed initial area of operation (Section 6, Township 13 North, Range 19 West in Missoula County, Montana), the Department contacted the Montana Natural Heritage Program (MNHP). Search results concluded there are 10 known species of concern located within three miles of the facility. The search area, in this case, is defined by the township and range of the proposed site, with an additional one-mile buffer. Animal species of concern include the Great Blue Heron, Bald Eagle, Fringed Myotis, Hoary Bat, Cassin's Finch, Western Skink, Westslope Cutthroat Trout Bull Trout, Subterranean Amphipod, and plant species of Missoula Phlox. The proposed facility location will likely be existing industrial site that are already disturbed from previous gravel pit activities and or other industrial activity; therefore, there are no anticipated impacts to any unique endangered, fragile, or limited environmental resources. In addition, this source would be considered a minor source of emissions with intermittent and seasonal operations.

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

The portable asphalt plant would provide its own energy for operation from the portable diesel generator engines. Water would be required for control of fugitive particulate matter emissions in the plant area and surrounding roads. Impacts to air resources would be minimal because the source would be considered a minor industrial source of emissions, with intermittent and seasonal operations. Because air pollutants generated by the plant would be widely dispersed (see Section 8.F of this EA), energy requirements would be provided by portable generators, and water use would be minimal, any impacts to water, air, and energy resources would be minor.

I. Historical and Archaeological Sites

The Department contacted the Montana Historical Society - State Historical Preservation Office (SHPO) in an effort to identify any historical and archaeological sites that may be present in the proposed area of operation. Search results concluded that there has been no previously recorded historical or archaeological site within the section proposed for initial operation, and several previously conducted cultural resource inventories done in the area. According to correspondence from the SHPO, there would be a low likelihood of adverse disturbance to any known archaeological or historic site given previous industrial disturbance to the area and that a cultural resource inventory is unwarranted at this time. Therefore, no impacts to historical or archaeological sites would be expected as a result of operating the asphalt plant at the proposed location because it would occur within an existing open cut pit in an industrial area. However, if cultural materials are discovered during this project the Montana Historical Society should be contacted.

J. Cumulative and Secondary Impacts

Operation of the portable asphalt plant would cause minor cumulative and secondary impacts to the physical and biological aspects of the human environment because it would be located at an existing gravel pit and would be limited in the amount of air emissions generated. Emissions and noise generated from the equipment would, at most, result in only minor impacts to the area of operation because it would be seasonal and temporary in nature. Additionally, this facility, in combination with other emissions from equipment operations would not be permitted to exceed 250 tons per year of non-fugitive emissions of an individual pollutant. Overall, cumulative and secondary impacts to the physical and biological aspects of the human environment would be minor.

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

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

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

A. Social Structures and Mores

The portable asphalt plant would cause no disruption to the social structures and mores of the area because the source would be considered a minor industrial source and emissions and would have temporary and intermittent operations. The proposed initial location is within an existing industrial site with no existing social structures or mores.

B. Cultural Uniqueness and Diversity

The cultural uniqueness and diversity of this area would not be impacted by the operation of the portable asphalt plant because the facility would be a portable source, with seasonal and intermittent operations. The predominant use of this area would not change as a result of the proposed operation. Therefore, the cultural uniqueness and diversity of the area would not be impacted.

C. Local and State Tax Base and Tax Revenue

Only minor impacts to the local and state tax base and revenue could be expected from the employees and facility production. Because the facility would be portable and temporary, it is unlikely that people would move to the area as a result of this project. Impacts to local tax base and revenue would be minor and short-term because the source would be portable and the money generated for taxes would be widespread.

D. Agricultural or Industrial Production

The proposed project would have a minor impact on local industrial production since the facility would increase local asphalt production and air emissions slightly. The facility would be located in an existing gravel pit on private land. Because minimal deposition of air pollutants would occur on the surrounding land (as described above in Section 7.F), only minor effects on the surrounding vegetation or agricultural production would occur. In addition, the

facility operations would be small and temporary in nature and would be permitted with operational conditions and limitations that would minimize impacts upon surrounding vegetation, as described in Section 7.D above. Pollutant deposition from the project would be minimal because the emissions would be well controlled, widely dispersed (from factors such as wind speed and wind direction), and would have minimal deposition on the surrounding area.

E. Human Health

Conditions would be incorporated into MAQP #4865-00 and Addendum #1to ensure that the asphalt plant would operate in compliance with all applicable air quality rules and standards. These rules and standards are designed to be protective of human health. As described in Section 7.F of this EA, the air emissions from this project would be minimized by the use of a fabric filter pollution control device for the drum dryer and mineral filler storage emissions, water spray for fugitive emissions, and other process limits that would be required by MAQP #4865-00 and Addendum #1. Furthermore, the applicant has stated that they plan to operate on an intermittent and seasonal basis and therefore only minor impacts would be expected on human health from the proposed facility.

F. Access to and Quality of Recreational and Wilderness Activities

Access to recreational opportunities would not be limited or modified by this facility. The equipment would be located within an existing industrial site that has been established for similar use. All recreational opportunities, if available in the area, would still be accessible. Noise from the facility would be minimal to surroundings because of the facility size, expected hours of operation, and rural location. The applicant has stated that the facility would operate on a seasonal and intermittent basis. The pit is on private land and the Department has determined that the project would be a minor industrial source of emissions. Therefore, any changes in the quality of recreational and wilderness activities created by operating the equipment at this site are expected to be minor.

G. Quantity and Distribution of Employment

The portable asphalt plant would be relatively small. Knife River has stated that they plan to operate the plant with three employees and approximately 15 truck drivers. Because the operation would be seasonal, no individuals would be expected to permanently relocate as a result of operating the portable asphalt plant. Therefore, there would be minor affects on the quantity and distribution of employment in this area.

H. Distribution of Population

The proposed project would be considered a portable industrial facility and would require few employees to operate. No individuals would be expected to permanently relocate to this area. Therefore, the operation would not impact the normal population distribution in the initial area of operation or any future operating site.

I. Demands for Government Services

The operation of the portable asphalt plant would cause minimal demand for government services. This project would result in an increase in traffic on existing roadways. Government services would be required for acquiring the appropriate permits for the proposed project and to verify compliance with the permits that would be issued. However, any increase or demand for government services would be minor given the temporary and portable nature of the project.

J. Industrial and Commercial Activity

The proposed project would represent only a minor increase in the industrial activity in the proposed area of operation because the facility would be a small industrial source, portable and temporary in nature. Some additional industrial or commercial activity would be expected as a result of the proposed operation; however, these impacts to the industrial and commercial activity would be minor.

K. Locally Adopted Environmental Plans and Goals

The Department is unaware of any locally adopted environmental plans and goals in the proposed initial project location. MAQP #4865-00 and Addendum #1 contains conditions and limits for protecting air quality and to keep facility emissions in compliance with any applicable ambient air quality standards. Because the facility would have intermittent and seasonal operations any impacts from the facility would be minor and short-lived.

L. Cumulative and Secondary Impacts

Overall, the proposed project would cause minor cumulative and secondary impacts to the social and economic aspects of the human environment in the immediate area of operation because the source would be portable and the footprint of the facility would remain relatively small. Furthermore, no other industrial operations are expected to result from this permitting action. Any increase in traffic would have minor effects on local traffic in the immediate area.

This facility may be operated in conjunction with other equipment owned and operated by Knife River, but any cumulative impacts or secondary impacts are expected to be minor and short-term. In conclusion, the source is relatively small, the facility emissions would be minimal, and the project would have only minor cumulative and secondary impacts.

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

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permitting action is for the construction and operation of portable asphalt plant. MAQP #4865-00 and Addendum #1 includes conditions and limitations to ensure the facility will operate in compliance with all applicable rules and regulations. In addition, there are no significant impacts associated with this proposal.

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

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

EA prepared by: D. Kuenzli
Date: February 20, 2013