Montana Department of
ENVIRONMENTAL QUALITY
Brian Schweitzer, Governor
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September 14, 2012

Mr. Bob Berland
Knife River Corporation
PO Box 147
Kalispell, MT 59903

Dear Mr. Berland:

Montana Air Quality Permit #2996-07 is deemed final as of September 14, 2012, by the Department of Environmental Quality (Department). This permit is for a portable drum mix asphalt plant. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

Chuck Homer
Manager, Air Permitting, Compliance and Registration
Air Resources Management Bureau
(406) 444-9741

Shawn Juers
Environmental Engineer
Air Resources Management Bureau
(406) 444-2049

VW:SJ
Enclosure

Montana Department of Environmental Quality
Permitting and Compliance Division

Montana Air Quality Permit #2996-07

Knife River Corporation
PO Box 147
Kalispell, MT 59903

September 14, 2012

MONTANA AIR QUALITY PERMIT

Issued To: Knife River Corporation
PO Box 147
Kalispell, MT 59903

MAQP #2996-07
Administrative Amendment (AA)
Request Received: 08/22/2012
Department Decision on AA: 08/29/2012
Permit Final: 09/14/2012
AFS #777-2996

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Knife River Corporation (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:

Section I: Permitted Facilities

A. Plant Location

Knife River operates a portable drum mix asphalt plant at various locations throughout Montana. The legal description for the initial location of the Knife River facility is the NE¼, SW¼ of Section 23, Township 30 North, Range 21 West, in Flathead County, Montana. The home pit of the Knife River facility is located in Section 22, Township 29 North, Range 21 West, in Flathead County, Montana. However, MAQP #2996-07 applies while operating at any location in Montana, except those areas having a Department of Environmental Quality (Department)-approved permitting program and areas considered tribal lands. An addendum containing more stringent standards supplements permit conditions for areas in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) nonattainment areas. An addendum is included in this permit. *A Missoula County air quality permit will be required for locations within Missoula County, Montana*.

Addendum 8 and MAQP #2996-07 apply to the Knife River facility while operating at specific locations in or within 10 km of certain PM_{10} nonattainment areas during the winter months (October *through* March), as approved by the Department, and at any location in or within 10 km of certain PM_{10} nonattainment areas during the summer months (April *through* September). A complete list of the permitted equipment is included in Section I.A. of the permit analysis.

B. Current Permit Action

On August 22, 2012, the Department received a letter from Knife River requesting changes to the current Addendum. More hours of operation (10 hours per day) and a smaller horsepower engine (1,072 versus 1,167 horsepower) was requested for winter operations in PM_{10} nonattainment areas. The horsepower rating requested for wintertime operation is the horsepower rating as provided by manufacturer specification for the engine already owned by Knife River.

This action updates the Addendum to reflect the changes requested, and maintains emissions below 82 pound per day of PM_{10} during the winter months. The action also corrects an error in the emissions inventory of the permit, correcting PM_{10} emissions from the asphalt plant baghouse to be 50% of PM emissions, in line with Department Guidance.

Section II: Limitations and Conditions

A. Emission Limitations

1. Asphalt plant particulate matter emissions shall be limited to 0.04 grains per dry standard cubic feet (gr/dscf) (ARM 17.8.340, ARM 17.8.752, and the Code of Federal Regulations Title 40 Part 60, (40 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 an opacity of 20% opacity or greater averaged over 6 consecutive minutes (ARM 17.8.340, ARM 17.8.752, 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 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart I).

4. Knife River shall not cause or authorize to be discharged into the atmosphere, from any non- New Source Performance Standard (NSPS) affected equipment, any visible emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).

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

6. 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 and ARM 17.8.752).

7. Knife River shall treat all unpaved portions of the haul roads, access roads, parking lots, or the general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.6 (ARM 17.8.752).

8. Knife River must install, operate, and maintain a baghouse for air pollution control on the drum mix asphalt plant. Knife River must install, operate and maintain a device to measure the pressure drop (magnehelic gauge, manometer, etc.) across the control device. Pressure drop must be measured in inches of water. Knife River must also install, operate, and maintain temperature indicators at the control device inlet and outlet (ARM 17.8.749).

9. Total asphalt plant production shall be limited to 1,058,400 tons during any rolling 12-month time period (ARM 17.8.749 and ARM 17.8.1204).

10. Operation of the portable drum mix asphalt plant (including the diesel engine-powered generator and associated equipment) shall not exceed 2,646 hours during any rolling 12-month time period (ARM 17.8.749 and ARM 17.8.1204).

11. Knife River shall not operate or have on site more than one diesel engine-powered generator at any given time and the maximum rated design capacity shall not exceed 1167 horsepower (hp) (ARM 17.8.749).

12. 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 during any rolling 12-month period. Any calculations used to establish production levels shall be approved by the Department (ARM 17.8.749).

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

14. Knife River shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* and 40 CFR 63, Subpart ZZZZ, *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* for any applicable diesel engine (ARM 17.8.340, 40 CFR 60, Subpart IIII, ARM 17.8.342, and 40 CFR 63, Subpart ZZZZ).

B. Testing Requirements

Because asphalt production will be limited to the average production rate achieved during the initial and subsequent compliance source test(s), the test should be performed at the highest production rate practical. Knife River may retest at any time in order to test at a higher production rate (ARM 17.8.105 and ARM 17.8.749).

1. Within 60 days after achieving maximum production rate, but no later than 180 days after initial start up, an Environmental Protection Agency (EPA) Methods 1-5 and 9 opacity test(s) shall be performed on any New Source performance Standard (NSPS)-affected equipment at the asphalt plant to demonstrate compliance with the applicable emission limit(s) in Sections II.A.1, II.A.2, and II.A.3, respectively (ARM 17.8.340 and 40 CFR 60, Subpart A and Subpart I). NSPS-affected equipment at the Knife River facility would include any combination of the following: dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler; systems for mixing hot mix asphalt; and the loading, transfer and storage systems associated with emission control systems, which were constructed, reconstructed, or modified after June 11, 1973. After the initial source test, testing shall continue on an every 4-year basis or according to another testing/monitoring schedule as may be approved by the Department in writing (ARM 17.8.105, ARM 17.8.749, and 40 CFR 60, Subpart A and Subpart I).

2. Pressure drop on the baghouse control device and process temperature must be recorded daily and kept on site according to Sections II.A.8 and II.C.2 (ARM 17.8.749).

3. Pressure drop on the baghouse control device and process temperatures (II.A.8) must be recorded during the compliance source test and reported as part of the test results (ARM 17.8.749).

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

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

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

C. Operational Reporting Requirements

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

2. Knife River shall maintain on-site records showing daily hours of operation, daily production rates, and daily baghouse pressure drop and temperature readings 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, must be submitted to the Department upon request, and must 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, based on actual emissions from the facility, 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(1)(d) (ARM 17.8.745).

5. Knife River shall document, by month, the asphalt production from the facility. By the 25th day of each month, Knife River shall calculate the asphalt production from the facility for the previous month. The monthly information will be used to demonstrate compliance with the rolling 12-month limitation in Section II.A.9. 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 portable drum mix asphalt facility. By the 25th day of each month, Knife River shall calculate the hours of operation for the portable drum mix asphalt facility for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.10. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

7. 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 NSPS-affected equipment, Knife River shall notify the Department of the date of commencement of construction of the affected equipment. NSPS-affected equipment at the Knife River facility would include any combination of the following: dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler; systems for mixing hot mix asphalt; and the loading, transfer and storage systems associated with emission control systems, which were constructed, reconstructed, or modified after June 11, 1973 (ARM 17.8.340 and 40 CFR 60, Subpart A and Subpart I).

2. Within 15 days of the actual startup date of any NSPS-affected equipment, Knife River shall submit written notification to the Department of the initial startup date of the affected equipment. NSPS-affected equipment at the Knife River facility would include any combination of the following: dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler; systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems, which were constructed, reconstructed, or modified after June 11, 1973 (ARM 17.8.340 and 40 CFR 60, Subpart A and Subpart I).

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

E. Addendum

Knife River shall comply with all conditions in MAQP #2996-07 and Addendum 8 when operating in or within 10 km of certain PM_{10} nonattainment areas as described in the Addendum (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 such as continuous emission monitoring systems (CEMS) or continuous emission rate monitoring systems (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 Operation Fees – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, 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 Corporation
MAQP #2996-07

I. Introduction

A. Permitted Equipment

Knife River Corporation (Knife River) operates a portable Asphalt Plant (maximum capacity 400 tons per hour (TPH)) with a baghouse, a 1,167 horsepower (hp) generator engine, and associated equipment.

B. Source Description

A typical operation for the drum mix asphalt plant begins by loading gravel into the feed bin. The gravel is then conveyed to the asphalt plant drum. The gravel is mixed with hot oil in the asphalt plant to create asphalt. Hot asphalt then exits the plant and is transported to the current project site.

C. Permit History

On March 2, 1998, A-1 Paving submitted a complete permit application to operate a portable 1998 CMI Drum Mix Asphalt Plant (maximum capacity 500 TPH) with a baghouse; a 1990 Cummins 600 kW diesel generator; and associated equipment. In addition, A-1 Paving also requested an addendum to operate in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) nonattainment areas through September 30, 1998. The application was assigned **MAQP #2996-00** and **Addendum 1** was established. The facility was originally located in the NE¼, of the SW¼ of Section 23, Township 30 North, Range 21 West in Flathead County, Montana.

On November 10, 1999, A-1 Paving was issued a permit modification to allow for summer operation (April 1, 2000, through September 30, 2000) in or within 10 km of the following PM_{10} nonattainment areas: Libby, Kalispell, Columbia Falls, Butte, Whitefish, and Thompson Falls. **MAQP #2996-01** replaced MAQP #2996-00 and **Addendum 2** replaced Addendum 1.

On August 10, 2001, A-1 Paving was issued MAQP #2996-02. This permit allowed the facility to operate in or within 10 km of certain PM_{10} nonattainment areas during the summer months (April 1, 2001 through September 30, 2001). The permit was also updated to reflect the current format used in writing permits. **MAQP #2996-02** replaced MAQP #2996-01 and **Addendum 3** replaced Addendum 2.

On January 16, 2004, JTL Group Inc. (JTL) submitted a request for an administrative amendment to MAQP #2996-03 to change the name from A-1 Paving to JTL. Subsequently, on February 11, 2004, JTL requested that Addendum 3 (which expired on September 30, 2001) be renewed for summertime operations in or within 10 km of certain PM_{10} nonattainment areas. In addition, the current permit language and rule references used by the Department of Environmental Quality (Department) were added to the permit. **MAQP #2996-03** replaced MAQP #2996-02 and **Addendum 4** replaced Addendum 3.

On March 1, 2006, the Department received a request from JTL for an administrative amendment to MAQP #2996-03 to allow for wintertime (October 1 *through* March 31) and summertime operations (April 1 *through* September 30) in or within 10 km of the Kalispell PM_{10} nonattainment area. JTL also notified the Department that the process rate for the asphalt plant and the size of the generator were incorrect and the current permit action will update the information to reflect current facility operations. The production rate limitation for the asphalt plant was not based on the 400 TPH maximum design capacity and was not changed from what was provided in MAQP #2996-03. However, the asphalt plant production rate limitations in Addendum 5 were based on the 400 TPH maximum design capacity. **MAQP #2996-04** replaced MAQP #2996-03 and **Addendum 5** replaced Addendum 4.

On January 24, 2008, the Department received a request from Knife River to change the name on MAQP #2996-04 from JTL to Knife River. The permit action transferred ownership of MAQP #2996-04 from JTL to Knife River and updated the permit to reflect current rule references, permit language, permit format, and emission factors. In addition, Knife River requested that the permit be written in a de minimis-friendly manner. **MAQP #2996-05** replaced MAQP # 2996-04 and **Addendum 6** replaced Addendum 5.

On January 25, 2011, the Department received a request from Knife River to amend Addendum #6 to allow more operating hours of the asphalt plant in the summer months when located in PM_{10} nonattainment areas. MAQP #2996-05 and Addendum 6 limited the daily asphalt production to 2,900 tons per day during the summer season, calculated based on the annual hourly limit (2,646 hours/year) established to keep annual NOx and CO emissions below the modeling thresholds. The daily emissions calculations indicate that a production limit on the asphalt plant is not necessary to keep PM_{10} emissions below the modeling threshold of 547 pounds/day. The permit action was an Administrative Amendment (AA) that removed the asphalt plant summer-season production limit in the Addendum and updated the permit to reflect the current rule references, permit language, permit format, and emission factors. **MAQP #2996-06** replaced MAQP # 2996-05 and **Addendum 7** replaced Addendum 6.

D. Current Permit Action

On August 22, 2012, the Department received a letter from Knife River requesting changes to the current Addendum. More hours of operation (10 hours per day) and a smaller horsepower engine (1,072 versus 1,167 horsepower) was requested for winter operations in PM_{10} nonattainment areas. The horsepower rating requested for wintertime operation is the horsepower rating as provided by manufacturer specification for the engine already owned by Knife River.

This action updates the Addendum to reflect the changes requested, and maintains emissions below 82 pound per day of PM_{10} during the winter months. The action also corrects an error in the emissions inventory of the permit, correcting PM_{10} emissions from the asphalt plant baghouse to be 50% of PM emissions, in line with Department Guidance **MAQP #2996-07** replaces MAQP # 2996-06 and **Addendum 8** replaces Addendum 7.

E. Additional Information

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

II. Applicable Rules and Regulations

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

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

1. ARM 17.8.101 Definitions. This rule 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
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide

7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}
11. ARM 17.8.230 Fluoride in Forage

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 be 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 rule.

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, the Code of Federal Regulations Title 40 Part 60, (40 CFR 60), Standards of Performance for New Stationary Sources (NSPS). Knife River is considered an NSPS affected facility under 40 CFR Part 60 and is subject to the requirements of the following subparts.

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

   b. 40 CFR 60, Subpart I – Standards of Performance for Hot Mix Asphalt Facilities This facility is an NSPS-affected facility under 40 CFR 60, Subpart I (Standards of Performance for Hot Mix Asphalt Facilities), because the facility includes NSPS-affected equipment. NSPS-affected

equipment at the Knife River facility would include any combination of the following: dryers; systems for screening, handling, storing, and weighing aggregate; systems for loading, transfer, and storage systems associated with emission control systems, which were constructed, reconstructed, or modified after June 11, 1973.

c. 40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition (CI) Internal Combustion Engines (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. Since this permit is written in a de minimis friendly manner, this regulation may apply to engines in the future.

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. This source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR Part 63, as listed below.

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

b. 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants (HAPs) for Stationary Reciprocating Internal Combustion Engines (RICE). An owner or operator of a stationary reciprocating internal combustion engine (RICE) at a major or area source of HAP emissions is subject to this rule except if the stationary RICE is being tested at a stationary RICE test cell/stand. An area source of HAP emissions is a source that is not a major source. As an area source, the diesel RICE will be subject to this rule. However, although diesel RICE engines are an affected source, per 40 CFR 63.5490(b)(3) they do not have any requirements unless they are new or reconstructed after June 12, 2006. Since the permit is written in a de minimis friendly manner, area source provisions of the Maximum Available Control Technology (MACT) requirements may apply to future engines.

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

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

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

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

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

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

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

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

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

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

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

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

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

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving 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 17.8.760 Additional Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.

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

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

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

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

16. ARM 17.8.770 Additional Requirements for Incinerators. This rule specifies the additional information that must be submitted to the Department for incineration facilities subject to 75-2-215, MCA.

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 tons/year of any criteria pollutant.

b. PTE > 10 tons/year of any one hazardous air pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

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

2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #2996-06 for Knife River, the following conclusions were made:

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

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

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

d. This facility is potentially subject to area source provisions of a current NESHAP standard (40 CFR 63, subpart ZZZZ).

e. The facility is currently subject to NSPS standards **(**40 CFR 60, Subpart I and potentially subject to 40 CFR 60, Subpart IIII).

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 requirements to obtain an air quality operating permit by establishing federally enforceable limitations which limit that source's PTE:

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

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

3. ARM 17.8.1207 Certification of Truth, Accuracy, and Completeness. The compliance certification submittal required 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 BACT determination was not required for the current permit action because the permit change is considered an administrative permit change.

IV. Emission Inventory

Source	Tons/yr					
	PM	PM_{10}	NO_x	VOC	CO	SO_x
Asphalt Plant w/Baghouse (up to 400 TPH)	10.44	5.22	29.11	16.93	68.80	30.69
Elevators, Screens, Bins, and Mixer	1.91	1.16	-	-	-	-
Cold Aggregate Handling	0.07	0.02	-	-	-	-
Haul Roads	5.48	2.46	-	-	-	-
Diesel Generator (1167 hp)	3.40	3.40	47.86	3.81	10.31	3.17
Total	21.30	12.26	76.97	20.74	79.11	33.86

Note:
Knife River is limited to 2,646 hrs/yr for this facility. Knife River has limitations on asphalt production and diesel generator operation to maintain emissions below major source thresholds.

acfm = actual cubic feet per minute
CO = carbon monoxide
dscfm = dry standard cubic feet per minute
gr = grain
hp = horsepower
hr = hour
in. Hg = inches mercury
lb = pound
min = minute
NO_X = oxides of nitrogen
P = Pressure
PM = particulate matter
PM_{10} = particulate matter with an aerodynamic diameter of 10 microns or less
$PM_{2.5}$ = particulate matter with an aerodynamic diameter of 2.5 microns or less
SO_X = oxides of sulfur
T = Temperature
TPH = ton per hour
V = Volume
VOC = volatile organic compounds
VMT = vehicle miles traveled
yr = year
°F = degrees Fahrenheit
°R = degrees Rankine

Drum Mix Asphalt Plant Dryer

Operating Parameters

Operating Hours:	2646 hr/yr (Permit Limit)
Process Rate:	400 TPH (Maximum Design)
Plant Elevation:	3000 ft
Actual Pressure:	26.82 in. Hg
Standard Pressure:	29.92 in. Hg
Flowrate:	39400 acfm
Standard Temperature:	68^0F = 528^0R
Stack Temperature:	350^0F = 810^0R
Correction Equation:	V1 = V2 (P2/P1)(T1/T2)

Corrected Flowrate: 39400 acfm * (26.82 in. Hg/29.92 in. Hg) * (528^0R/810^0R) = 23022 dscfm

PM Emissions

Emission Factor: 0.04 gr/dscf (BACT Determination)

Calculations:

0.04 gr/dscf * 23022 dscfm * 1 lb/7000 gr * 60 min/hr * 2646 hrs/yr * 0.0005 ton/lb = 10.44 ton/yr

PM_{10} Emissions

50% of PM emissions based on Department Guidance.

NO_x Emissions

Emission Factor: 0.055 lb/ton (AP-42, Section 11.1, Table 11.1-7, Drum Mix, worst-case fuel, 03/04)

Calculations: 0.055 lb/ton * 400 TPH * 2646 hr/yr * 0.0005 ton/lb = 29.11 ton/yr

VOC Emissions

Emission Factor: 0.032 lb/ton (AP-42, Section 11.1, Table 11.1-8, Drum Mix, worst-case fuel, 03/04)

Calculations: 0.032 lb/ton * 400 TPH * 2646 hr/yr * 0.0005 ton/lb = 16.93 ton/yr

CO Emissions

Emission Factor: 0.13 lb/ton (AP-42, Section 11.1, Table 11.1-7, Drum Mix, worst-case fuel, 03/04)

Calculations: 0.13 lb/ton * 400 TPH * 2646 hr/yr * 0.0005 ton/lb = 68.80 ton/yr

SO_x Emissions

Emission Factor: 0.058 lb/ton (AP-42, Section 11.1, Table 11.1-7, Drum Mix, worst-case fuel, 03/04)

Calculations: 0.058 * 400 TPH * 2646 hr/yr * 0.0005 ton/lb = 30.69 ton/yr

Elevators, Screens, Bins, and Mixer

Operating Parameters

Operating Hours: 2646 hrs/yr (Permit Limit)
Process Rate: 400 TPH (Maximum Design)

PM Emissions

Emission Factor: 0.0036 lb/ton (AP-42, Section 11.19, Table 11.19.2-2, controlled, 08/04)
Calculations: 0.0036 * 400 TPH * 2646 hrs/yr * 0.0005 ton/lb = 1.91 ton/yr

PM_{10} Emissions

Emission Factor: 0.0022 lb/ton (AP-42, Section 11.19, Table 11.19.2-2, controlled, 08/04)
Calculations: 0.0022 lb/ton * 400 TPH * 2646 hrs/yr * 0.0005 ton/lb = 1.16 ton/yr

Cold Aggregate Handling

Operating Parameters

Operating Hours: 2646 hrs/yr (Permit Limit)
Process Rate: 400 TPH (Maximum Design)

PM Emissions

Emission Factor: 0.00014 lb/ton (AP-42, Section 11.19, Table 11.19.2-2, controlled, 08/04)
Calculations: 0.00014 lb/ton * 400 TPH * 2646 hrs/yr * 0.0005 ton/lb = 0.07 ton/yr

PM_{10} Emissions

Emission Factor: 0.000046 lb/ton (AP-42, Section 11.19, Table 11.19.2-2, controlled, 08/04)
Calculations: 0.000046 lb/ton * 400 TPH * 2646 hrs/yr * 0.0005 ton/lb = 0.02 ton/yr

Diesel Generator

Operating Parameters

Operating Hours: 2646 hrs/yr (Permit Limit)
Engine Size: 1167 hp (Permit Limit)

PM Emissions

Emission Factor: 0.0022 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel, 10/96)
Calculations: 0.0022 lb/hp-hr * 1167 hp * 2646 hrs/yr * 0.0005 ton/lb = 3.40 ton/yr

PM_{10} Emissions

Emission Factor: 0.0022 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel, 10/96)
Calculations: 0.0022 lb/hp-hr * 1167 hp * 2646 hrs/yr * 0.0005 ton/lb = 3.40 ton/yr

NO_x Emissions

Emission Factor: 0.031 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel, 10/96)
Calculations: 0.031 lb/hp-hr * 1167 hp * 2646 hrs/yr * 0.0005 ton/lb = 47.86 ton/yr

VOC Emissions

Emission Factor: 0.00247 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, 10/96)
Calculations: 0.00247 lb/hp-hr * 1167 hp * 2646 hrs/yr * 0.0005 ton/lb = 3.81 ton/yr

CO Emissions

Emission Factor: 0.00668 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, 10/96)
Calculations: 0.00668 lb/hp-hr * 1167 hp * 2646 hrs/yr * 0.0005 ton/lb = 10.31 ton/yr

SO_x Emissions

Emission Factor: 0.00205 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, 10/96)
Calculations: 0.00205 lb/hp-hr * 1167 hp * 2646 hrs/yr * 0.0005 ton/lb = 3.17 ton/yr

Haul Roads

Operating Parameters

Vehicle Miles Traveled:	5 VMT/day
Days per year:	365 days/yr

PM Emissions

Emission Factor: 6.0 lb/VMT (DEQ Policy Statement – Haul Road Emission Factors, 4/25/94)
Calculations: 6.0 lb/VMT * 5 VMT/day * 365 days/yr * 0.0005 ton/lb = 5.48 ton/yr

PM_{10} Emissions

Emission Factor: 2.7 lb/VMT (DEQ Policy Statement – Haul Road Emission Factors, 4/25/94)
Calculations: 2.7 lb/VMT * 5 VMT/day * 365 days/yr * 0.0005 ton/lb = 2.46 ton/yr

V. Existing Air Quality Impacts

On July 1, 1987, the Environmental Protection Agency (EPA) promulgated new National Ambient Air Quality Standards (NAAQS) for PM_{10}. Due to exceedances of the national standards for PM_{10}, the cities of Kalispell (and the nearby Evergreen area), Columbia Falls, Butte, Whitefish, Libby, Missoula, and Thompson Falls were designated by EPA as nonattainment for PM_{10}. As a result of this designation, the EPA required the Department and the City-County Health Departments to submit PM_{10} State Implementation Plans (SIP). The SIPs consisted of emission control plans that controlled fugitive dust emissions from roads, parking lots, construction, and demolition, since technical studies identified these sources to be the major contributors to PM_{10} emissions.

MAQP #2996-07 and Addendum 8 are for a portable drum mix asphalt plant that proposes to originally locate 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. Ambient Air Quality Impacts

The current permit action is an administrative action, lowering the allowable horsepower of the generator engine. Although the action is allowing for an increase in allowable operating hours as a result, the Addendum maintains emissions below the Department's 82 lb/day threshold for wintertime operation of portable sources. Minor, if any, actual impacts to ambient air quality as a result of this action would be expected.

VII. Ambient Air Impact Analysis

The current permit action is for an existing source. Based on conservative generator engine emissions factors, maintaining emissions below 82 lb/day of PM in the addendum, with no additional changes in conditions outside of the wintertime addendum conditions, the Department expects minor impacts to ambient air quality. Further, the wintertime Permit and Addendum conditions would continue to require that the source operate on a temporary and intermittent basis.

VIII. Taking or Damaging Implication Analysis

As required by 2-10-101 through 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 pubic generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

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

IX. Environmental Assessment

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

Analysis Prepared By: Shawn Juers
Date: August 23, 2012

Addendum 8
Knife River Corporation
Montana Air Quality Permit (MAQP) #2996-07

An addendum to MAQP #2996-07 is hereby granted to Knife River Corporation (Knife River) pursuant to Section 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.765, as amended, for the following:

I. Permitted Equipment:

Knife River owns and operates a portable 400 ton per hour (TPH) drum-mix asphalt plant. For wintertime operations in areas designated as non-attainment for particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}), the maximum capacity of the generator engine to be used is 1,072 brake horsepower (bhp).

II. Seasonal and Site Restrictions – Winter and Summer Seasons

Addendum 8 applies to the Knife River facility while operating at any location in or within 10 kilometers (km) of certain PM_{10} nonattainment areas. Additionally, seasonal and site restrictions apply to the facility as follows:

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

1. NW¼ of the NW¼ of Section 22, Township 29 North, Range 21 West, Flathead County.

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

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

C. Knife River shall comply with the limitations and conditions contained in MAQP #2996-07 in conjunction with the more stringent conditions noted in Addendum 8 while operating in or within 10 km of any of the previously identified PM_{10} nonattainment areas. Addendum 8 shall be valid until revoked or modified. The Department reserves the authority to modify the Addendum at any time based on local conditions of any site. These conditions may include, but are not limited to, local terrain, meteorological conditions, proximity to residences or other businesses, etc.

III. Limitations and Conditions

A. Operational Limitations and Conditions – Summer Season Conditions

1. Knife River shall not cause or authorize to be discharged into the atmosphere from any equipment, including 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).

2. Asphalt plant production shall be limited to the average production rate during the last source test demonstrating compliance.

3. Knife River shall not cause or authorize to be discharged into the atmosphere from haul roads, access roads, parking lots, or the general plant property any visible fugitive emissions that exhibit an opacity of 10% or greater (ARM 17.8.749).

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

B. Operation Limitations and Conditions – Winter Season Conditions

1. All asphalt plant operations generating PM emissions (including the generator engine, 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) shall be limited to no more than 10 hours per day of operation (ARM 17.8.749).

2. Knife River shall not cause or authorize to be discharged into the atmosphere from any equipment, including 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).

3. Asphalt plant production shall be limited to the average production rate during the last source test demonstrating compliance (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 property any visible fugitive emissions that exhibit an opacity of 10% or greater (ARM 17.8.749).

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

6. Knife River shall not operate or have on-site more than one (1) diesel generator engine. The maximum combined capacity of the engine that drives the generator shall not exceed 1,072 bhp (ARM 17.8.749).

C. Operational Reporting Requirements

1. 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 the following, with date and location noted (ARM 17.8.749):

    a. Daily tons of asphalt produced.

    b. Daily hours of operation of asphalt plant equipment, including generator engine.

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

2. A written report indicating compliance status with Permit and Addendum conditions shall be submitted to the Department annually. The report for the previous calendar year may be submitted along with the annual emissions inventory (ARM 17.8.749).

Addendum 8 Analysis
Knife River Corporation
Montana Air Quality Permit (MAQP) #2996-07

I. Permitted Equipment

Knife River Corporation (Knife River) owns and operates a portable 400 ton per hour (TPH) asphalt plant. For operations in areas designated as non-attainment for particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) the maximum capacity of the generator engine to be used is 1,072 brake horsepower (bhp). A manufacturer's specification sheet is on file with the Department of Environmental Quality (Department) for the model 3412CDITA generator engine proposed during this permit action, however, the Addendum remains de minimis friendly.

II. Source Description

A typical operation for the drum mix asphalt plant begins by loading gravel into the feed bin. The gravel is then conveyed and screened to the asphalt plant drum. The gravel is mixed with hot oil in the asphalt plant to create asphalt. Hot asphalt then exits the plant and is transported to the current project site.

III. Applicable Rules and Regulations

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

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

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

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

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

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

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

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

IV. Emission Inventory

SUMMER SEASON (APRIL through **SEPTEMBER)**

Source	Lbs/day	
	PM	PM_{10}
Asphalt Plant w/Baghouse (up to 400 TPH)	189.44	94.72
Elevators, Screens, Bins, and Mixer	34.56	21.12
Cold Aggregate Handling	1.34	0.44
Haul Roads	30.00	13.50
Generator Engine (1,167 hp)	61.62	61.62
Total	**316.96**	**191.40**

WINTER SEASON (OCTOBER through **MARCH)**

Source	Lbs/day	
	PM	PM_{10}
400 TPH Asphalt Plant w/Baghouse	78.92	39.46
Aggregate Piles and Handling	5.72	2.71
Conveyor Transfers	1.68	0.55
Screening	8.80	2.96
Hot Mix Asphalt Storage	3.23	3.23
Truck Loadout	2.09	2.09
Haul Roads	15.00	6.75
Generator Engine (1,072 bhp)	23.58	23.58
Total	**139.02**	**81.33**

acfm = actual cubic feet per minute
CO = carbon monoxide
dscfm = dry standard cubic feet per minute
gr = grain
hp = horsepower
hr = hour
in. Hg = inches mercury
lb = pound
min = minute
NO_X = oxides of nitrogen
P = Pressure
PM = particulate matter
PM_{10} = particulate matter with an aerodynamic diameter of 10 microns or less
$PM_{2.5}$ = particulate matter with an aerodynamic diameter of 2.5 microns or less
SO_X = oxides of sulfur
T = Temperature
TPH = ton per hour
V = Volume
VOC = volatile organic compounds
VMT = vehicle miles traveled
yr = year
°F = degrees Fahrenheit
°R = degrees Rankine

Asphalt Plant Dryer (Baghouse Controlled)

Process Rate:	400	TPH	(Max Design, Prior Info)
Plant Elevation:	3000	ft	
Actual Pressure:	26.82	in Hg	
Standard Pressure:	29.92	in Hg	
Flowrate:	39400	adcfm	(Prior Info)
Standard Temperature:	527.69	° R	
Stack Temperature:	809.69	° R	(Prior Info)
Correction Equation:	V1 = V2*(P2/P1)*(T1/T2)		

Corrected Flowrate: 23017.25 dscfm

Winter Hours Restriction: **10** **hr/day**

PM Emissions

Emissions Factor: 0.04 gr/dscf (Permit Limit, Dept Guidance)

Calculations: 0.04gr/dscf*23017dscfm*1lb/7000gr*60min/hr = **7.89** **lb/hr**

7.89162965999842lb/hr*10hr/day= **78.92** **lb/day**

PM_{10} Emissions

Emissions Factor: 0.02 gr/dscf (50% of PM - Dept Guidance 9/25/2000)

Calculations: 0.02gr/dscf*23017dscfm*1lb/7000gr*60min/hr = **3.95** **lb/hr**

3.94581482999921lb/hr*10hr/day= **39.46** **lb/day**

Aggregate Storage Piles

AP-42 13.2.4-4, 11/2006

$$E = k(0.0032)\frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \text{ (pound [lb]/ton)}$$

where:

E = emission factor
k = particle size multiplier (dimensionless)
U = mean wind speed, meters per second (m/s) (miles per hour [mph])
M = material moisture content (%)

k = 0.35 PM_{10}

U =	9.1	mph	(statewide average)
M =	5	%	AP-42 11.1-1, 3/2004

PM Emissions

Emissions Factor: 0.00143 lb/ton

Calculations: 0.00143007393225538lb/ton*400TPH = 0.57 lb/hr

0.572029572902151lb/hr*10hr/day= **5.72 lb/day**

PM_{10} Emissions 0.000676 lb/ton

Emissions Factor: 0.00067638631930997 5lb/ton*400TPH = 0.27 lb/hr

0.27055452772399lb/hr*10hr/day= **2.71 lb/day**

Conveyor Transfers

PM Emissions

Emissions Factor: 0.00014 lb/ton

Calculations: 0.00014lb/ton*400TPH *3= 0.168 lb/hr

0.168lb/hr*10hr/day= **1.68 lb/day**

PM_{10} Emissions

Emissions Factor: 0.000046 lb/ton

Calculations: 0.000046lb/ton*400TPH *3= 0.0552 lb/hr

0.0552lb/hr*10hr/day= **0.55 lb/day**

Screening

PM Emissions

Emissions Factor: 0.0022 lb/ton

0.0022lb/ton*400TPH = 0.88 lb/hr

0.88lb/hr*10hr/day= **8.80 lb/day**

PM_{10} Emissions

Emissions Factor: 0.00074 lb/ton

0.00074lb/ton*400TPH = 0.296 lb/hr

0.296lb/hr*10hr/day= **2.96 lb/day**

Hot Mix Asphalt Storage

PM Emissions:

Emissions Factor: 0.000808 lb/ton (AP-42 Table 11.1-14, 3/2004)

0.000807514921712363lb/ton*400TPH = 0.323006 lb/hr

0.323005968684945lb/hr*10hr/day= **3.23 lb/day**

PM_{10} Emissions:

Emissions Factor:	0.000808 lb/ton (AP-42 Table 11.1-14, 3/2004)		
	0.000807514921712363lb/ton*400TPH =	0.323006	lb/hr
	0.323005968684945lb/hr*10hr/day=	**3.23**	**lb/day**

Truck Loadout

PM Emissions

Emissions Factor:	0.000522 lb/ton (AP-42 Table 11.1-14, 3/2004)		
	0.000521937031819792lb/ton*400TPH =	0.208775	lb/hr
	0.208774812727917lb/hr*10hr/day=	**2.09**	**lb/day**

PM_{10} Emissions

Emissions Factor:	0.000522 lb/ton (AP-42 Table 11.1-14, 3/2004)		
	0.000521937031819792lb/ton*400TPH =	0.208775	lb/hr
	0.208774812727917lb/hr*10hr/day=	**2.09**	**lb/day**

Haul Roads

VMT: 5 VMT/day (Prior Info)

PM Emissions

Emissions Factor:	6 lb/VMT (Department Guidance 4/25/1994)		
Calculations:	6lb/VMT*5VMT/day=	30	lb/day
	50% control efficiency for water control	**15.00**	**lb/day**

PM_{10} Emissions

Emissions Factor:	2.7 lb/VMT (Department Guidance 4/25/1994)		
Calculations:	2.7lb/VMT*5VMT/day=	13.5	lb/day
	50% control efficiency for water control	**6.75**	**lb/day**

Generator Engine

Engine Size: 1,072 hp

PM and PM_{10} Emissions

Emissions Factor:	0.0022 lb/hp-hr		
Calculations:	0.0022lb/hp-hr*1072hp=	2.3584	lb/hr
	2.3584lb/hr*10hr/day=	**23.58**	**lb/day**

V. Existing Air Quality

On July 1, 1987, the Environmental Protection Agency (EPA) promulgated new National Ambient Air Quality Standards (NAAQS) for PM_{10}. Due to exceedances of the national standards for PM_{10}, the cities of Kalispell (and the nearby Evergreen area), Columbia Falls, Butte, Whitefish, Libby, Missoula, and Thompson Falls were designated by EPA as nonattainment for PM_{10}. As a result of this designation, the EPA required the Department and the City-County Health Departments to submit PM_{10} State Implementation Plans (SIP). The SIPs consisted of emission control plans that controlled fugitive dust emissions from roads, parking lots, construction, and demolition, since technical studies identified these sources to be the major contributors to PM_{10} emissions.

MAQP #2996-07 and Addendum 8 are for a portable crushing/screening plant that will locate at sites in or within 10 kilometers (km) of certain PM_{10} nonattainment areas. The more stringent operating conditions contained in the addendum will minimize any potential impact on the nonattainment areas and will protect the national ambient air quality standards. Also, this facility is a portable source that would be expected to operate on an intermittent and temporary basis and any effects on air quality would be expected to be minor and short-lived.

VI. Air Quality Impacts

MAQP #2996-07 and Addendum 8 will cover the operations of this portable asphalt plant while operating in or within 10 km of PM_{10} nonattainment areas during the summer months (April through September), and, as approved by the Department, in winter months (October through March) .

VII. Taking or Damaging Implication Analysis

As required by 2-10-101 through 105, MCA, the Department conducted the following private property taking and damaging assessment:

YES	NO	
XX		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	XX	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	XX	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	XX	4. Does the action deprive the owner of all economically viable uses of the property?
	XX	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?
	XX	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	XX	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?
	XX	7a. Is the impact of government action direct, peculiar, and significant?
	XX	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?

	XX	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?
	XX	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.

VIII. Environmental Assessment

The current permit action is an administrative amendment; therefore, an environmental assessment is not required for the proposed project.

Addendum Analysis Prepared by: Shawn Juers
Date: 8/23/2012