Montana Department of
ENVIRONMENTAL QUALITY
Brian Schweitzer, Governor
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November 14, 2008

Jacqueline Flikkema
Knife River Corporation
PO Box 790
Missoula, MT 59806

Dear Ms. Flikkema:

Air Quality Permit #2978-05 is deemed final as of November 14, 2008, by the Department of Environmental Quality (Department). This permit is for a portable crushing/screening 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,

Vickie Walsh
Air Permitting Program Supervisor
Air Resources Management Bureau
(406) 444-3490

Kathleen Doran, P.E.
Environmental Engineer
Air Resources Management Bureau
(406) 247-4443

VW:kd
Enclosure

Montana Department of Environmental Quality
Permitting and Compliance Division

Air Quality Permit #2978-05

Knife River Corporation
P.O. Box 790
Missoula, MT 59806

November 14, 2008

AIR QUALITY PERMIT

Issued To: Knife River Corporation
P.O. Box 790
Missoula, MT 59806

Permit #2978-05
Administrative Amendment (AA)
Request Received: 01/24/08
Department Decision on AA: 10/29/08
Permit Final: 11/14/08
AFS #777-2978

An air quality permit, with conditions, is hereby granted 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) 17.8.740, *et seq*., as amended, for the following:

Section I: Permitted Facilities

A. Plant Location

Knife River operates a portable crushing/screening operation at various locations throughout Montana. The plant will originally locate in the NW¼ of Section 22, Township 29 North, Range 21 West and the NE ¼ of the SW ¼ of Section 23, Township 30 North, Range 21 West in Flathead County, Montana. However, Permit #2978-05 applies while operating in any location in Montana, except within 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 3 and Permit #2978-05 apply to the Knife River facility while operating at specific locations in or within 10 kilometers (km) of certain particulate matter less than 10 microns (PM_{10}) nonattainment areas during the winter months (October 1 – March 31), 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 1 – September 30). A complete list of the permitted equipment is contained in Section I.A of the Permit Analysis.

B. Current Permit Action

On January 24, 2008, the Department received a request from Knife River to change the name on Permit #2978-04 from JTL Group, Inc. to Knife River. The current permit action will transfer ownership of Permit #2978-04 from JTL Group, Inc. to Knife River and update 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.

Section II: Conditions and Limitations

A. Emission Limitations

1. All visible emissions from any Standards of Performance for New Stationary Sources (NSPS)-affected crusher shall not exhibit an opacity of 15% or greater averaged over 6 consecutive minutes (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart OOO).

2. All visible emissions from any other NSPS-affected equipment, such as screens or conveyor transfers, shall not exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart OOO).

3. All visible emissions from any non-NSPS affected equipment shall not exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304 and 17.8.752).

4. Water and spray bars shall be available on site at all times and operated, as necessary, to maintain compliance with the opacity limitations in Sections II.A.1, II.A.2, and II.A.3 (ARM 17.8.749 and ARM 17.8.752).

5. 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).

6. 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.5 (ARM 17.8.749).

7. Knife River shall not operate more than three crushers at any given time and the combined maximum rated design capacity shall not exceed 1100 tons per hour (TPH) (ARM 17.8.749)

8. Crushing production shall be limited to 3,575,000 tons during any rolling 12-month period (ARM 17.8.749).

9. Knife River shall not operate more than two screens at any given time and the combined maximum rated design capacity shall not exceed 1100 TPH (ARM 17.8.749).

10. Screening production shall be limited to 3,575,000 tons during any rolling 12-month period (ARM 17.8.749).

11 Knife River shall not operate more than two diesel-fired/engine-powered generators at any given time and the combined maximum rated design capacity shall not exceed 1,942 horsepower (hp) (ARM 17.8.749).

12. Operation of the diesel-fired engines/engine-powered generators shall not exceed a sum total of 6,311,500 horsepower-hours (hp-hr) during any rolling 12-month time period as shown by the following equation (ARM 17.8.749 and ARM 17.8.1204).

    Total hp-hr = ($Engine_1$ hp x hours of operation) + ($Engine_2$ hp x hours of operation)

13. 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).

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 OOO (ARM 17.8.340 and 40 CFR 60, Subpart OOO).

15. 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 Combustion Engines and 40 CFR 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, for any applicable diesel engine (ARM 17.8.340, 40 CFR 60, Subpart IIII, ARM 17.8.342 and 40 CFR 63, Subpart ZZZZ).

B. Testing Requirements

1. Within 60 days after achieving maximum production, but no later than 180 days after initial startup, an Environmental Protection Agency (EPA) Method 9 opacity test and/or other methods and procedures, as specified in 40 CFR Part 60.675, must be performed on all NSPS-affected equipment to demonstrate compliance with the emission limitations contained in Sections II.A.1 and II.A.2 (ARM 17.8.340 and 40 CFR 60, Subpart A and Subpart OOO).

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

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

C. Operational Reporting Requirements

1. If this crushing/screening plant is moved to another location, an Intent to Transfer form must be sent to the Department 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 Intent to Transfer form and the proof of publication (affidavit) of the Public Notice 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 and daily production rates 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 available at the plant site for inspection by the Department, and must be submitted to the Department upon request (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 units as required by the Department. This information may be used for calculating operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

4. 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).

5. Knife River shall document, by month, the crushing production from the facility. By the 25th day of each month, Knife River shall calculate the crushing production of the facility during the previous month. The monthly information will be used to verify compliance with the 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 screening production from the facility. By the 25th day of each month, Knife River shall calculate the screening production from the facility for the previous month 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 document, by month, the sum total hp-hrs of operation of the diesel-fired engines/engine-powered generators. By the 25th day of each month, Knife River shall calculate the hp-hrs of operation for all the diesel-fired engines for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.12. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

8. 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 with the annual emissions inventory information (ARM 17.8.749 and ARM 17.8.1204).

D. Addendum

Knife River shall comply with all conditions in Addendum 3 to Permit #2978-05 when operating in or within 10 km of certain PM_{10} nonattainment areas as described in the Addendum 3 (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 (CEMS, CERMS); or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver - The permit and all the terms, conditions, and matters stated herein shall be deemed accepted if the 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 in ARM 17.8.740, *et seq*. (ARM 17.8.756).

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

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

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

G. Permit Fees – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by Knife River may be grounds for revocation of this permit, as required by that section and rules adopted there under by the Board.

H. Construction Commencement – Construction must begin within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked (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 at any location in Montana, except within those areas having a Department-approved permitting program or areas considered tribal lands.

PERMIT ANALYSIS
Knife River Corporation.
Permit Number 2978-05

I. Introduction/Process Description

Knife River Corporation (Knife River) owns and operates a portable crushing/screening facility at various locations throughout Montana.

A. Permitted Equipment

Equipment at the facility includes, but is not limited to the following:

At the request of the permittee, this permit has been written in a de minimis-friendly manner.

1. (1) 1997 Nordberg cone crusher (up to 300 tons per hour (TPH) maximum capacity);

2. (1) 1995 Nordberg cone crusher (up to 400 TPH maximum capacity);

3. (1) 1994 Kue-Ken jaw crusher (up to 400 TPH maximum capacity);

4. (1) 1994 EL Jay 6'x14' screen (up to 700 TPH maximum capacity);

5. (1) 1993 EL Jay 6'x20' screen (up to 400 TPH maximum capacity);

6. (2) Diesel-fired engines/generators (up to 1942-horsepower (hp) combined maximum capacity);

7. Associated equipment (conveyors, transfer points, etc.).

B. Process Description

Knife River proposes to use this crushing/screening plant and associated equipment to crush and sort sand and gravel materials that will be used in their construction operations. For a typical operational setup, a dozer moves the material to the loader and the loader dumps it into the trap, which conveys the material to the first two-deck screen. The material is then conveyed to the jaw crusher. From the jaw crusher, the material is sent to the second two-deck screen and then either to the stockpile or to the cone crusher. If the material is sent to the cone crusher, it will go through the second two-deck screen again and then to the stockpile. A truck transports the material to the job site.

C. Permit History

On February 10, 1997, JTL Group Inc. (JTL) submitted a complete permit application to operate a portable 1995 Nordberg cone crusher (maximum production rate 400 TPH); a 1994 Kue-Ken jaw crusher (maximum production rate 400 TPH); and associated equipment. The facility was originally located at the SE ¼ of the NW ¼ of Section 36, Township 13 North, Range 19 West, in Missoula County, Montana. Whenever JTL operated in Missoula County, a Missoula County air quality permit was required. JTL operated under **Permit #2978-00** when operating outside of Missoula County.

On January 8, 1999, JTL requested that Permit #2978-00 be modified to allow them to operate in or within 10 kilometers (km) of certain PM_{10} nonattainment areas (NAAs) only during the summer months (April 1, 1999, through September 30, 1999). Also, a correction was made in the emission inventory to reflect the 50% air pollution control on equipment. Emissions from this plant did not increase as a result of the correction. **Permit #2978-01** replaced Permit #2978-00.

On March 24, 2000, JTL requested to add a 1997 Nordberg cone crusher (maximum capacity 300 TPH) to their permitted facility. In addition, the permit action updated the permit to reflect the correct process rates and correct equipment manufacturing dates. Potential emissions from the 1997

Nordberg cone crusher (maximum capacity 300 TPH) did not exceed the de minimis threshold of 15 tons per year; therefore, this permit action was considered a modification. **Permit #2978-02** replaced Permit #2978-01.

On November 9, 2000, JTL submitted a request for a wintertime addendum to operate at the following two locations within Flathead County, Montana: the NW¼ of Section 22, Township 29 North, Range 21 West and the NE ¼ of the SW ¼ of Section 23, Township 30 North, Range 21 West. In addition to allowing the facility to operate in the Mohl pit and Hodgeson pit (both located in the Kalispell NAA) during the winter months; the permit also allowed this equipment to operate in or within 10 kilometers of any of the following PM_{10} NAAs during the summer months of April 1, 2001, through September 30, 2001: Libby, Kalispell, Columbia Falls, Whitefish, Thompson Falls, and Butte. **Permit #2978-03** replaced Permit #2978-02 and **Addendum 1** was established.

On December 6, 2001, JTL requested that Addendum 1 to Permit #2978-03 be renewed to allow JTL to operate at the following two locations within Flathead County, Montana: the NW¼ of Section 22, Township 29 North, Range 21 West and the NE ¼ of the SW ¼ of Section 23, Township 30 North, Range 21 West. In addition to allowing the facility to operate in the Mohl pit and Hodgeson pit during the winter months, both located in the Kalispell NAA, the permit will also allow this equipment to operate in or within 10 km of any of the following PM_{10} NAAs during the summer months of April 1 through September 30: Libby, Kalispell, Columbia Falls, Whitefish, Thompson Falls, and Butte. **Permit #2978-04** replaced Permit #2978-03 and **Addendum 2** replaced Addendum 1.

D. Current Permit Action

On January 24, 2008, the Department of Environmental Quality (Department) received a request from Knife River to change the name on permit #2978-04 from JTL to Knife River. The current permit action will transfer ownership of Permit #2978-04 from JTL to Knife River and update 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. **Permit #2978-05** replaces Permit #2978-04, and **Addendum 3** replaces Addendum 2.

E. Additional Information

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

II. Applicable Rules and Regulations

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

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

1. ARM 17.8.101 Definitions. This rule 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 all requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than 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. ARM17.8.214 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 comply with the applicable ambient air quality standards.

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

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

2. ARM 17.8.308 Particulate Matter (PM), 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 PM. (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 PM.

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 PM 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 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). The owner or operator of any stationary source or modification, as defined and applied in 40 CFR Part 60, NSPS, shall comply with the standards and provisions of 40 CFR Part 60.

   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 OOO, Standards of Performance for Nonmetallic Mineral Processing Plants, indicates that NSPS requirements apply to portable crushing/screening facilities with capacities greater than 150 tons per hour and that were constructed after August 31, 1983. The Knife River facility has a capacity in excess of 150 tons per hour and was constructed after August 31,

1983; therefore, NSPS requirements apply to the facility.

c. 40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition (CI) Internal Combustion Engines (ICE), indicates that NSPS requirements apply to owners or operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE is manufactured after April 1, 2006, and is not a fire pump engine. 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.

The 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 National Emission Standard for Hazardous Air Pollutants (NESHAPs) Subpart as listed below:

b. 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE). As an area source, the diesel RICE at Knife River will be subject to this rule. However, although diesel RICE engines are an affected source, per 40 CFR 63.6590(b)(3) they do not have any requirements unless they are new or reconstructed after June 12, 2006. Any diesel RICE engine operated by Knife River that is new or reconstructed after June 12, 2006 will be subject to this Maximum Available Control Technology (MACT) standard if the engine remains or will remain at the permitted location for more than 12 months, or a shorter period of time for an engine located at a seasonal source. A seasonal source remains at a single location on a permanent basis (at least 2 years) and operates 3 months or more each year. Since the permit is written in a de minimis-friendly manner, area source provisions of the MACT requirements may apply to future engines.

D. ARM 17.8, Sub-Chapter 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 Knife River 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. 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, Sub-Chapter 7, Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:

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

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

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

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

5. ARM 17.8.748 New or Modified Emitting Units – Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, modification, or use of a source. 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 altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less that 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 air quality permit may be transferred from one location to another if the Department receives a complete notice of Intent to Transfer location, the facility will operate in the new location for less than 1 year, the facility will comply with the FCAA and the Clean Air Act of Montana, and the facility complies with other applicable rules. (2) This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and 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, Montana Code Annotated (MCA).

F. ARM 17.8, Sub-Chapter 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 sub-chapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications - Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification with respect to each pollutant subject to regulation under the FCCA 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, Sub-Chapter 12 - Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any stationary source having:

   a. PTE > 100 tons/year of any pollutant,

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

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

2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #2978-05 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 facility is not located in a serious PM_{10} non-attainment area.

   d. This facility is subject to current NSPS (40 CFR 60, Subpart A General Provisions, Subpart OOO, Non-Metallic Mineral Processing Plants, and may be subject to Subpart IIII in the future).

   e. This facility is not subject to any current NESHAP standards. However, the facility may be subject to the area source provisions of 40 CFR 63, Subpart ZZZZ in the future.

f. This source is not a Title IV affected source or a solid waste combustion unit.

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

Knife River is not subject to Title V Operating Permit requirements because federally enforceable limitations have been established which limit the sources potential to emit below the major source threshold. However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit, Knife River will be required to obtain a Title V Operating Permit.

h. The Department may exempt a source from the requirement to obtain an air quality operating permit by establishing federally enforceable limitations which limit the source's potential to emit.

i. In applying for an exemption under this section, the owner or operator of the source shall certify to the Department that the source's potential to emit 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 by a responsible official. This certification and any other certification required under this sub-chapter 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 a new or altered source. Knife River shall install on the new or altered source the maximum air pollution control capability which is technologically 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

	Ton/Year					
Source	**PM**	**PM_{10}**	**NO_x**	**VOC**	**CO**	**SO_x**
1994 Ken Kue Jaw Crusher (400 TPH)	0.78	0.35				
1995 Nordberg Cone Crusher (400 TPH)	0.78	0.35				
1997 Nordberg Cone Crusher (300 TPH)	0.59	0.26				
1994 6x14 EL Jay Cedar Rapids Screen (700 TPH)	2.50	0.84				
1993 6x20 EL Jay Two-Deck Screen (400 TPH)	1.43	0.48				
1997 Caterpillar Diesel Generator (1766 hp)	6.31	6.31	88.96	7.20	19.17	5.88
1995 Caterpillar Diesel Generator (176 hp)	0.63	0.63	8.87	0.72	1.91	0.59
Material Transfer	3.25	1.07				
Pile Forming	17.27	8.20				
Bulk Loading	0.36	0.36				
Haul Roads	12.68	3.60				
Total	46.58	22.45	97.83	7.92	21.08	6.47
Note: ** Hours of operation for the crushing/screening operation are limited to 3250 hours per year.						

Diesel Generator (176 hp)

Operating Parameters

Operating Hours: 3250 hr/yr
Engine Size: 176 hp

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 * 176 hp * 3250 hr/yr * 0.0005 ton/lb = 0.63 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 * 176 hp * 3250 hr/yr * 0.0005 ton/lb = 0.63 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 * 176 hp * 3250 hr/yr * 0.0005 ton/lb = 8.87 ton/yr

VOC Emissions

Emission Factor: 0.00251 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel - 10/96)
Calculations: 0.00251 lb/hp-hr * 176 hp * 3250 hr/yr * 0.0005 ton/lb = 0.72 ton/yr

CO Emissions

Emission Factor: 0.00668 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel - 10/96)
Calculations: 0.00668 lb/hp-hr * 176 hp * 3250 hr/yr * 0.0005 ton/lb = 1.91 ton/yr

SO_x Emissions

Emission Factor: 0.00205 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel - 10/96)
Calculations: 0.00205 lb/hp-hr * 176 hp * 3250 hr/yr * 0.0005 ton/lb = 0.59 ton/yr

Diesel Generator (1766 hp)

Operating Parameters

Operating Hours: 3250 hr/yr

Engine Size: 1766 hp

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 * 1766 hp * 3250 hr/yr * 0.0005 ton/lb = 6.31 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 * 1766 hp * 3250 hr/yr * 0.0005 ton/lb = 6.31 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 * 1766 hp * 3250 hr/yr * 0.0005 ton/lb = 88.96 ton/yr

VOC Emissions

Emission Factor: 0.00251 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel - 10/96)
Calculations: 0.00251 lb/hp-hr * 1766 hp * 3250 hr/yr * 0.0005 ton/lb = 7.20 ton/yr

CO Emissions

Emission Factor: 0.00668 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel - 10/96)
Calculations: 0.00668 lb/hp-hr * 1766 hp * 3250 hr/yr * 0.0005 ton/lb = 19.17 ton/yr

SO_x Emissions

Emission Factor: 0.00205 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel - 10/96)
Calculations: 0.00205 lb/hp-hr * 1766 hp * 3250 hr/yr * 0.0005 ton/lb = 5.88 ton/yr

1994 Ken Kue Jaw Crusher (400 hp)

Operating Parameters

Operating Hours: 3250 hr/yr
Engine Size: 400 hp

PM Emissions

Emission Factor: 0.0012 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.0012 lb/hp-hr * 400 hp * 3250 hr/yr * 0.0005 ton/lb = 0.78 ton/yr

PM_{10} Emissions

Emission Factor: 0.00054 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.00054 lb/hp-hr * 400 hp * 3250 hr/yr * 0.0005 ton/lb = 0.35 ton/yr

1995 Nordberg Cone Crusher (400 hp)

Operating Parameters

Operating Hours: 3250 hr/yr
Engine Size: 400 hp

PM Emissions

Emission Factor: 0.0012 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.0012 lb/hp-hr * 400 hp * 3250 hr/yr * 0.0005 ton/lb = 0.78 ton/yr

PM_{10} Emissions

Emission Factor: 0.00054 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.00054 lb/hp-hr * 400 hp * 3250 hr/yr * 0.0005 ton/lb = 0.35 ton/yr

1997 Nordberg Cone Crusher (400 hp)

Operating Parameters

Operating Hours: 3250 hr/yr
Engine Size: 300 hp

PM Emissions

Emission Factor: 0.0012 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.0012 lb/hp-hr * 300 hp * 3250 hr/yr * 0.0005 ton/lb = 0.59 ton/yr

PM_{10} Emissions

Emission Factor: 0.00054 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.00054 lb/hp-hr * 300 hp * 3250 hr/yr * 0.0005 ton/lb = 0.26 ton/yr

1994 6'x14' El Jay Cedar Rapids Screen (700 hp)

Operating Parameters

Operating Hours: 3250 hr/yr
Engine Size: 700 hp

PM Emissions

Emission Factor: 0.0022 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.0022 lb/hp-hr * 700 hp * 3250 hr/yr * 0.0005 ton/lb = 2.50 ton/yr

PM_{10} Emissions

Emission Factor: 0.00074 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.00074 lb/hp-hr * 700 hp * 3250 hr/yr * 0.0005 ton/lb = 0.84 ton/yr

1993 6'x20' El Jay Two-Deck Screen (400 hp)

Operating Parameters

Operating Hours: 3250 hr/yr
Engine Size: 400 hp

PM Emissions

Emission Factor: 0.0022 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.0022 lb/hp-hr * 400 hp * 3250 hr/yr * 0.0005 ton/lb = 1.43 ton/yr

PM_{10} Emissions

Emission Factor: 0.00074 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.00074 lb/hp-hr * 400 hp * 3250 hr/yr * 0.0005 ton/lb = 0.48 ton/yr

Bulk Loading

Operating Parameters

Maximum Process Rate: 1100 ton/hr
Hours of Operation: 3250 hr/yr
Number of Loads: 2 load(s)

PM Emissions

Emission Factor: 1.00E-04 lbs/ton (AP-42, Table 11.19.2-2, 08/2004 – controlled)
Calculations: 0.0001 lbs/ton * 1100 ton/hr * 3250 hr/yr * 2 load(s) * 0.0005 tons/lb = 0.36 ton/yr

PM_{10} Emissions

Emission Factor: 1.00E-04 lbs/ton (AP-42, Table 11.19.2-2, 08/2004 – controlled)
Calculations: 0.0001 lbs/ton * 1100 ton/hr * 3250 hr/yr * 2 load(s) * 0.0005 ton/lb = 0.36 ton/yr

Material Transfer

Operating Parameters

Maximum Process Rate:	1100 ton/hr
Hours of Operation:	3250 hr/yr
Number of Loads:	13 transfer(s)

PM Emissions

Emission Factor: 0.00014 lbs/ton (AP-42 Table 11.19.2-2, 8/2004 - controlled)

Calculations: 0.00014 lbs/ton * 1100 ton/hr * 3250 hr/yr * 13 transfer(s) * 0.0005 ton/lb = 0.36 ton/yr

PM_{10} Emissions

Emission Factor: 0.00014 lbs/ton (AP-42, Table 11.19.2-2, 08/2004 – controlled)

Calculations: 0.00014 lbs/ton * 1100 ton/hr * 3250 hrs/yr * 13 transfer(s) * 0.0005 ton/lb = 0.36 ton/yr

Pile Forming

Operating Parameters

Maximum Process Rate:	1100 ton/hr
Hours of Operation:	3250 hr/yr
Number of Loads:	3 pile(s)

PM Emissions

Emission Factor: 0.00322 lbs/ton (AP-42 Section 13.2.4.3, 11/2006 - controlled)

Calculations: 0.00322 lbs/ton * 1100 ton/hr * 3250 hrs/yr * 3 pile(s) * 0.0005 ton/lb = 17.27 ton/yr

PM_{10} Emissions

Emission Factor: 0.00153 lbs/ton (AP-42 Section 13.2.4.3, 11/2006 - controlled)

Calculations: 0.00153 lbs/ton * 1100 ton/hr * 3250 hr/yr * 3 pile(s) * 0.0005 ton/lb = 8.20 ton/yr

Predictive Equations for Storage Piles (AP-42, Section 13.2.4.3 and Table 13.2.4-4)

$$E = k * (0.0032) * (U/5)^{1.3} / (M/2)^{1.4}$$

Pollutant	k	U	M	Calculated E (lb/ton)
PM	0.74	8.15	2.525	0.00322
PM_{10}	0.35	8.15	2.525	0.00153

k from table on page 13.2.4-4

U, M averages of values from table on page 13.2.4-4

U = mean wind speed (mph)

M = moisture content

PM = < 30 microns

Haul Roads

Operating Parameters

Vehicle Miles Traveled:	5 VMT/day
Number of Operating Days:	365 days/yr

Emission Factor for Rated Load Capacity < 50 ton

PM Emissions

Emission Factor: 13.90 lbs/VMT (AP-42 Chapter 13.2.2, 11/2006 - controlled)

Calculations: 13.90 lbs/VMT * 5 VMT/day * 365 days/yr * 0.0005 ton/lb = 12.68 ton/yr

PM_{10} Emissions

Emission Factor: 3.95 lbs/VMT (AP-42 Chapter 13.2.2, 11/2006 - controlled)

Calculations: 3.95 lbs/VMT * 5 VMT/day * 365 day/yr * 0.0005 tons/lb = 3.60 ton/yr

V. Existing Air Quality

Permit #2978-05 is issued for the operation of a portable crushing/screening plant, to be initially located in the NW ¼ of Section 22, Township 29 North, Range 21West, in Flathead County, Montana. Permit #2978-05 also applies while operating in any location within the State of Montana, excluding those counties having a Department- approved permitting program and those areas considered tribal lands. *A Missoula County air quality permit will be required for locations within Missoula County, Montana*. The Department determined that the amount of controlled emissions generated by this facility will not exceed any set ambient air quality standard. In addition, this source is portable and will operate on an intermittent and temporary basis at any given location, so any air quality impacts will be minimal. Furthermore, conditions have been placed in this permit to further protect air quality while operating in nonattainment areas.

Addendum 3 and Permit #2978-05 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, ass approved by the Department, and at any location in or within 10 km of any PM_{10} nonattainment areas during the summer months.

VI. Ambient Air Quality Impacts

Based on the information provided and the conditions established in Permit #2978-05, the amount of controlled emissions generated by the operation of this facility will not exceed any set ambient air quality standards. The conditions in Permit #2978-05 will be protective of air quality while Knife River is operating at locations not located in or within 10 km of certain PM_{10} nonattainment areas. The limitations and conditions established in Addendum #3 would further reduce emissions in the nonattainment areas and would be protective of the ambient air quality standards. Lastly, this facility is a portable source that would operate on an intermittent and temporary basis, so any air quality impacts will be minimal and short-lived.

VII. Ambient Air Impact Analysis

The Department determined, based on the relatively small amount of controlled emissions generated by the operation of this Knife River facility and the limits and conditions established in Permit #2978-05, that the impact from this permitting action will be minor. In addition, this source is portable and any air quality impacts will be minimal and short-lived.

VIII. Takings or Damaging Implication Analysis

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

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.

Addendum 3
Knife River Corporation
Permit #2978-05

An addendum to air quality Permit #2978-05 is issued to Knife River Corporation (Knife River), pursuant to Section 75-2-204 and 75-2-211 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

Equipment at the facility includes, but is not limited to the following:

1. (1) 1997 Nordberg cone crusher (up to 300 tons per hour (TPH) maximum capacity);
2. (1) 1995 Nordberg cone crusher (up to 400 TPH maximum capacity);
3. (1) 1994 Kue-Ken jaw crusher (up to 400 TPH maximum capacity);
4. (1) 1994 EL Jay 6'x14' screen (up to 700 TPH maximum capacity);
5. (1) 1993 EL Jay 6'x20' screen (up to 400 TPH maximum capacity);
6. (2) Diesel-fired engines/generators (up to 1942-horsepower (hp) combined maximum capacity);
7. Associated equipment (conveyors, transfer points, etc.).

At the request of the permittee, this permit has been written in a de minimis-friendly manner for use in both attainment and nonattainment areas.

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

Addendum 3 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 (NAA). Additionally, seasonal and site restrictions apply to the facility as follows.

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

1. The NW ¼ of Section 22, Township 29 North, Range 1 West (Mohl Pit), located in Flathead County, Montana,
2. The NE ¼ of the SW ¼ of Section 23, Township 30 North, Range 21 West (Hodgeson Pit), located in Flathead County, Montana, and
3. 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} NAAs.

C. Knife River shall comply with the limitations and conditions contained in Addendum 3 to Permit #2974-05 while operating in or within 10 km of any of the previously identified PM_{10} NAAs. Addendum 3 shall be valid until revoked or modified. The Department reserves the authority to modify Addendum 3 at any time based on local conditions of any future site. These conditions may include, but are not limited to, local terrain, meteorological conditions, proximity to residences or other businesses, etc.

III. Limitations and Conditions

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

1. Knife River shall not cause or authorize emissions to be discharged from the portable crushing/screening facility that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

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

3. Water and water spray bars shall be available on site at all times and operated, as necessary, on the crushers, screens, and all transfer points whenever the crushing/screening plant is in operation to maintain compliance with the opacity limitation in Section III.A.1 and III.A.2 (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 dust emissions that exhibit an opacity of 10% or greater.

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 (ARM 17.8.308, ARM 17.8.749).

6. Knife River shall not operate more than three crushing units at any given time and the combined crusher production from the three crushers shall not exceed 9700 tons per day (ARM 17.8.752).

7. Knife River shall not operate more than two screens at any one time. Total screen production shall not exceed 9700 tons per day (ARM 17.8.752).

8. Knife River shall not operate more than two diesel generators/engines at any given time and the hours of operation of each of the two diesel generators/engines shall not exceed 8.9 hours of operation per day (ARM 17.8.749).

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

1. Knife River shall not cause or authorize emissions to be discharged from the portable crushing/screening facility that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

2. Knife River shall not cause or authorize to be discharged into the atmosphere from haulroads, access roads, parking lots, or the general plant property any visible fugitive emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive

minutes (ARM 17.8.749).

3. Water and water spray bars shall be available on site at all times and operated, as necessary, on the crushers, screens, and all transfer points whenever the crushing/screening plant is in operation to maintain compliance with the opacity limitation in Section III.A.1 and III.A.2 (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 dust emissions that exhibit an opacity of 10% or greater.

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 (ARM 17.8.308, ARM 17.8.749).

6. Knife River shall not operate more than three crushing units at any given time and the combined crusher production from the three crushers shall not exceed 1600 tons per day (ARM 17.8.752).

7. Knife River shall not operate more than two screens at any one time. Total screen production shall not exceed 1600 tons per day (ARM 17.8.752).

8. Knife River shall not operate more than two diesel generators/engines at any given time and the hours of operation of each of the two diesel generators/engines shall not exceed 6.0 hours of operation per day (ARM 17.8.749).

C. Operational Reporting Requirements

1. If this crushing/screening facility 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 5 years submitted to the Department upon request. The information must include (ARM 17.8.749):

   a. Tons of material crushed by each crusher at each site (including amount of recirculated/rerun material),

   b. Tons of material screened by each screen at each site (including amount of recirculated/rerun material),

   c. Tons of bulk material loaded at each site,

   d. Daily hours of operation at each site,

   e. Gallons of diesel used by each generator at each site,

f. Hours of operation and sizes for each generator at each site,

g. Fugitive dust information consisting of the total miles driven on unpaved roads for all plant vehicles.

3. Knife River shall document, by day, the total crushing production. Knife River shall sum the total crushing production for the previous day to verify compliance with the limitation in Sections III.A.6 and III.B.6. A written report of compliance and the emissions inventory shall be submitted to the Department annually. The report for the previous calendar year shall be submitted and may be submitted along with the annual emissions inventory (ARM 17.8.752).

4. Knife River document, by day, the total screening production. Knife River shall sum the total screening production for the previous day to verify compliance with the limitation in Sections III.A.7 and III.B.7 (ARM 17.8.752).

5. Knife River shall document, by day, the total hours of operation for each of the two portable generators. Knife River shall total the daily hours of operation of the generators during the previous day to verify compliance with the limitation in Sections III.A.8 and III.B.8. A written report of the compliance verification shall be submitted along with the annual emissions inventory (ARM 17.8.749).

Addendum 3 Analysis
Knife River Corporation.
Permit #2978-05

I. Permitted Equipment

Knife River Corporation (Knife River) owns and operates a portable crushing/screening facility at various locations throughout Montana.

II. Source Description

Knife River uses this crushing/screening plant and associated equipment to crush and sort sand and gravel materials that will be used in their construction operations. For a typical operational setup, a dozer moves the material to the loader and the loader dumps it into the trap, which conveys the material to the first two-deck screen. The material is then conveyed to the jaw crusher. From the jaw crusher, the material is sent to the second two-deck screen and then either to the stockpile or to the cone crusher. If the material is sent to the cone crusher, it will go through the second two-deck screen again and then to the stockpile. A truck transports the material to the job site.

III. Permit History

On February 10, 1997, JTL Group Inc. (JTL) submitted a complete permit application to operate a portable 1995 Nordberg cone crusher (maximum production rate 400 TPH); a 1994 Kue-Ken jaw crusher (maximum production rate 400 TPH); and associated equipment. The facility was originally located at the SE ¼ of the NW ¼ of Section 36, Township 13 North, Range 19 West, in Missoula County, Montana. While JTL operates in Missoula County, a Missoula County air quality permit is required. JTL will operate under **Permit #2978-00** while operating outside of Missoula County.

On January 8, 1999, JTL requested that Permit #2978-00 be modified to allow them 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 (NAA) only during the summer months (April 1, 1999, through September 30, 1999). Also, a correction was made in the emission inventory to reflect the 50% air pollution control equipment. Emissions from this plant did not increase as a result of the correction. **Permit #2978-01** replaced Permit #2978-00.

On March 24, 2000, JTL requested to add a 1997 Nordberg cone crusher (maximum capacity 300 TPH), to their permitted facility. In addition, the permit action updated the permit to reflect the correct process rates and correct equipment manufacturing dates. Potential emissions from the 1997 Nordberg Cone Crusher (maximum capacity 300 TPH) did not exceed the de minimis threshold of 15 tons per year; therefore, this permit action was considered a modification. **Permit #2978-02** replaced Permit #2978-01.

On November 9, 2000, JTL submitted a request for a wintertime addendum to operate at the following two locations within Flathead County, Montana: the NW¼ of Section 22, Township 29 North, Range 21 West and the NE ¼ of the SW ¼ of Section 23, Township 30 North, Range 21 West. In addition to allowing the facility to operate in the Mohl and Hodgeson pit (both located in the Kalispell NAA); the permit also allowed this equipment to operate in or within 10 km of any of the following PM_{10} NAAs during the summer months of April 1, 2001, through September 30, 2001: Libby, Kalispell, Columbia Falls, Whitefish, Thompson Falls, and Butte. **Permit #2978-03** replaced Permit #2978-02 and **Addendum 1** was established.

On December 6, 2001, JTL requested that Addendum 1 to Permit #2978-03 be renewed to allow JTL to operate at the following two locations within Flathead County, Montana: the NW¼ of Section 22, Township 29 North, Range 21 West (Mohl Pit) and the NE ¼ of the SW ¼ of Section 23, Township 30 North, Range 21 West (Hodgeson Pit). In addition to allowing the facility to operate in the Mohl pit and Hodgeson pit during the winter months, both located in the Kalispell NAA, the permit will also allow this equipment to operate in or within 10 km of any of the following PM_{10} NAAs during the summer months of April 1 through September 30: Libby, Kalispell, Columbia Falls, Whitefish, Thompson Falls, and Butte. **Permit #2978-04** replaced Permit #2978-03 and **Addendum 2** replaced Addendum 1.

IV. Current Permit Action

On January 24, 2008, the Department of Environmental Quality (Department) received a request from Knife River to change the name on permit #2978-04 from JTL to Knife River. The current permit action will transfer ownership of Permit #2978-04 from JTL to Knife River and update 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. **Permit #2978-05** replaces Permit #2978-04, and **Addendum 3** replaces Addendum 2.

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

ARM 17.8, Sub-Chapter 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.

Knife River shall submit proof of compliance with the transfer and public notice requirements when they transfer to the location covered by this Addendum and will only be allowed to stay in the new location for a period of less than 1 year. Also, the conditions and controls of this Addendum will keep Knife River from having a significant impact on the PM_{10} nonattainment areas covered by this permit.

VI. Emission Inventory – Addendum 3

SUMMER SEASON (APRIL 1 – SEPTEMBER 30)

Source	lb/day PM	PM_{10}	NO_x	VOC	CO	SO_x
1994 Ken Kue Jaw Crusher (400 TPH)	4.27	1.92	--	--	--	--
1995 Nordberg Cone Crusher (400 TPH)	4.27	1.92	--	--	--	--
1997 Nordberg Cone Crusher (300 TPH)	3.20	1.44	--	--	--	--
1994 EL-Jay Cedar Rapids Screen (700 TPH)	13.71	4.61	--	--	--	--
1993 EL-Jay two-Deck Screen (400 TPH)	7.83	2.63	--	--	--	--
Material Transfer	17.82	5.85	--	--	--	--
Pile Forming	94.57	44.94	--	--	--	--
Bulk Loading	1.96	1.96	--	--	--	--
Diesel Generator (176 hp)	3.45	3.45	48.56	3.93	10.46	3.21
Diesel Generator (1766 hp)	34.58	34.58	487.24	39.45	104.99	32.22
Haul Roads	69.50	19.75	--	--	--	--
Total	255.16	123.05	535.80	43.38	115.45	35.43

NOTE:
** *Knife River is restricted to maintain emissions below modeling threshold of 547 lb/day.*

Diesel Generator (176 hp)

Operating Parameters

Operating Hours: 8.9 hr/day
Engine Size: 176 hp

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 * 176 hp * 8.9 hr/day = 3.45 lb/day

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 * 176 hp * 8.9 hr/day = 3.45 lb/day

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 * 176 hp * 8.9 hr/day = 48.56 lb/day

VOC Emissions

Emission Factor: 0.00251 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel - 10/96)
Calculations: 0.00251 lb/hp-hr * 176 hp * 8.9 hrs/day = 3.93 lb/day

CO Emissions

Emission Factor: 0.00668 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel - 10/96)
Calculations: 0.00668 lb/hp-hr * 176 hp * 8.9 hr/day = 10.46 lb/day

SO_x Emissions
Emission Factor: 0.00205 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel - 10/96)
Calculations: 0.00205 lb/hp-hr * 176 hp * 8.9 hr/day = 3.21 lb/day

Diesel Generator (1766 hp)
Operating Parameters
Operating Hours: 8.9 hr/day
Engine Size: 1766 hp

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 * 1766 hp * 8.9 hr/day = 34.58 lb/day

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 * 1766 hp * 8.9 hr/day = 34.58 lb/day

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 * 1766 hp * 8.9 hr/day = 487.24 lb/day

VOC Emissions
Emission Factor: 0.00251 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel - 10/96)
Calculations: 0.00251 lb/hp-hr * 1766 hp * 8.9 hr/day = 39.45 lb/day

CO Emissions
Emission Factor: 0.00668 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel - 10/96)
Calculations: 0.00668 lb/hp-hr * 1766 hp * 8.9 hr/day = 104.99 lb/day

SO_x Emissions
Emission Factor: 0.00205 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel - 10/96)
Calculations: 0.00205 lb/hp-hr * 1766 hp * 8.9 hr/day = 32.22 lb/day

1994 Ken Kue Jaw Crusher (400 hp)
Operating Parameters
Operating Hours: 8.9 hr/day
Engine Size: 400 hp

PM Emissions
Emission Factor: 0.0012 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.0012 lb/hp-hr * 400 hp * 8.9 hr/day = 4.27 lb/day

PM_{10} Emissions
Emission Factor: 0.00054 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.00054 lb/hp-hr * 400 hp * 8.9 hr/day = 1.92 hr/day

1995 Nordberg Cone Crusher (400 hp)

Operating Parameters

Operating Hours: 8.9 hr/day
Engine Size: 400 hp

PM Emissions

Emission Factor: 0.0012 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.0012 lb/hp-hr * 400 hp * 8.9 hr/day = 4.27 lb/day

PM_{10} Emissions

Emission Factor: 0.00054 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.00054 lb/hp-hr * 400 hp * 8.9 hr/day = 1.92 lb/day

1997 Nordberg Cone Crusher (300 hp)

Operating Parameters

Operating Hours: 8.9 hr/day
Engine Size: 300 hp

PM Emissions

Emission Factor: 0.0012 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.0012 lb/hp-hr * 300 hp * 8.9 hr/day = 3.20 lb/day

PM_{10} Emissions

Emission Factor: 0.00054 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.00054 lb/hp-hr * 300 hp * 8.9 hr/day = 1.44 lb/day

1994 6'x14' El Jay Cedar Rapids Screen (700 hp)

Operating Parameters

Operating Hours: 8.9 hr/day
Engine Size: 700 hp

PM Emissions

Emission Factor: 0.0022 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.0022 lb/hp-hr * 700 hp * 8.9 hr/day = 13.71 lb/day

PM_{10} Emissions

Emission Factor: 0.00074 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.00074 lb/hp-hr * 700 hp * 8.9 hr/day = 4.61 lb/day

1993 8'x20' El Jay Two-Deck Screen (400 hp)

Operating Parameters

Operating Hours: 8.9 hr/yr
Engine Size: 400 hp

PM Emissions

Emission Factor: 0.0022 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.0022 lb/hp-hr * 400 hp * 8.9 hr/day = 7.83 lb/day

PM_{10} Emissions

Emission Factor: 0.00074 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.00074 lb/hp-hr * 400 hp * 8.9 hr/day = 2.63 lb/day

Bulk Loading

Operating Parameters

Maximum Process Rate:	1100 ton/hr
Hours of Operation:	8.9 hr/day
Number of Loads:	2 load(s)

PM Emissions

Emission Factor: 1.00E-04 lbs/ton (AP-42, Table 11.19.2-2, 08/2004 – controlled)

Calculations: 0.0001 lbs/ton * 1100 ton/hr * 8.9 hr/day * 2 load(s) = 1.96 lb/day

PM_{10} Emissions

Emission Factor: 1.00E-04 lbs/ton (AP-42, Table 11.19.2-2, 08/2004 – controlled)

Calculations: 0.0001 lbs/ton * 1100 ton/hr * 8.9 hr/day * 2 load(s) = 1.96 lb/day

Material Transfer

Operating Parameters

Maximum Process Rate:	1100 ton/hr
Hours of Operation:	8.9 hr/day
Number of Loads:	13 transfer(s)

PM Emissions

Emission Factor: 0.00014 lbs/ton (AP-42 Table 11.19.2-2, 8/2004 - controlled)

Calculations: 0.00014 lbs/ton * 1100 tons/hr * 8.9 hr/day * 13 transfer(s) = 17.82 lb/day

PM_{10} Emissions

Emission Factor: 0.00014 lbs/ton (AP-42, Table 11.19.2-2, 08/2004 – controlled)

Calculations: 0.000046 lbs/ton * 1100 tons/hr * 8.9 hr/day * 13 transfer(s) = 5.85 lb/day

Pile Forming

Operating Parameters

Maximum Process Rate:	1100 ton/hr
Hours of Operation:	8.9 hr/day
Number of Loads:	3 pile(s)

PM Emissions

Emission Factor: 0.00322 lbs/ton (AP-42 Section 13.2.4.3, 11/2006 - controlled)

Calculations: 0.00322 lbs/ton * 1100 tons/hr * 8.9 hrs/day * 3 pile(s) = 94.57 lb/day

PM_{10} Emissions

Emission Factor: 0.00153 lbs/ton (AP-42 Section 13.2.4.3, 11/2006 - controlled)

Calculations: 0.00153 lbs/ton * 1100 tons/hr * 8.9 hr/day * 3 pile(s) = 44.94 lb/day

Predictive Equations for Storage Piles (AP-42, Section 13.2.4.3 and Table 13.2.4-4)

$$E = k * (0.0032) * (U/5)^{1.3} / (M/2)^{1.4}$$

Pollutant	k	U	M	Calculated E (lb/ton)
PM	0.74	8.15	2.525	0.00322
PM_{10}	0.35	8.15	2.525	0.00153

k from table on page 13.2.4-4

U, M averages of values from table on page 13.2.4-4

U = mean wind speed (mph)

M = moisture content

PM = < 30 microns

Haul Roads

Operating Parameters

Vehicle Miles Traveled (est. restricted to 8.9 hrs) 5 VMT/day
Number of Operating Days: 365 days/yr
Emission Factor for Rated Load Capacity < 50 ton

PM Emissions

Emission Factor: 13.90 lbs/VMT (AP-42 Chapter 13.2.2, 11/2006 - controlled)
Calculations: 13.90 lbs/VMT * 5 VMT/day = 69.50 lb/day

PM_{10} Emissions

Emission Factor: 3.95 lbs/VMT (AP-42 Chapter 13.2.2, 11/2006 - controlled)
Calculations: 3.95 lbs/VMT * 5 VMT/day = 19.75 lb/day

WINTER SEASON (OCTOBER 1 – MARCH 31)

Source	lb/day					
	PM	PM_{10}	NO_x	VOC	CO	SO_x
1994 Ken Kue Jaw Crusher (400 TPH)	2.88	1.30	--	--	--	--
1995 Nordberg Cone Crusher (400 TPH)	2.88	1.30	--	--	--	--
1997 Nordberg Cone Crusher (300 TPH)	2.16	0.97	--	--	--	--
1994 EL-Jay Cedar Rapids Screen (700 TPH)	9.24	3.11	--	--	--	--
1993 EL-Jay two-Deck Screen (400 TPH)	5.28	1.78	--	--	--	--
Material Transfer	12.01	3.95	--	--	--	--
Pile Forming	63.76	30.29	--	--	--	--
Bulk Loading	1.32	1.32	--	--	--	--
Diesel Generator (176 hp)	2.32	2.32	32.74	2.65	7.05	2.16
Diesel Generator (1766 hp)	23.31	23.31	328.48	26.60	70.78	21.72
Haul Roads	17.38	4.94	--	--	--	--
Total	142.54	74.59	361.22	29.25	77.83	23.88

Note:
Knife River is restricted to maintain PM_{10} emissions below modeling threshold of 82 lb/day.

Diesel Generator (176 hp)

Operating Parameters

Operating Hours: 6.0 hr/day
Engine Size: 176 hp

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 * 176 hp * 6 hr/day = 2.32 lb/day

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 * 176 hp * 6.0 hr/day = 2.32 lb/day

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 * 176 hp * 6.0 hr/day = 32.74 lb/day

VOC Emissions

Emission Factor: 0.00251 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel - 10/96)
Calculations: 0.00251 lb/hp-hr * 176 hp * 6.0 hrs/day = 2.65 lb/day

CO Emissions

Emission Factor: 0.00668 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel - 10/96)
Calculations: 0.00668 lb/hp-hr * 176 hp * 6.0 hr/day = 7.05 lb/day

SO_x Emissions
Emission Factor: 0.00205 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel - 10/96)
Calculations: 0.00205 lb/hp-hr * 176 hp * 6.0 hr/day = 2.16 lb/day

Diesel Generator (1766 hp)

Operating Parameters
Operating Hours: 6.0 hr/day
Engine Size: 1766 hp

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 * 1766 hp * 6.0 hr/day = 23.31 lb/day

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 * 1766 hp * 6.0 hr/day = 23.31 lb/day

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 * 1766 hp * 6 hr/day = 328.48 lb/day

VOC Emissions
Emission Factor: 0.00251 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel - 10/96)
Calculations: 0.00251 lb/hp-hr * 1766 hp * 6.0 hr/day = 26.60 lb/day

CO Emissions
Emission Factor: 0.00668 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel - 10/96)
Calculations: 0.00668 lb/hp-hr * 1766 hp * 6.0 hr/day = 70.78 lb/day

SO_x Emissions
Emission Factor: 0.00205 lb/hp-hr (AP-42, Section 3.3, Table 3.3-1, diesel fuel - 10/96)
Calculations: 0.00205 lb/hp-hr * 1766 hp * 6.0 hr/day = 21.72 lb/day

1994 Ken Kue Jaw Crusher (400 hp)

Operating Parameters
Operating Hours: 6.0 hr/day
Engine Size: 400 hp

PM Emissions
Emission Factor: 0.0012 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.0012 lb/hp-hr * 400 hp * 6.0 hr/day = 2.88 lb/day

PM_{10} Emissions
Emission Factor: 0.00054 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.00054 lb/hp-hr * 400 hp * 6.0 hr/day = 1.30 hr/day

1995 Nordberg Cone Crusher (400 hp)

Operating Parameters
Operating Hours: 6.0 hr/day
Engine Size: 400 hp

PM Emissions
Emission Factor: 0.0012 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)

Calculations: 0.0012 lb/hp-hr * 400 hp * 6.0 hr/day = 2.88 lb/day

PM_{10} Emissions
Emission Factor: 0.00054 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.00054 lb/hp-hr * 400 hp * 6.0 hr/day = 1.30 lb/day

1997 Nordberg Cone Crusher (300 hp)

Operating Parameters
Operating Hours: 6.0 hr/day
Engine Size: 300 hp

PM Emissions
Emission Factor: 0.0012 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.0012 lb/hp-hr * 300 hp * 6.0 hr/day = 2.16 lb/day

PM_{10} Emissions
Emission Factor: 0.00054 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.00054 lb/hp-hr * 300 hp * 6.0 hr/day = 0.97 lb/day

1994 6'x14' El Jay Cedar Rapids Screen (700 hp)

Operating Parameters
Operating Hours: 6.0 hr/day
Engine Size: 700 hp

PM Emissions
Emission Factor: 0.0022 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.0022 lb/hp-hr * 700 hp * 6.0 hr/day = 9.24 lb/day

PM_{10} Emissions
Emission Factor: 0.00074 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.00074 lb/hp-hr * 700 hp * 6.0 hr/day = 3.11 lb/day

1993 8'x20' El Jay Two-Deck Screen (400 hp)

Operating Parameters
Operating Hours: 6.0 hr/yr
Engine Size: 400 hp

PM Emissions
Emission Factor: 0.0022 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.0022 lb/hp-hr * 400 hp * 6.0 hr/day = 5.28 lb/day

PM_{10} Emissions
Emission Factor: 0.00074 lb/hp-hr (AP-42 Table 11.19.2-2, 8/2004 - controlled)
Calculations: 0.00074 lb/hp-hr * 400 hp * 6.0 hr/day = 1.78 lb/day

Bulk Loading

Operating Parameters

Maximum Process Rate:	1100 ton/hr
Hours of Operation:	6.0 hr/day
Number of Loads:	2 load(s)

PM Emissions

Emission Factor: 1.00E-04 lbs/ton (AP-42, Table 11.19.2-2, 08/2004 – controlled)

Calculations: 0.0001 lbs/ton * 1100 tons/hr * 6.0 hr/day * 2 load(s) = 1.32 lb/day

PM_{10} Emissions

Emission Factor: 1.00E-04 lbs/ton (AP-42, Table 11.19.2-2, 08/2004 – controlled)

Calculations: 0.0001 lbs/ton * 1100 tons/hr * 6.0 hr/day * 2 load(s) = 1.32 lb/day

Material Transfer

Operating Parameters

Maximum Process Rate:	1100 ton/hr
Hours of Operation:	6.0 hr/day
Number of Loads:	13 transfer(s)

PM Emissions

Emission Factor: 0.00014 lbs/ton (AP-42 Table 11.19.2-2, 8/2004 - controlled)

Calculations: 0.00014 lbs/ton * 1100 tons/hr * 6.0 hr/day * 13 transfer(s) = 12.01 lb/day

PM_{10} Emissions

Emission Factor: 0.00014 lbs/ton (AP-42, Table 11.19.2-2, 08/2004 – controlled)

Calculations: 0.000046 lbs/ton * 1100 tons/hr * 6.0 hr/day * 13 transfer(s) = 3.95 lb/day

Pile Forming

Operating Parameters

Maximum Process Rate:	1100 ton/hr
Hours of Operation:	6.0 hr/day
Number of Loads:	3 pile(s)

PM Emissions

Emission Factor: 0.00322 lbs/ton (AP-42 Section 13.2.4.3, 11/2006 - controlled)

Calculations: 0.00322 lbs/ton * 1100 tons/hr * 6.0 hrs/day * 3 pile(s) = 63.76 lb/day

PM_{10} Emissions

Emission Factor: 0.00153 lbs/ton (AP-42 Section 13.2.4.3, 11/2006 - controlled)

Calculations: 0.00153 lbs/ton * 1100 tons/hr * 6.0 hr/day * 3 pile(s) = 30.29 lb/day

Predictive Equations for Storage Piles (AP-42, Section 13.2.4.3 and Table 13.2.4-4)

$$E = k * (0.0032) * (U/5)^{1.3} / (M/2)^{1.4}$$

Pollutant	k	U	M	Calculated E (lb/ton)
PM	0.74	8.15	2.525	0.00322
PM_{10}	0.35	8.15	2.525	0.00153

k from table on page 13.2.4-4

U, M averages of values from table on page 13.2.4-4

U = mean wind speed (mph)

M = moisture content

PM = < 30 microns

Haul Roads

Operating Parameters

Vehicle Miles Traveled (est. restricted to 6 hrs)	1.25 VMT/day
Number of Operating Days:	365 days/yr
Emission Factor for Rated Load Capacity < 50 ton	

PM Emissions

Emission Factor: 13.90 lbs/VMT (AP-42 Chapter 13.2.2, 11/2006 - controlled)

Calculations: 13.90 lbs/VMT * 1.25 VMT/day = 17.38 lb/day

PM_{10} Emissions

Emission Factor: 3.95 lbs/VMT (AP-42 Chapter 13.2.2, 11/2006 - controlled)

Calculations: 3.95 lbs/VMT * 1.25 VMT/day = 4.94 lb/day

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

Permit # 2978-05 and Addendum 3 are for a portable crushing/screening plant that will locate at sites in or within 10 kilometers (km) of certain PM_{10} nonattainment areas (NAA). The more stringent operating conditions contained in the Addendum will minimize any potential impact on the NAAs 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.

VIII. Air Quality Impacts

Permit #2978-05 and Addendum 3 will cover the operations of this portable crushing/screening plant while operating at any location within Montana, excluding those counties that have a Department-approved permitting program and those areas considered tribal lands.

Addendum 3 will cover the operations of this portable crushing/screening plant, while operating in or within 10 km of the NW ¼ of Section 22, Township 29 North, Range 1 West (Mohl Pit), located in Flathead County, Montana, and the NE ¼ of the SW ¼ of Section 23, Township 30 North, Range 21 West (Hodgeson Pit), located in Flathead County, Montana, PM_{10} NAAs during the winter season (October 1 through March 31). Additionally, during the summer season (April 1 – September 30), this facility will be allowed to operate in or within 10 km of the Butte, Columbia Falls, Kalispell, Libby, Thompson Falls and Whitefish PM_{10} NAAs.

IX. Taking or Damaging Implication Analysis

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

X. 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: K. Doran
Date: 09/22/08