

1 BEFORE THE BOARD OF HEALTH AND ENVIRONMENTAL SCIENCES
2 OF THE STATE OF MONTANA

3 In the Matter of Compliance of)
4 Flathead Road Department,)
5 Kalispell, Montana, with 40 CFR) STIPULATION
6 50.6, National Ambient Air)
7 Quality Standard for Particulate)
8 Matter and ARM 16.8.821, Montana)
9 Ambient Air Quality Standard for)
10 PM-10)

11 The Department of Health and Environmental Sciences
12 ("Department"), and Flathead Road Department ("Flathead
13 Co."), hereby stipulate and agree to all the following Para-
14 graphs 1-18 inclusive, including the exhibits as referenced
15 below, in regard to the above-captioned matter and present
16 the same for consideration and adoption by the Board of
17 Health and Environmental Sciences ("Board"):

18 A. BACKGROUND:

19 1. On July 1, 1987, the United States Environmental
20 Protection Agency ("EPA") promulgated national ambient air
21 quality standards for particulate matter, (measured in the
22 ambient air as PM-10, or particles with an aerodynamic diame-
23 ter less than or equal to a nominal 10 micrometers) ("partic-
24 ulate matter NAAQS"). The annual standard of 50 micrograms
25 per cubic meter (annual arithmetic mean), and the 24-hour
26 standard of 150 micrograms per cubic meter (24-hour average
27 concentration), were promulgated by EPA pursuant to Section
109 of the Federal Clean Air Act, 42 U.S.C. 7401, et seq., as

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1 amended by the Clean Air Act Amendments of 1990 ("Act").
2 2. Section 110 of the Act requires each state to sub-
3 mit an implementation plan for the control of each air pol-
4 lutant for which a national ambient air quality standard has
5 been promulgated. Since a standard has been promulgated for
6 particulate matter, the State of Montana is required to sub-
7 mit an implementation plan for particulate matter to EPA.
8 3. Section 75-2-202, MCA, requires the Board to estab-
9 lish ambient air quality standards for the state. Sections
10 75-2-111(3) and 75-2-401, MCA, empower the Board to issue
11 orders upon a hearing before the Board concerning compliance
12 with national and state ambient air quality standards.
13 4. On April 29, 1988, the Board adopted state ambient
14 air quality standards for PM-10, including an annual standard
15 of 50 micrograms per cubic meter (annual arithmetic mean),
16 and a 24-hour standard of 150 micrograms per cubic meter (24-
17 hour average concentration). ARM,16.8.821 ("PM-10 MAAQS").
18 5. On August 7, 1987, the Kalispell area was designat-
19 ed as a Group I area by EPA. 52 Fed. Reg. 29383. Pursuant
20 to the Federal Clean Air Act of all Group I areas, including
21 Kalispell, are designated by operation of law to be in non-
22 attainment for the particulate matter NAAQS. 42 U.S.C.
23 7407(d)(4)(B), as amended. Further, the Act designated the
24 Kalispell area as a "moderate" PM-10 nonattainment area. 42
25 U.S.C. 7513(a), as amended. For areas designated as "moder-
26 ate", the state was required to submit to EPA an implementa-
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1 tion plan no later than one year from enactment of November
2 15, 1990 amendments to the Act. 42 U.S.C. 7513a(a)(2). The
3 area encompassed in the moderate nonattainment designation
4 (hereafter "Kalispell nonattainment area") generally includes
5 the City of Kalispell and that portion of Flathead County
6 within the vicinity of the boundaries of the City of Kali-
7 spell. A map of the Kalispell nonattainment area is attached
8 to the Stipulation as Exhibit A and by this reference is
9 incorporated herein in its entirety as part of this document.

10 6. Results of air quality sampling and monitoring from
11 1986 through 1991 have demonstrated violations within the
12 Kalispell nonattainment area of the 24-hour standard con-
13 tained in both the particulate matter NAAQS and the PM-10
14 MAAQS.

15 7. On November 25, 1991, Governor Stephens submitted
16 to EPA an implementation plan for Kalispell, Montana, demon-
17 strating attainment of the particulate matter NAAQS. The
18 implementation plan relied upon the receptor modeling tech-
19 nique known as chemical mass balance (CMB) to identify the
20 major emission sources contributing to noncompliance. The
21 implementation plan consisted of an emission control plan
22 that controlled fugitive dusts emissions from roads, parking
23 lots, construction and demolition project, and barren ground.

24 8. On April 29, 1992, EPA notified Governor Stephens
25 that the Kalispell implementation plan could be conditionally
26 approved if certain deficiencies were corrected. A major
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1 deficiency identified by EPA was that the emission limita-
2 tions set for industrial sources (or in some cases for indus-
3 trial sources where there was no emission limitation set at
4 all) could result in significant emission increases above the
5 emission levels occurring during the source apportionment
6 modeling study (CMB). Furthermore, such potential emissions
7 increases were not accounted for in the particulate matter
8 NAAQS demonstration of attainment.

9 9. On June 15, 1992, Governor Stephens submitted a
10 letter to EPA committing to additional analysis utilizing
11 dispersion modeling technique on the Kalispell area industri-
12 al sources. If the dispersion modeling indicated that a
13 source significantly impacted the nonattainment area, the
14 Governor further committed to developing new emission limita-
15 tions on the Kalispell area industrial sources which would
16 demonstrate attainment of the particulate matter NAAQS.

17 10. The department has determined that emission limita-
18 tions applicable to Flathead Co. were in some cases nonexis-
19 tent (no permit requirements) or significantly higher than
20 actual emissions during the CMB modeling study.

21 11. Dispersion modeling analysis has been conducted by
22 the department for the Kalispell nonattainment area. The
23 dispersion modeling incorporates the allowable emission rates
24 from the sources of PM-10 emissions in the Kalispell non-
25 attainment area to determine the extent of their respective
26 contributions to the ambient levels of PM-10. Based upon the

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1 results of this modeling, the PM-10 emissions from Flathead
2 Co. were identified as a significant contributor to ambient
3 levels of PM-10 in the Kalispell nonattainment area. Fur-
4 thermore, both parties agree that based upon these modeling
5 results, revised emission limitation for Flathead Co. are
6 necessary to demonstrate compliance with the particulate
7 matter NAAQS. The department has performed additional model-
8 ing using revised emission rates for Flathead Co. and other
9 sources in the Kalispell area to determine the level of emis-
10 sions which achieves the particulate matter NAAQS. Based
11 upon these modeling results, both parties agree that revised
12 emission limitation must be imposed upon Flathead Co.

13

14 B. BINDING EFFECT

15 12. The parties to this Stipulation agree that any such
16 emission limitations placed on Flathead Co. must be enforce-
17 able by both the department and EPA. To this end, the par-
18 ties have negotiated specific limitations and conditions that
19 are to be applicable to Flathead Co. The specific conditions
20 which comprise these limitations are contained in Exhibit B
21 to this Stipulation (entitled "Emission Limitations and Con-
22 ditions, Flathead Road Department") which is attached hereto
23 and by this reference is incorporated herein in its entirety
24 as part of this document.

25 13. Both parties understand and agree that if EPA finds
26 the Kalispell implementation plan incomplete or disapproves
27

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1 it or if future violations of the particulate matter NAAQS or
2 PM-10 standard MAAQS occur, this Stipulation may be renegoti-
3 ated and made enforceable through an associated Board Order
4 or simply superseded by a subsequent order of the Board upon
5 notice of hearing.

6 14. The Board is the state agency that is primarily
7 responsible for the development and implementation of the
8 State Implementation Plan under the Federal Clean Air Act.
9 Under Sections 75-2-101, et seq., the Board is required to
10 protect public health and welfare by limiting the levels and
11 concentrations of air pollutants within the state and such
12 responsibility includes the adoption of emission standards
13 (Section 75-2-203, MCA) and the issuance of orders (Sections
14 75-2-111(3), 75-2-401, MCA) to effectuate compliance with
15 national and state ambient air quality standards.

16 15. The parties to this Stipulation agree that upon
17 finding the limitations and conditions contained in Exhibit B
18 to this Stipulation to be necessary for the Kalispell non-
19 attainment area to meet the particulate matter NAAQS and the
20 PM-10 MAAQS, the Board has jurisdiction to require the impo-
21 sition of such limitations and conditions, and may adopt the
22 same as enforceable measures applicable to Flathead Co.

23 16. The conditions and limitations contained in Exhibit
24 B to this Stipulation are consistent with the provisions of
25 the Montana Clean Air Act, Title 75, Chapter 2, MCA, and
26 rules promulgated pursuant to statute.

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1 17. Any obligations in this stipulation and attached
2 Exhibit B that are more stringent than conditions set forth
3 in the permit issued to the air source/party to this agree-
4 ment (if issued), supersede the less stringent permit condi-
5 tions.

6 18. Accordingly, the parties to this Stipulation agree
7 that it would be consistent with the terms and intent of this
8 Stipulation for the Board to issue an Order which requires
9 the imposition of the terms in this Stipulation and the limi-
10 tations and conditions contained in Exhibit B of this Stipu-
11 lation, and adopts the same as enforceable measures applica-
12 ble to Flathead Co.

13
14 FLATHEAD ROAD DEPARTMENT

MONTANA DEPARTMENT OF
HEALTH AND ENVIRONMENTAL
SCIENCES

15
16 BY [Signature]

16 BY [Signature]
17 Robert J. Robinson
18 Director

18
19 BY [Signature]
20 Attorney

18
19 BY [Signature]
20 Timothy R. Baker
21 Attorney

21 DATE 8-25-93

21 DATE 9/15/93

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EXHIBIT B
EMISSION LIMITATIONS AND CONDITIONS

Flathead County Road Department
P.O. Box 1102
Kalispell, MT 59902-1102

The above-named company is hereinafter referred to as "Flathead Co."

Section I: Affected Facilities

- A. Equipment: A portable 1973 Pioneer Duplex Model 50VE crusher (100 TPH), Serial #303R-P-122 and a gravel screen.
- B. Original Location: Four Corners Pit (N½, Sec 29, T28N, R21W, Flathead County).

Section II: Conditions

- A. Operational
 - 1. All visible emissions from the crusher plant are limited to 20% opacity¹. (ARM 16.8.1404)
 - 2. Flathead Co. shall not cause or authorize to be discharged into the atmosphere from other equipment such as screens or transfer points any visible emissions that exhibit opacity¹ of 20%. (ARM 16.8.1401)
 - 3. Flathead Co. 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 opacity¹ of 5% or greater (RACT)
 - 4. Flathead Co. 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 5% opacity¹ limitation. (RACT)
 - 5. Water spray bars are required as necessary, if fugitive emissions are greater than 20% opacity¹.
 - 6. Crusher production is limited to 100 tons/hour.
 - 7. The hours of operation of the gravel crusher is limited to 8760 hours per year.

¹ Opacity shall be determined according to 40 CFR, Part 60, Appendix A, Method 9 Visual Determination of Opacity of Emissions from Stationary Sources.

8. Total particulate emissions from this crusher in conjunction with total particulate emissions from any additional equipment at any individual site shall be less than 250 tons/year.
9. Flathead Co. shall operate and maintain all emission control equipment and utilize all techniques specified in this stipulation to provide the maximum air pollution control for which they were designed.

B. Reporting Requirements

1. If this crushing plant is moved to another location, a Notice of Intent to Transfer Location of Air Quality Permit must be published in a newspaper of general circulation in the area to which the transfer is to be made. This notice must be published at least 15 days prior to the move. Proof of publication and a change of location form must be submitted to the Montana Department of Health and Environmental Sciences, Air Quality Bureau (aqb), prior to the move. These forms are available from the aqb.
2. Flathead Co. shall maintain on-site records showing daily hours of operation and daily production rates for the last 12 months. These records shall be available for inspection by the aqb and will be submitted to the aqb upon request.
3. Flathead Co. shall retain daily production numbers for a minimum of five (5) years.
4. Annual production information shall be submitted to the aqb by March 1 of the following calendar year. The information shall include:
 - a) Tons of gravel crushed.
 - b) Tons of gravel bulk loaded.
 - c) Hours of operation of the crusher.
 - d) Gallons of diesel used for generators.
 - e) Fugitive dust information consisting of a listing of all plant vehicles including the following for each vehicle type:
 - i) Number of vehicles;
 - ii) Vehicle type;
 - iii) Vehicle weight, loaded;
 - iv) Vehicle weight, unloaded;
 - v) Number of tires on vehicle;
 - vi) Average trip length;
 - vii) Number of trips per day;
 - viii) Average vehicle speed;
 - ix) Area of activity; and
 - x) Vehicle fuel usage (gasoline or diesel) annual total.

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- f. Fugitive dust control for haul roads and general plant area:
 - i. Hours of operation of water trucks.
 - ii. Application schedule for chemical dust suppressant if applicable.
- C. The AQB may modify the conditions of this stipulation based on local conditions of any future site. These factors may include, but are not limited to, local terrain, meteorological conditions, proximity to residences, predicted ambient impacts which would cause or contribute to violations of a NAAQS or PSD increment, etc.
- D. The department may require additional emissions testing on sources of emissions per ARM 16.8.704, Testing Requirements.
- E. Flathead Co. must maintain a copy of the air quality stipulation at the Kalispell ready mix site and make that copy available for inspection by department personnel upon request.
- F. Flathead Co. shall comply with all other applicable state, federal, and local laws and regulations.

Section III: General Conditions

- A. Inspection - The recipient shall allow the department's representatives access to the source at all reasonable times for the purpose of making inspections, 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 stipulation.
- B. Compliance with Statutes and Regulations - Specific listing of requirements, limitations, and conditions contained herein does not relieve the applicant from compliance with all applicable statutes and administrative regulations including amendments thereto, nor waive the right of the department to require compliance with all applicable statutes and administrative regulations, including amendments thereto.
- C. Enforcement - Violations of limitations, conditions and requirements contained herein may constitute grounds for penalties.

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Analysis of Conditions
Flathead County Road Department

I. Introduction/Process Description

The affected facility is a portable 1973 Pioneer Duplex Model 50VE crusher (100 TPH), Serial #303R-P-122 and a gravel screen. This plant crushes gravel for use in construction, repair, and maintenance of roads and highways. The maximum process rate of the crusher is 100 tons/hour.

Flathead Co. operates three (3) gravel pits in or near the Kalispell nonattainment area. They move the Cedar Rapids gravel crusher between these pits in order to crush gravel used to produce asphalt for use in construction, repair, and maintenance of roads and highways. The Barber Greene DA 55 Hot Mix Plant is permanently located at the Steel Bridge Pit. The three gravel pit locations are:

Four Corners Pit (N½, Sec 29, T28N, R21W, Flathead County);
Sheepherders Pit (NW¼, Sec 15, T28N, R22W, Flathead County);
Steel Bridge Pit (SE¼, Sec 3, T28N, R21W, Flathead County).

If this crushing plant is moved to another location, including the Steel Bridge Pit or the Sheepherders Pit, a Notice of Intent to Transfer Location of Air Quality Stipulation must be published in a newspaper of general circulation in the area to which the transfer is to be made as required in Section II.B.1. Any such transfer will be subject to department review as described in Section II.C.

II. Applicable Rules and Regulations

A. ARM 16.8, Subchapter 8, Ambient Air Quality, including but not limited to:

ARM 16.8.821 Ambient Air Quality Standard for PM-10. This section states that no person may cause or contribute to concentrations of PM-10 in the ambient air which exceed the set standards.

B. ARM 16.8, Subchapter 9, Prevention of Significant Deterioration - This facility is not a PSD source since this facility is not a listed source and the potential to emit is below 250 tons per year of any pollutant.

C. 16.8 Subchapter 14, Emission Standards, including but not limited to:

1. ARM 16.8.1401 Particulate Matter, Airborne. This section requires reasonable precautions for fugitive emissions sources and Reasonably Available Control Technology (RACT) for existing fugitive sources located in a nonattainment area. The department, in consultation with EPA, has determined that the use of chemical stabilization or paving on major haul roads will satisfy these requirements.

2. ARM 16.8.1403 Particulate Matter, Industrial Process. This section states that no person shall cause, allow, or permit to be discharged into the outdoor atmosphere from any operation, process, or activity,

particulate matter in excess of the amount determined by using the following equation:

Allowable Emissions = $55 (100 \text{ tons/hr})^{.11} - 40 = 51.28 \text{ lbs/hr}$.
The estimated total particulate matter emissions for the gravel crusher are 14.00 lbs/hr, therefore the source is in compliance.

3. ARM 16.8.1404 Visible Air Contaminants. This section requires an opacity limitation of 20% from all stacks constructed or altered since November 23, 1968.
4. ARM 16.8.1423 Standards of Performance for New Stationary Sources (NSPS). This plant was constructed in 1973 so NSPS (40 CFR Part 60, general provisions, and Subpart 000 Non-Metallic Mineral Processing Plants) does not apply.

III. RACM/RACT Determination

Under section 189(a)(1)(C) of the amended Clean Air Act of 1990, moderate area State Implementation Plans (SIP's) must contain "reasonably available control measures" (RACM) for the control of PM-10 emissions. RACM for stationary sources is the application of reasonably available control technology (RACT). Since the Kalispell area has been designated as a nonattainment for PM-10 by EPA, RACT must be applied to those stationary sources which cause or contribute to the nonattainment area.

A. Crusher and Material Transfer Emission

A BACT analysis was conducted at the time of the original permit application #2716-00 and a determination had been made for controlling TSP and PM-10 emissions. The department has determined that BACT for this source is the application of water sprays as necessary to maintain compliance with the 20% opacity limitation. This applies to the crusher and all other equipment such as screens or transfer points in which emissions exist.

The BACT determination made for this source is considered to meet the RACT requirements since BACT is more stringent than RACT.

B. Fugitive Road Dust Emissions

RACT for fugitive road dust emissions for sources of this type has been determined by the department to be the use of water or chemical stabilization so as to maintain compliance with a 5% opacity limitation.

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IV. Emission Inventory

Portable Gravel Crusher
1973 Pioneer Duplex Model 50 VE

Source	Annual Emission Rates (Potential) *					
	TSP	PM-10	NOX	tons/year VOC	CO	SOX
1973 Pioneer Duplex Model 50 VE	61.32	10.95				
Diesel Generator	0.63	0.63	8.80	0.70	1.90	0.58
Screen	35.04	26.28				
Material Transfer	12.70	2.80				
Pile Forming: Stacker	56.94	26.28				
Bulk Loading	8.76	1.05				
Haul Roads	2.36	0.85				
Total Emissions	177.75	68.84	8.80	0.70	1.90	0.58

* Based on operating 8760 hours/year.

Source	Daily Emission Rates (Potential) **					
	TSP	PM-10	NOX	lbs/day VOC	CO	SOX
1973 Pioneer Duplex Model 50 VE	336.00	60.00				
Diesel Generator	3.43	3.43	48.24	3.84	10.42	3.19
Screen	192.00	144.00				
Material Transfer	69.60	15.36				
Pile Forming: Stacker	312.00	144.00				
Bulk Loading	48.00	5.76				
Haul Roads (Daily)	20.08	7.23				
Total Emissions	981.11	379.78	48.24	3.84	10.42	3.19

** Based on operating 24 hours/day.

1973 Pioneer Duplex Model 50 VE

Process Rate: 100 tons/hr (Maximum Process Rate)
Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.28 lbs/ton (AP-42, 8.19.2-1)
Control Efficiency: 50% (Water Spray Bars or Naturally Wet Material)
Calculations: 0.28 lbs/ton * 100 tons/hr = 28.00 lbs/hr
28.00 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 122.64 tons/yr
122.64 tons/yr * (1.00 - 0.50) = 61.32 tons/yr

PM-10 Emissions:

Emission Factor: 0.05 lbs/ton (Ratio between TSP & PM-10 from AFSSCC)
Control Efficiency: 50% (Water Spray Bars or Naturally Wet Material)
Calculations: 0.050 lbs/ton * 100 tons/hr = 5.00 lbs/hr
5.00 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 21.90 tons/yr
21.90 tons/yr * (1.00 - 0.50) = 10.95 tons/yr

Diesel Generator

Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.143 lbs/hr (AP-42, 3.3.2)
Calculations: 0.143 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 0.63 tons/yr

PM-10 Emissions:

Emission Factor: 0.143 lbs/hr (AP-42, 3.3.2)
Calculations: $0.143 \text{ lbs/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 0.63 \text{ tons/yr}$

NOx Emissions:

Emission Factor: 2.01 lbs/hr (AP-42, 3.3.2)
Calculations: $2.01 \text{ lbs/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 8.80 \text{ tons/yr}$

VOC Emissions:

Emission Factor: 0.160 lbs/hr (AP-42, 3.3.2)
Calculations: $0.160 \text{ lbs/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 0.70 \text{ tons/yr}$

CO Emissions:

Emission Factor: 0.434 lbs/hr (AP-42, 3.3.2)
Calculations: $0.434 \text{ lbs/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 1.90 \text{ tons/yr}$

SOx Emissions:

Emission Factor: 0.133 lbs/hr (AP-42, 3.3.2)
Calculations: $0.133 \text{ lbs/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 0.58 \text{ tons/yr}$

Screen

Process Rate: 100 tons/hr (Maximum Process Rate)
Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.16 lbs/ton (AP-42, 8.19.1-1)
Control Efficiency: 50% (Water Spray Bars or Naturally Wet Material)
Calculations: $0.16 \text{ lbs/ton} * 100 \text{ tons/hr} = 16.00 \text{ lbs/hr}$
 $16.00 \text{ lbs/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 70.08 \text{ tons/yr}$
 $70.08 \text{ tons/yr} * (1.00 - 0.50) = 35.04 \text{ tons/yr}$

PM-10 Emissions:

Emission Factor: 0.12 lbs/ton (AP-42, 8.19.1-1)
Control Efficiency: 50% (Water Spray Bars or Naturally Wet Material)
Calculations: $0.120 \text{ lbs/ton} * 100 \text{ tons/hr} = 12.00 \text{ lbs/hr}$
 $12.00 \text{ lbs/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 52.56 \text{ tons/yr}$
 $52.56 \text{ tons/yr} * (1.00 - 0.50) = 26.28 \text{ tons/yr}$

Material Transfer

Process Rate: 100 tons/hr (Maximum Process Rate)
Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.029 lbs/ton (AFSSCC, 3-05-025-03)
Control Efficiency: 0%
Calculations: $0.03 \text{ lbs/ton} * 100 \text{ tons/hr} = 2.90 \text{ lbs/hr}$
 $2.90 \text{ lbs/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 12.702 \text{ tons/yr}$
 $12.70 \text{ tons/yr} * (1.00 - 0.00) = 12.70 \text{ tons/yr}$

PM-10 Emissions:

Emission Factor: 0.0064 lbs/ton (AFSSCC, 3-05-025-03)
Control Efficiency: 0%
Calculations: $0.006 \text{ lbs/ton} * 100 \text{ tons/hr} = 0.64 \text{ lbs/hr}$
 $0.64 \text{ lbs/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ tons/lb} = 2.80 \text{ tons/yr}$
 $2.80 \text{ tons/yr} * (1.00 - 0.00) = 2.80 \text{ tons/yr}$

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Pile Forming: Stacker

Process Rate: 100 tons/hr (Maximum Process Rate)
Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.13 lbs/ton (AFSSCC, 3-05-025-05)
Control Efficiency: 0%
Calculations: 0.13 lbs/ton * 100 tons/hr = 13.00 lbs/hr
13.00 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 56.94 tons/yr
56.94 tons/yr * (1.00 - 0.00) = 56.94 tons/yr

PM-10 Emissions:

Emission Factor: 0.06 lbs/ton (AFSSCC, 3-05-025-05)
Control Efficiency: 0%
Calculations: 0.06 lbs/ton * 100 tons/hr = 6.00 lbs/hr
6.00 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 26.28 tons/yr
26.28 tons/yr * (1.00 - 0.00) = 26.28 tons/yr

Bulk Loading

Process Rate: 100 tons/hr (Maximum Process Rate)
Hours of operation: 8760 hr/yr

TSP Emissions:

Emission Factor: 0.02 lbs/ton (AFSSCC, 3-05-025-06)
Control Efficiency: 0%
Calculations: 0.02 lbs/ton * 100 tons/hr = 2.00 lbs/hr
2.00 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 8.76 tons/yr
8.76 tons/yr * (1.00 - 0.00) = 8.76 tons/yr

PM-10 Emissions:

Emission Factor: 0.0024 lbs/ton (AFSSCC, 3-05-025-06)
Control Efficiency: 0%
Calculations: 0.0024 lbs/ton * 100 tons/hr = 0.24 lbs/hr
0.24 lbs/hr * 8760 hr/yr * 0.0005 tons/lb = 1.05 tons/yr
1.05 tons/yr * (1.00 - 0.00) = 1.05 tons/yr

Haul Roads

Operating Hours: 8760 Hours/Yr
Vehicle Miles Traveled: 2074 VMT/Yr (Based on Maximum Process Rate)
Control Efficiency is 50% for watering.

TSP Emission Factor is determined by the following equation:

$$E = 5.9 * k * (s/12) * (S/30) * (W/3) * 0.7 * (w/4) * 0.5 * PR$$

Where:

E = TSP Emission Factor in Lbs/Vehicle Mile Traveled (VMT) 1.0
k = Particle sizing constant for TSP 8.7 %
s = Silt Content in percent 10.0 mph
S = Average Speed of vehicles in mph 18.0 Tons
W = Average weight of vehicles in Tons 8 wheels
w = Average number of wheels on vehicles

PR = Precipitation Ratio based on the following:

130 Days with more than .01" of Precipitation
PR = (365 days - 130 days) / 365 Days = 0.6438

TSP Emissions:

TSP Emission Factor: 4.55 Lbs/VMT

E(TSP) = (2074 VMT/Yr)(4.55 Lbs/VMT)(0.5)
E(TSP) = 4719 Lbs/Yr or 2.36 Tons/Yr

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PM10 Emission Factor is determined by the following equation:

$$E = 5.9 * k * (s/12) * (S/30) * (W/3) ** 0.7 * (w/4) ** 0.5 * PR$$

Where:

E = PM10 Emission Factor in Lbs/Vehicle Mile Traveled (VMT) 0.36
k = Particle sizing constant for PM10 8.7 %
s = Silt Content in percent 10.0 mph
S = Average Speed of vehicles in mph 12.0 Tons
W = Average weight of vehicles in Tons 8 wheels
w = Average number of wheels on vehicles

PR = Precipitation Ratio based on the following:

130 Days with more than .01" of Precipitation
PR = (365 days - 130 days) / 365 Days = 0.6438

PM10 Emissions:

PM10 Emission Factor: 1.64 Lbs/VMT

$$E(\text{PM10}) = (2074 \text{ VMT/Yr}) * (1.64 \text{ Lbs/VMT}) * (0.5)$$
$$E(\text{PM10}) = 1699 \text{ Lbs/Yr or } 0.85 \text{ Tons/Yr}$$

Haul Roads (Daily)

Operating Hours: 8760 Hours/Yr
Vehicle Miles Traveled: 2074 VMT/Yr (Based on Maximum Process Rate)
Control Efficiency is 50% for watering.

TSP Emission Factor is determined by the following equation:

$$E = 5.9 * k * (s/12) * (S/30) * (W/3) ** 0.7 * (w/4) ** 0.5 * PR$$

Where:

E = TSP Emission Factor in Lbs/Vehicle Mile Traveled (VMT)
k = Particle sizing constant for TSP 1.0
s = Silt Content in percent 8.7 %
S = Average Speed of vehicles in mph 10.0 mph
W = Average weight of vehicles in Tons 12.0 Tons
w = Average number of wheels on vehicles 8 wheels
PR = Assumes no precipitation 1.0000

TSP Emissions:

TSP Emission Factor: 7.07 Lbs/VMT

$$E(\text{TSP}) = (2074 \text{ VMT/Yr}) * (7.07 \text{ Lbs/VMT}) * (0.5)$$
$$E(\text{TSP}) = 7329 \text{ Lbs/Yr or } 3.66 \text{ Tons/Yr or } 20.08 \text{ lbs/day}$$

PM10 Emission Factor is determined by the following equation:

$$E = 5.9 * k * (s/12) * (S/30) * (W/3) ** 0.7 * (w/4) ** 0.5 * PR$$

Where:

E = PM10 Emission Factor in Lbs/Vehicle Mile Traveled (VMT)
k = Particle sizing constant for PM10 0.36
s = Silt Content in percent 8.7 %
S = Average Speed of vehicles in mph 10.0 mph
W = Average weight of vehicles in Tons 12.0 Tons
w = Average number of wheels on vehicles 8 wheels
PR = Assumes no precipitation 1.0000

PM10 Emissions:

PM10 Emission Factor: 2.54 Lbs/VMT

$$E(\text{PM10}) = (2074 \text{ VMT/Yr}) * (2.54 \text{ Lbs/VMT}) * (0.5)$$
$$E(\text{PM10}) = 2639 \text{ Lbs/Yr or } 1.32 \text{ Tons/Yr or } 7.23 \text{ lbs/day}$$

V. Existing Air Quality and Impacts

On July 1, 1987 the Environmental Protection Agency (EPA) promulgated new National Ambient Air Quality Standards (NAAQS) for particulate matter with an aerodynamic diameter of 10 microns or less (PM-10). Due to exceedances of the national standards for PM-10, the city of Kalispell and the nearby Evergreen area have been designated by EPA as nonattainment for PM-10. As a result of this designation, EPA required the Department of Health and Environmental Sciences and the Flathead City-County Health Department to submit the Kalispell PM-10 State Implementation Plan (SIP) to EPA in November, 1991. The SIP consisted of an emission control plan that controlled fugitive dust emissions from roads, parking lots, construction, and demolition, since technical studies determined these sources to be the major contributors of PM-10 emissions.

Receptor modeling (a model which identifies contributors based on actual area and industrial emissions and ambient data) was originally used to demonstrate attainment of the federal PM-10 standards in the SIP. The EPA is now requiring the department to use a dispersion model (a model which incorporates allowable emission rates from facilities) to assure that attainment can still be demonstrated if individual sources are operating at their maximum allowable emission rates.

After an analysis, the department determined that emission limitations applicable to the Flathead Co. facility were in some cases nonexistent (no permit required) or several times higher than actual emissions (ARM 16.8.1403). Dispersion modelling conducted using emissions from the Flathead Co. facility at its potential to emit (emissions associated with maximum design capacity or as limited by ARM 16.8.1403) indicated that the facility contributed significantly to the PM-10 concentrations in the Kalispell nonattainment area.

In order to demonstrate compliance (through dispersion modeling) with the PM-10 NAAQS in the Kalispell nonattainment area it is necessary to reduce or establish new emission limitations for the Flathead Co. facility. The new emission limitations in this document, in conjunction with similar limitations on other Kalispell area facilities, demonstrates through dispersion modeling that compliance with the NAAQS for PM-10 will be attained. These reductions in allowable emissions will be enforced through a signed stipulation.

With the proper utilization of existing control equipment and reasonable control techniques (watering or application of dust suppressant) for haul road dust the Flathead Co. facility should be able to operate at maximum design rates and remain in compliance with the stipulated emission limitations.

Kalispell and Evergreen Nonattainment Boundaries

The area is bounded by lines from UTM Coordinate 700000mE, 5347000mN, east to 704000mE, 5346000mN, south to 704000mE, 5341000mN, west to 703000mE, 5341000mN, south to 703000mE, 5340000mN, west to 702000mE, 5340000mN, south to 702000mE, 5339000mN, east to 703000mE, 5339000N, south to 703000mE, 5338000mN, east to 704000mE, 5338000mN, south to 704000mE, 5336000mN, west to 702000mE, 5336000mN, west to 702000mE, 5336000mN, south to 702000mE, 5335000mN, west to 700000mE, 5335000mN, north to 700000mE, 5340000mN, west to 695000mE, 5340000mN, north to 695000mE, 5345000mN, east to 700000mE, 5345000mN, north to 700000mE, 5347000mN.

VI. Environmental Assessment

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

Volume II
Chapter 15

STATE OF MONTANA
AIR QUALITY CONTROL
IMPLEMENTATION PLAN

Subject: Flathead County
Air Quality Control
Program

DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
Air Quality Bureau
Cogswell Building, Helena, Montana 59620
(406) 444-3454

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Project or Application: Flathead County Road Department, Air Quality Stipulation for Kalispell SIP.

Description of Project: This stipulation is for the operation of a portable 1973 Pioneer Duplex Model 50VE crusher (100 TPH), Serial #303R-P-122 and a gravel screen. This plant crushes gravel for use in construction, repair, and maintenance of roads and highways.

Benefits and Purpose of Proposal: On July 1, 1987 the Environmental Protection Agency (EPA) promulgated new National Ambient Air Quality Standards (NAAQS) for particulate matter with an aerodynamic diameter of 10 microns or less (PM-10). Due to exceedances of the national standards for PM-10, the city of Kalispell and the nearby Evergreen area have been designated by EPA as nonattainment for PM-10. As a result of this designation, EPA required the Department of Health and Environmental Sciences and the Flathead City-County Health Department to submit the Kalispell PM-10 State Implementation Plan (SIP) to EPA in November, 1991. The stipulation identifies the emission sources and makes enforceable emission limitations and the operation of control equipment and techniques which when considered with similar limitations on other Kalispell area sources will achieve the PM-10 NAAQS.

Description and analysis of reasonable alternatives whenever alternatives are reasonably available and prudent to consider: No reasonable alternatives available.

A listing and appropriate evaluation of mitigation, stipulations and other controls enforceable by the agency or another government agency: A list of enforceable conditions and an analysis of conditions are contained in a signed stipulation.

Recommendation: No EIS is required.

If an EIS is needed, and if appropriate, explain the reasons for preparing the EA:

If an EIS is not required, explain why the EA is an appropriate level of analysis: The emissions from this plant will not change. This action makes the control equipment, control techniques, and limitations on operating hours at the plant enforceable and assures that the emissions from this facility when considered with similar emission limitations at other sources will attain the PM-10 NAAQS.

Other groups or agencies contacted or which may have overlapping jurisdiction: None

Individuals or groups contributing to this EA: Department of Health and Environmental Sciences, Air Quality Bureau.

EA prepared by: Michael Glavin

Date: July 22, 1993

Replaces Pages:
September 10, 1993

Dated

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Potential Impact on Physical Environment

		Major	Moderate	Minor	None	Unknown	Comments Attached
1	Terrestrial and Aquatic Life and Habitats				X		
2	Water Quality, Quantity and Distribution				X		
3	Geology and Soil Quality, Stability and Moisture				X		
4	Vegetation Cover, Quantity and Quality				X		
5	Aesthetics				X		
6	Air Quality			X			
7	Unique Endangered, Fragile or Limited Environmental Resource					X	
8	Demands on Environmental Resource of Water, Air and Energy				X		
9	Historical and Archaeological Sites					X	
10	Cumulative and Secondary Impacts			X			

Potential Impact on Human Environment

		Major	Moderate	Minor	None	Unknown	Comments Attached
1	Social Structures and Mores				X		
2	Cultural Uniqueness and Diversity				X		
3	Local and State Tax Base and Tax Revenue				X		
4	Agricultural or Industrial Production				X		
5	Human Health				X		
6	Access to and Quality of Recreational and Wilderness Activities				X		
7	Quantity and Distribution of Employment				X		
8	Distribution of Population				X		
9	Demands for Government Services				X		
10	Industrial and Commercial Activity				X		
11	Locally Adopted Environmental Plans and Goals			X			
12	Cumulative and Secondary Impacts				X		

