Montana Department of Health and Environmental Sciences
Air Quality Bureau

Air Quality Permit #1749-05

Montana Resources
600 Shields Avenue
Butte, Montana 59701

January 5, 1994

Air Quality Permit

Issued to:	Montana Resources 600 Shields Avenue Butte, MT 59701	Permit #1749-05 Permit Issued: 4-1-83 Modified: 6-26-91 2nd Modification: 8-1-91 3rd Modification: 10-11-91 4th Modification: 3-20-92 5th Alteration Preliminary Determination Issued: 12-3-93 Department Determination Issued: 12-21-93 Final Permit Issued: 1-3-94

An air quality permit alteration is hereby issued to the above-named permittee, hereinafter referred to as Montana Resources, pursuant to Sections 75-2-204 and 211, MCA, as amended, and Administrative Rules of Montana (ARM) Subchapter 11, PERMIT, CONSTRUCTION AND OPERATION OF AIR CONTAMINANT SOURCES, ARM 16.8.1101 through 16.8.1118 as amended, for the following:

SECTION I: Permitted Facilities

A. General Description

An open pit copper and molybdenum mine, crushing facilities, milling operation and concentrator known as Montana Resources located in Butte, Montana, Township 3 North, Range 7 West, Silver Bow County.

B. Existing Equipment, Facilities and Control Equipment/Procedures:

		Control Equipment/ Procedure	% Control Efficiency
1.	Ore and Waste Removal and Handling		
a.	Drills	Water Sprays and Mechanical Deflectors	50%
b.	Blasting	Reduce Overshoot	0%
c.	Ore & Waste Removal Fugitive Dust		
	1) Loaders, Dozers, Shovels	Minimize Drop Height	0%
	2) Haul Roads	Watering & Chemical Stabilization	85%
	3) Support Vehicles	Watering & Chemical Stabilization	85%
d.	Diesel Truck Tailpipe Emissions	Installation of Smaller Injectors, Intercoolers on the Turbochargers, Minimum Throttle Delay Devices,	17%
		Installation of DDEC on 11 of 15 haul trucks	31.5%
e.	Waste Dumping	Minimize Drop Height	0%
f.	Wind Erosion Exposed Mill Tailings	None	0%
g.	Wind Erosion Disturbed Area	None	0%

		Control Equipment/ Procedure	% Control Efficiency
2.	Crushing		
a.	Pri. Crusher Ore Dump	Negative Air Pressure	10%
b.	Primary Crusher	Baghouse	99%
c.	Lime Unloading	Fabric Filter	99%
d.	Coarse Ore Conveying	Hoods, Baghouse, Vac Truck	99%
e.	Coarse Ore Stockpiles	None	0%
f.	3 Secondary Crushers	6 Ducon Wet Scrubbers	99%
g.	Fine Ore Storage Bins	4 Ducon Wet Scrubbers	99%
3.	Molybdenum Dryer	Wet Scrubber	99%

SECTION II: Limitations and Conditions

A. Emission Control Requirements

Montana Resources shall install, operate and maintain the following emission control equipment and practices, and all emission control equipment and practices as specified in their Montana Air Quality Permit, subsequent revisions, and in Section I.B., Existing Equipment, Facilities and Control Equipment/Procedures.

1. Fall distance shall be minimized during transfer of topsoil, overburden, and ore and waste removal.

2. All tailings ponds shall be maintained wet to the greatest extent possible. If a violation of the 20% opacity standard is documented, installation of particulate control measures approved by the department will be required. If the conditions at the tailings pond change due to closure of the mine or an elimination of the addition of wet tailings to the tailings pond, Montana Resources must develop a long-term fugitive dust control plan for the tailings pond.

3. Drilling shall utilize water sprays and mechanical deflectors and shall be conducted in such a way as to minimize fugitive emissions.

4. Blasting shall be conducted so as to prevent overshooting.

5. All haul roads and access roads shall be treated with water, as needed, and chemical dust suppressant at least one (1) time per year, during October or November. If a violation of the 5% opacity standard is documented, more frequent applications of water and chemical dust suppressant will be required.

6. The primary crusher and primary crusher ore dump shall be equipped with a negative air pressure/baghouse system.

7. The lime storage bins shall be controlled by a fabric filter collecting system.

8. The coarse ore 3-7 transfer area shall be controlled by a baghouse.

9. The secondary crushers and fine ore storage bins shall be controlled by Ducon wet scrubbers.

10. All ore conveyors must be covered.

11. The molybdenum dryer shall be controlled by a high efficiency (99% control) wet scrubber.

12. Montana Resources shall not burn diesel fuel containing more than 0.05% sulfur by weight after December 31, 1993.

13. Montana Resources shall operate and maintain the DDEC packages on the eleven (11) haul trucks that have been converted and shall equip the remaining haul trucks with the DDEC package as soon as possible.

B. Emission Limitations

1. Montana Resources shall not cause or authorize to be discharged into the atmosphere from any facility, unless otherwise specified, any visible emissions, point or fugitive, which exhibit opacity[1] of 20% or greater. This opacity limitation applies, but is not limited to, visible emissions from drilling, blasting, and all ore and waste handling (removal, dumping, etc.).

2. Montana Resources shall not cause or authorize to be discharged into the atmosphere any visible fugitive emissions from haul roads or access roads that exhibit opacity[1] of 5% or greater.

3. Montana Resources shall not cause or authorize to be discharged into the atmosphere any visible fugitive emissions from parking lots, disturbed areas, tailings ponds, or storage piles that exhibit opacity[1] of 20% or greater.

4. Montana Resources shall not cause or authorize to be discharged into the outdoor atmosphere from the primary crusher, lime bin, or coarse ore conveying system visible emissions that exhibit an opacity[1] of 10% or greater.

5. Montana Resources shall not cause or authorize to be discharged into the outdoor atmosphere from the secondary crushers, fine ore storage bins or the molybdenum dryer, visible emissions that exhibit an opacity[1] of 15% or greater.

6. Montana Resources shall not cause or authorize to be discharged into the outdoor atmosphere from the primary crusher, coarse ore conveying system, secondary crushers, or the fine ore bins, total particulate emissions in excess of 0.05 gm/dscm.

7. Montana Resources shall implement the contingency measure for emission and production limitations within 60 days of notification by the Air Quality Bureau that the National Ambient Air Quality Standards for PM-10 have been exceeded in the Butte Silver Bow PM-10 nonattainment area.

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[1] Opacity shall be determined according to 40 CFR Part 60, Appendix A, Method 9, Visual Determination of the Opacity of Emissions from Stationary Sources. Opacity shall be determined using a six-minute average.

8. Montana Resources shall not cause or authorize to be discharged into the atmosphere particulate emissions from the following sources in excess of the following limits. These limits are based on the DDEC packages being installed on 11 of the 15 haul trucks and without the implementation of the contingency measure for Montana Resources.

a. Winter (Nov.-Feb.) seasonal emission limitations:

Emission Point	Total Particulate Tons/season	PM-10 Tons/season
Haul Trucks	932.5	335.7
Diesel Exhaust	4.6	4.6
Lime Unloading	0.2	0.1
Support Vehicles	103.2	37.1
Molybdenum Dryer	0.1	0.1
Primary Crusher Ore Dump	36.7	18.3
TOTALS (includes all sources)	2181.9	838.1

b. Summer (Mar.-Oct.) seasonal emission limitations:

Emission Point	Total Particulate Tons/season	PM-10 Tons/season
Haul Trucks	2631.6	947.4
Diesel Exhaust	26.0	26.0
Lime Unloading	0.8	0.3
Support Vehicles	428.0	154.0
Molybdenum Dryer	0.1	0.1
Primary Crusher Ore Dump	156.4	78.2
TOTALS (includes all sources)	11302.9	4336.1

c. Winter (Nov.-Feb.) daily emission limitations:

Emission Point	Total Particulate lbs/day	PM-10 lbs/day
Haul Trucks	15362.0	5530.3
Diesel Exhaust	76.3	76.3
Lime Unloading	3.2	1.3
Support Vehicles	1712.3	615.9
Molybdenum Dryer	0.1	0.1
Primary Crusher Ore Dump	615.5[2]	307.8[3]
TOTALS (includes all sources)	36018.1	3193.9

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[2]Fluctuation occurred at the Primary Crusher Ore Dump during the CMB study year and the range has been reported by MR. The average during the winter months will remain at 615.5 lbs/day of total particulate, but the maximum that may occur on any day is 753.9 lbs/day of total particulate.

[3]Fluctuation occurred at the Primary Crusher Ore Dump during the CMB study year and the range has been reported by MR. The average during the winter months will remain at 307.8 lbs/day of PM-10, but the maximum that may occur on any day is 376.9 lbs/day of PM-10.

9. In the event that the contingency measure must be implemented, Montana Resources shall not cause or authorize to be discharged into the atmosphere particulate emissions from the following sources in excess of the following limits. These limits are based on the DDEC packages being installed on 11 of the 15 haul trucks.

a. Winter (Nov.-Feb.) seasonal emission limitations:

Emission Point	Total Particulate Tons/season	PM-10 Tons/season
Haul Trucks	591.3	212.9
Diesel Exhaust	4.0[4]	4.0[4]
Lime Unloading	0.2	0.1
Support Vehicles	103.2	37.1
Molybdenum Dryer	0.1	0.1
Primary Crusher Ore Dump	28.0	14.0
TOTALS (includes all sources)	1831.4	710.4

b. Summer (Mar.-Oct.) seasonal emission limitations:

Emission Point	Total Particulate Tons/season	PM-10 Tons/season
Haul Trucks	2447.7	881.3
Diesel Exhaust	22.5[4]	22.5[4]
Lime Unloading	0.8	0.3
Support Vehicles	428.0	154.0
Molybdenum Dryer	0.1	0.1
Primary Crusher Ore Dump	151.1	75.6
TOTALS (includes all sources)	11110.2	4263.9

[4]These emissions have been reduced from the emission limitations in permit #1749-04 by 31.5% for the installation of the DDEC packages on 11 of the 15 haul trucks in addition to the 17% reduction in emissions due to the installation of the injectors, intercoolers, etc. on the haul trucks.

c. Winter (Nov.-Feb.) daily emission limitations:

Emission Point	Total Particulate lbs/day	PM-10 lbs/day
Haul Trucks	9817.0	3532.9
Diesel Exhaust	66.2	66.2
Lime Unloading	3.2	1.3
Support Vehicles	1712.3	615.9
Molybdenum Dryer	0.1	0.1
Primary Crusher Ore Dump	463.5[5]	232.4[6]
TOTALS (includes all sources)	30311.0	1111.0

d. Compliance Determination

i) Compliance with annual, seasonal, and daily emissions limits shall be determined through calculations, using annual, seasonal, and daily production information submitted by Montana Resources and representative emission rates (lbs/hr, gr/dscf, etc.) determined during the required source tests (for point sources) or emission factors (for fugitive sources).

ii) Exceedances of the production limitations or implementation of process changes or changes in air pollution control equipment or procedures which increase the emission rates, determined through the applicable emission factor, will constitute violations of the annual emission limits.

iii) Changes in the applicable emission factors or PM-10 fractions due to testing or analysis, reassessment of applicable emission factors or use of revised or updated emission factors by the department or the EPA will be reflected in changes in the allowable emission rates and compliance determinations but will not result in changes in the production limitations.

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[5]Fluctuation occurred at the Primary Crusher Ore Dump during the CMB study year and the range has been reported by MR. The average during the winter months will remain at 463.5 lbs/day of total particulate, but the maximum that may occur on any day is 571.1 lbs/day of total particulate.

[6]Fluctuation occurred at the Primary Crusher Ore Dump during the CMB study year and the range has been reported by MR. The average during the winter months will remain at 232.4 lbs/day of PM-10, but the maximum that may occur on any day is 285.6 lbs/day of PM-10.

iv) Changes in the applicable emission factors, PM-10 fractions, or emission rates due to substantive process changes or changes in air pollution control equipment or procedures will be reflected in the compliance determination.

v) Implementation of substantive process changes or changes in air pollution control equipment or procedures may require an air quality permit alteration prior to implementation or construction pursuant to ARM 16.8 Subchapter 11 Permit, Construction and Operation of Air Contaminant Sources.

vi) Emission decreases for specific emission points which stem from substantive process changes or changes in air pollution control equipment or procedures may be distributed among other emission points within the source in order to increase the overall production if the process changes or the changes in air pollution control equipment or procedures are made enforceable through inclusion as permit conditions. The production rates and emission limitations for the named emission points may not be increased unless any emission increases are offset by emission decreases from other named sources. The amount of offset required in each case shall be based on the relative ambient impact of each named source based on the Butte CMB/source apportionment study.

1) MR has installed DDEC packages on 11 of the 15 haul trucks at the mine. The installation of DDEC packages on the haul trucks resulted in a 43% decrease in diesel exhaust emissions per truck. However, since only 11 of the 15 trucks have been retrofitted at this time, the department can only credit 11/15 of 43% or a 31.5% decrease. The corresponding increase in emission and production levels are contained in Section II.B.8.a-c and Section II.C.1-3 of permit #1749-05. In addition to the production increases in permit #1749-05, a contingency measure was also added to this permit. In the event that the contingency measure has to be implemented by MR, emission and production levels will revert to the pre-DDEC levels contained in Section II.B.9.a-c and Section II.C.4-6 of permit #1749-05. Also, MR plans to retrofit the remaining four (4) haul trucks with the DDEC packages in the next 18 months to 2 years. This will result in an additional 11.5% (43%-31.5%) emission decrease which could be used for production increases elsewhere in the facility. MR will need to apply for a permit alteration requesting production increases when the remaining four (4) trucks have been retrofitted to include the DDEC package. These production increases will not be included in the contingency measure emission and production levels.

e. Emission Factors/PM-10 Fractions

The allowable emission rates for each listed fugitive emission source were calculated using the following emission factors and PM-10 fractions.

Emission Point	Emission Factor	PM-10 Fraction
Blasting	50 lb/blast	50%
Waste Removal	.01 lb/ton	50%
Ore Removal	.01 lb/ton	50%
Haul Trucks	24.7 lb/vmt	36%
Waste Dumping	.01 lb/ton	50%
Diesel Exhaust	17.7 lb/1000 gal	100%
Drilling	1.5 lb/hole	50%
Wind Erosion Disturbed Areas	33.2 $g/m^2/yr$	50%
Wind Erosion Tailings Pond	1.3 ton/acre/yr	50%
Support Vehicles	1.4 lb/VMT	50%
Coarse Ore Stockpile	.01 lb/ton	50%

C. Production Limitations

Montana Resources shall not exceed the following production limitations. These limits are based on the DDEC packages being installed on 11 of the 15 haul trucks and before the contingency measure for Montana Resources is implemented.

1. Winter (Nov.-Feb.) Seasonal Production Limitations

Emission Point (Production Units)	Maximum Seasonal Production Rate
Haul Trucks (vmt)	503,386.3
Diesel Exhaust (gallons of diesel)	1,004,587.8
Lime Unloading (tons of lime)	27,738.5
Support Vehicles (vmt)	353,331.4
Molybdenum Dryer (tons of molybdenum)	9,795.9
Primary Crusher Ore Dump (tons of ore)	8,142,458.3

2. Summer (Mar.-Oct.) Seasonal Production Limitations

Emission Point (Production Units)	Maximum Seasonal Production Rate
Haul Trucks (vmt)	1,420,560.0
Diesel Exhaust (gallons of diesel)	5,702,838.5
Lime Unloading (tons of lime)	123,898.5
Support Vehicles (vmt)	1,466,666.0
Molybdenum Dryer (tons of molybdenum)	61,875.6
Primary Crusher Ore Dump (tons of ore)	34,759,820.9

3. Winter (Nov.-Feb.) Daily Production Limitations

Emission Point (Production Units)	Maximum Daily Production Rate
Haul Trucks (vmt)	4146.3
Diesel Exhaust (gallons of diesel)	8374.7
Lime Unloading (tons of lime)	231.2
Support Vehicles (vmt)	2944.4
Molybdenum Dryer (tons of molybdenum)	81.6
Primary Crusher Ore Dump (tons of ore)	68391.6[7]

In the event that a contingency measure must be implemented, Montana Resources shall not exceed the following production limitations. These limits are based on the DDEC packages being installed on 11 of the 15 haul trucks.

4. Winter (Nov.-Feb.) Seasonal Production Limitations

Emission Point (Production Units)	Maximum Seasonal Production Rate
Haul Trucks (vmt)	318,950.0
Diesel Exhaust (gallons of diesel)	871,281.7
Lime Unloading (tons of lime)	27,738.5
Support Vehicles (vmt)	353,331.4
Molybdenum Dryer (tons of molybdenum)	9,795.9
Primary Crusher Ore Dump (tons of ore)	6,218,929.1

5. Summer (Mar.-Oct.) Seasonal Production Limitations

Emission Point (Production Units)	Maximum Seasonal Production Rate
Haul Trucks (vmt)	1,320,299.7
Diesel Exhaust (gallons of diesel)	4,941,801.1
Lime Unloading (tons of lime)	123,898.5
Support Vehicles (vmt)	1,466,666.0
Molybdenum Dryer (tons of molybdenum)	61,875.6
Primary Crusher Ore Dump (tons of ore)	33,576,892.4

6. Winter (Nov.-Feb.) Daily Production Limitations

Emission Point (Production Units)	Maximum Daily Production Rate
Haul Trucks (vmt)	2657.9
Diesel Exhaust (gallons of diesel)	7260.7
Lime Unloading (tons of lime)	231.2
Support Vehicles (vmt)	2944.4
Molybdenum Dryer (tons of molybdenum)	81.6
Primary Crusher Ore Dump (tons of ore)	51824.4[8]

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[7]Fluctuation occurred at the Primary Crusher Ore Dump during the CMB study year and the range has been reported by MR. The average production during the winter months will remain at 68,391.6 tons of ore, but the maximum that may occur on any day is 83,767.2 tons of ore.

[8]Fluctuation occurred at the Primary Crusher Ore Dump during the CMB study year and the range has been reported by MR. The average production during the winter months will remain at 51,824.4

D. Operational Reporting Requirement

Montana Resources shall supply the Department of Health and Environmental Sciences' Air Quality Bureau (AQB) with an annual, seasonal, and daily particulate emission inventory for all the listed emission points. The emission inventories shall include the following production data (on annual, seasonal, and daily bases), a listing of all emission factors used, all calculations and other related information which may be requested. The annual information must be submitted to the AQB by March 1 of the following calendar year.

The daily emission inventory need only be supplied for the months of November through February. This information, along with the seasonal inventory, must be submitted to the AQB by April 15 of the following year.

1. Tons of ore removed;
2. Tons of waste, including all non-ore material removed;
3. Haul truck vehicle miles traveled (this must include all supporting information such as length of haul, number of trucks, weight of trucks, etc.);
4. Support vehicle miles traveled (this must include all supporting information such as length of haul, number of trucks, weight of trucks, etc.);
5. Number of holes drilled;
6. Number of blasts;
7. Tons of ore through the primary crusher;
8. Tons of ore through each of the secondary crushers;
9. Tons of ore through the fine ore bins;
10. Tons of feed to concentrator;
11. Current acreage of disturbed area;
12. Current exposed area of tailings pond;
13. Gallons of diesel consumed;
14. Tons of lime unloaded;
15. Tons through molybdenum dryer;
16. Map of all haul roads and access roads;
17. Type of chemical dust suppressant used;
18. Description of chemical dust suppressant application procedure including application rate, application frequency, dilution rate, and scarification;

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tons of ore, but the maximum that may occur on any day is 63,460 tons of ore.

19. Chemical dust suppressant application log (dates, areas, and amounts of chemical dust suppressant application);

20. A list of equipment dedicated, either full-time or part-time, to fugitive dust control of haul roads, access roads, or work areas (number of water trucks, water capacity, number of graders); and

21. Water truck operation log (water truck operating hours, dates, areas, and amounts of water applied).

E. Ambient Monitoring

Montana Resources shall conduct ambient air monitoring as described in Attachment 1.

F. Visible Emissions Monitoring

1. Montana Resources shall conduct monthly visible emissions observations from November through February at each of the following listed sources to determine compliance with the applicable visible emission standards for at least one year after the issuance of this permit.

   a. Drilling
   b. Blasting
   c. Waste Removal
   d. Ore Removal
   e. Haul Roads
   f. Waste Dumping
   g. Lime Unloading
   h. Primary Crusher Ore Dump
   i. Primary Crusher
   j. Coarse Ore Conveying
   k. Coarse Ore Stockpile
   l. #1 Sec. Crusher
   m. #2 Sec. Crusher
   n. #3 Sec. Crusher
   o. Fine Ore Storage Trans.
   p. Fine Ore Bin Feeders
   q. Molybdenum Dryer
   r. Wind Erosion Disturbed Areas
   s. Wind Erosion Tailings Pond

2. Opacity shall be determined according to EPA's Method 9 (40 CFR Part 60, Appendix A).

3. Visible emissions shall be read for ten minutes at each listed source, once a month during the months of November through February, while the source is operating.

4. The visible emissions observations shall be made by certified visible emissions observers.

5. The opacity reported shall be the highest six-minute average occurring during the ten-minute visible emissions observation.

6. The visible emissions observations shall be recorded on visible emissions field documentation forms approved by the department.

7. A summary of the visible emissions observations shall be submitted to the department by April 15 of the following calendar year.

8. Annually the visible emissions observations data will be reviewed by the department and the department will determine if continued or additional visible emissions monitoring is warranted. The department may require continued or additional visible emissions monitoring.

G. Emission Testing

1. Montana Resources shall perform compliance source tests on the primary crusher, the secondary crushers, the coarse ore conveying system, the fine ore bins, and the molybdenum dryer within four years after issuance of permit #1749-04 and at least once every four years thereafter.

2. All source tests shall be performed at over 90% of the maximum rated capacity of the affected facility or source.

3. All source tests shall include determination of total mass particulate and PM-10. The source tests shall be conducted in accordance with the applicable test methods listed in 40 CFR Part 60, Appendix A (Total Particulate) and 40 CFR Part 51, Appendix M, Methods 201 and 201A (PM-10) and the Montana Compliance Source Test Protocol.

4. The department may require additional emissions testing per ARM 16.8.704.

H. Montana Resources shall comply with all other applicable state, federal and local laws and regulations.

SECTION III: General

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 permit.

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

C. 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.

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 who are jointly or severally adversely affected by the department's decision may request, within fifteen (15) days after the department renders its decision, upon affidavit, setting forth the grounds therefore, a hearing before the Board. A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The department's decision on the application is not final unless fifteen (15) days have elapsed and there is no request for a hearing under this section. The filing of a request for a hearing postpones the effective date of the department's decision until the conclusion of the hearing and issuance of a final decision by the Board.

F. Application Data - Information submitted on behalf of an air quality permit application is hereby incorporated as a condition of that permit including commencement and completion dates of construction.

G. Permit Inspection - As required by ARM 16.8.1115 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.

H. Permit Fees - Pursuant to Section 75-2-211, MCA, as amended by the 1991 Legislature, the continuing validity of this permit is conditional upon the payment by the permittee of an annual operation fee, as required by the Section and rules adopted thereunder by the Board of Health and Environmental Sciences.

Attachment 1

AMBIENT AIR MONITORING PLAN
MONTANA RESOURCES
Permit #1749-04

1. This ambient air monitoring plan was required by air quality permit #1749-04 which applies to Montana Resources' mining operation in Butte, Montana. This monitoring plan may be modified by the department. All requirements of this plan are considered conditions of the permit.

2. Montana Resources shall install, operate and maintain four air monitoring sites in the vicinity of the mine and facilities. The exact locations of the monitoring sites must be approved by the department and meet all the siting requirements contained in the Montana Quality Assurance Manual including revisions, the EPA Quality Assurance Manual including revisions, and Parts 53 and 58 of the Code of Federal Regulations, or any other requirements specified by the department.

3. Montana Resources shall continue existing air monitoring after the issuance of this permit for at least one year. At that time the air monitoring data will be reviewed by the department and the department will determine if continued monitoring or additional monitoring is warranted. The department may require continued air monitoring to track long-term impacts of emissions from the facility or require additional ambient air monitoring or analyses if any changes take place in regard to type and/or quantity of emissions or the area of impact from the emissions.

4. Montana Resources shall monitor the following parameters at the sites and frequencies described below:

Location	Site	Parameter	Frequency
UTM Zone #12 E383220, N5095415, Elev. 5575 ft., 1699 m	Site #41 Alpine	PM-10[1], Cu, Pb PM-10 Collocated[2]	Every third day November through February Every sixth day March through October
UTM Zone #12 E385333, N5094121, Elev. 5659 ft., 1725 m	Site #42 Hillcrest	PM-10, Cu, Pb	Every third day November through February Every sixth day March through October

[1]PM-10 = particulate matter less than 10 microns.

[2]The requirement for a collocated PM-10 sampler may be waived if the monitor operator operates a collocated PM-10 sampler at another site.

Location	Site	Parameter	Frequency
UTM Zone #12 E381640, N5098380, Elev. 5674 ft., 1729 m	Site #43 Belmont	PM-10, Cu, Pb	Every third day November through February Every sixth day March through October
	Guard Shack	Wind Speed, Wind Direction, Sigma Theta, Temperature	Continuous

Data recovery for all parameters shall be at least 80 percent computed on a quarterly and annual basis. The department may require continued monitoring if this condition is not met.

5. Any ambient air monitoring changes proposed by Montana Resources must be approved in writing by the department.

6. Montana Resources shall utilize air monitoring and quality assurance procedures which are equal to or exceed the requirements described in the Montana Quality Assurance Manual including revisions, the EPA Quality Assurance Manual including revisions, 40 CFR Parts 53 and 58 of the Code of Federal Regulations, and any other requirements specified by the department.

7. Montana Resources shall submit quarterly data reports within 45 days after the end of the calendar quarter and an annual data report within 90 days after the end of the calendar year. The annual report may be substituted for the fourth quarterly report if all information in 8. below is included in the report.

8. The quarterly report shall consist of a narrative data summary and a data submittal of all data points in AIRS format. This data may be submitted in ASCII files on 3½" or 5¼" high or low density floppy disks, in IBM-compatible format, or on AIRS data entry forms. The narrative data summary shall include:

   a. A topographic map of appropriate scale with UTM coordinates and a true north arrow showing the air monitoring site locations in relation to the mine, crushers and concentrator, and the general area;

   b. A hard copy of the individual data points;

   c. The quarterly and monthly means for PM-10 and wind speed;

   d. The first and second highest 24-hour concentrations for PM-10 and metals;

   e. The quarterly and monthly wind roses;

   f. A summary of the data collection efficiency;

   g. A summary of the reasons for missing data;

   h. A precision and accuracy (audit) summary;

   i. A summary of any ambient air standard exceedances; and

   j. Calibration information.

9. The annual data report shall consist of a narrative data summary containing:

a. A topographic map of appropriate scale with UTM coordinates and a true north arrow showing the air monitoring site locations in relation to the mine, crusher and concentrator, and the general area;

b. A pollution trend analysis;

c. The annual means for PM-10 and wind speed;

d. The first and second highest 24-hour concentrations for PM-10 and metals;

e. The annual wind rose;

f. An annual summary of data collection efficiency;

g. An annual summary of precision and accuracy (audit) data;

h. An annual summary of any ambient standard exceedances; and

i. Recommendations for future monitoring.

10. The department may audit, or may require Montana Resources to contract with an independent firm to audit, the air monitoring network, the laboratory performing associated analyses, and any data handling procedures, at unspecified times. On the basis of the audits and subsequent reports, the department may recommend or require changes in the air monitoring network and associated activities in order to improve precision, accuracy and data completeness.

Permit Alteration Analysis
Montana Resources
Application #1749-05

I. Introduction

Montana Resources currently operates an open pit copper and molybdenum mine, crushing and milling operation in Butte, Montana, under air quality permit #1749-04. The original permit, #1749 was issued to ARCO on April 1, 1983 as a result of the Butte Total Suspended Particulate (TSP) State Implementation Plan (SIP).

On July 1, 1987, the Environmental Protection Agency promulgated new ambient air quality standards for particulate matter with an aerodynamic diameter of 10 microns or less (PM-10). The annual PM-10 standard is 50 $\mu g/m^3$ and the 24-hour PM-10 standard is 150 $\mu g/m^3$. These standards were in turn adopted by the Montana Board of Health and Environmental Sciences on April 29, 1988. On August 7, 1987, EPA designated Butte as a PM-10 Group I area due to numerous violations of the PM-10 24-hour ambient standards. The 1990 amendments to the Federal Clean Air Act designated the Butte Group I area as a PM-10 nonattainment area in November 1990. As a result of these designations, the department was required to develop a PM-10 emission control program as part of the State Implementation Plan to bring the Butte area into compliance with the PM-10 standard and demonstrate maintenance of that standard.

In order to identify the major PM-10 emission sources in the area, the department conducted a chemical mass balance study (CMB). Since the exceedance days were experienced during the winter when Butte has the worst air quality, the CMB results for the days that exceeded the National Ambient Air Quality Standards (NAAQS) were used for the demonstration of emission contributions for the winter period. Montana Resources' emissions comprised 19.5% of the total contribution seen on the days that exceeded the NAAQS. The CMB study period was from September 25, 1987 through March 25, 1988. Therefore, September and October data were used to determine non-wintertime contributions. Montana Resources' emissions were 18% of the total for that period. Over the entire study period, Montana Resources' emissions comprised 21.3% of the total. Complete results of the CMB study and the compliance and maintenance demonstration are contained in the Butte PM-10 SIP.

Since the sources have been identified, control plans are being developed for each source (wood stove control programs, sanding material specifications and street sweeping programs, etc.), including the industrial sources (Montana Resources and Rhône-Poulenc).

The EPA has determined that the demonstration of compliance must be made using allowable emissions and any allowable emission limits must be federally enforceable. Since Montana Resources' actual emissions during the PM-10/CMB study period (3-87 through 2-88) were substantially lower than their allowable emissions, based on permit #1749A, Montana Resources' permit had to be modified to reduce their allowable emissions. This modification, permit #1749-04, reduced Montana Resources' allowable daily winter (November through February) emissions to 90% of their actual daily emissions during the 1987-1988 CMB study period. The emissions identified during the CMB study were from the haul trucks, diesel exhaust, lime unloading, support vehicles, molybdenum dryer, and primary crusher ore dump. An average daily wintertime limit for production has been set for each of these sources. Due to the production schedule at Montana Resources during the study

period, the primary ore crusher has been given an average daily wintertime limit for production and a ceiling production limit. This was done since the crushing of ore runs on the same schedule currently as was present during the study period. This schedule includes scheduled downtime each week for the primary crusher and scheduled downtime each week for the secondary crushers. The variation during the study period ranged from 29,225 tons of ore crushed to 63,460. This range is reflected in the study period and is, therefore, allowed for future production. Montana Resources' annual allowable total particulate emissions are reduced to approximately 37% of Montana Resources' current annual allowable total particulate emissions. Permit #1749-04 also established PM-10 emission limitations for the first time as well as a Reasonably Available Control Measure (RACM)/Reasonably Available Control Technology (RACT) analysis. This permit required the use of chemical dust suppression on the haul roads and contains annual point-specific production and emission limits, and seasonal and daily source-wide production and emission limits. The initial analysis, completed by department staff as part of the SIP development process, indicates that the modification (permit #1749-04), in conjunction with the control plans being developed for the other identified sources, demonstrates compliance with the daily and annual PM-10 standards in the Butte PM-10 nonattainment area by the year 1993. Complete details are contained in the Butte PM-10 SIP.

Montana's air quality rules ARM 16.8.1113(a) MODIFICATION OF PERMIT allows the department to modify a source's permit due to changes in applicable rules or standards adopted by the Board of Health and Environmental Sciences. Permit #1749A was issued to ARCO during the Butte TSP SIP development process and later transferred to Montana Resources. Permit #1749-04 reflects the adoption of the new ambient PM-10 standard by the Montana Board of Health and Environmental Sciences. This permit may be further modified if the currently proposed control plan for all point and area sources fails to achieve compliance with the ambient PM-10 standards.

On October 13, 1991, and as part of the Butte PM-10 SIP, the department issued a Notification of Permit Modification for the air quality permit held by MR. On October 28, 1991, a Petition for Hearing on this permit modification was filed by MR with the Board of Health and Environmental Sciences. After the filing of the petition, the parties met on several occasions and engaged in extensive settlement discussions concerning the terms of a modified permit. The department and MR subsequently agreed to the terms of a modified air quality permit for MR's operations. The department and MR filed a Stipulation for Issuance of Final Permit with the Board, which included a proposed modified permit. Paragraphs 7, 8 and 9 of the stipulation described the parties' understanding of the interpretation and application of Part B, Section 6, e, vi of the modified permit. On March 20, 1992, the Board accepted the stipulation and issued a final Order directing the department to issue the proposed modified permit to MR. Therefore, permit #1749-04 was issued on this date.

On November 15, 1993, MR applied for permit alteration #1749-05 to allow for production increases in their diesel consumption, vehicle miles travelled by the haul trucks, and ore hauled to the primary crusher dump. This increase is allowed because MR installed DDEC packages on 11 of the 15 haul trucks at the mine. The installation of DDEC packages on the haul trucks results in a 43% decrease in diesel exhaust emissions per truck. However, since only 11 of the 15 trucks have been retrofitted at his time, the department can only credit 11/15 of 43% or a 31.5% emission decrease.

In addition to allowing the production increases in permit #1749-05, a contingency measure was also added to this permit. The Federal Clean Air Act Amendments of 1990 require the implementation of a contingency measure within 60 days of notification from the Environmental Protection Agency that the area has exceeded the National Ambient Air Quality Standards after the date of December 31, 1994. The contingency measure must reduce ambient PM-10 emissions in sufficient amounts to demonstrate compliance as determined in the Butte Silver Bow PM-10 State Implementation Plan from sources that are not currently controlled and accounted for in the Butte Silver Bow PM-10 State Implementation Plan.

Since it has been determined through source apportionment studies that the MR facility is one of the largest contributing sources of uncontrolled ambient PM-10 emissions in the Butte Silver Bow PM-10 nonattainment area, a contingency measure for MR is necessary to bring the area back into attainment with the National Ambient Air Quality Standards in the event that these standards are exceeded. The contingency measure to be implemented by MR in case of an exceedance would be to decrease emission and production levels to the pre-DDEC limitations contained in Section II.B.9.a-c and Section II.C.4-6 of permit #1749-05.

Also, MR plans to retrofit the remaining four (4) haul trucks with the DDEC packages in the next 18 months to 2 years. This will result in an additional 11.5% (43%-31.5%) emission decrease which could be used for production increases elsewhere in the facility. MR will need to apply for a permit alteration requesting production increases when the remaining four (4) trucks have been retrofitted to include the DDEC package. These production increases will not be included in the contingency measure production levels. Permit #1749-05 will replace permit #1749-04.

II. Process Description

Mining at Montana Resources is done via conventional open pit methods utilizing blast hole drills, loaders, shovels, trucks, dozers and typical haul road maintenance equipment. All ore is hauled to the primary crusher and then conveyed to the coarse ore stockpile.

Drilling is accomplished using rotary blast hole drills. The drills are crawler or rubber tire mounted and self-contained. Blasting utilizes bulk ANFO and non-electric primers and delays. Wet holes are loaded with a package ANFO or waterproof slurry.

Blast holes are filled with sufficient ANFO to ensure adequate fragmentation. The mining contractor is instructed not to overfill holes and to clean up spillage prior to blasting. Spillage is placed in holes prior to stemming to ensure detonation. Cuttings from each blast hole are collected and assayed for delineation of ore and waste.

Loading of ore and waste is performed by front-end loaders or shovels. Hauling ore and waste will be by 170-ton trucks. Ore is transported to the crushing plant with waste taken to the dump sites.

III. Applicable Rules and Regulations

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

1. ARM 16.8.807 Ambient Air Monitoring and ARM 16.8.809 Methods and Data. These sections require Montana Resources to perform all monitoring required as a condition of the permit

in accordance with the Montana Quality Assurance Manual and the U.S. Environmental Protection Agency (EPA) Quality Assurance Manual. Specific ambient monitoring requirements are contained in Attachment 1 of the permit.

2. ARM 16.8.821 Ambient Standards for PM-10. Montana Resources must demonstrate compliance with the applicable ambient air quality standards. The Butte PM-10 SIP modeling and analysis indicates that restriction of Montana Resources to the emission limitations contained in this permit, along with control measures applied to other sources, will bring Butte into compliance with the PM-10 standards (see Butte PM-10 SIP for details).

B. ARM 16.8, Subchapter 9, Prevention of Significant Deterioration of Air Quality (PSD), including but not limited to:

ARM 16.8.921 Definitions. Montana Resources is not defined as a "major stationary source" because it is not a listed source, and does not have the potential to emit more than 250 tons of any pollutant (discounting fugitive dust).

C. ARM 16.8, Subchapter 11 Permit, Construction and Operation of Air Contaminant Sources, including but not limited to:

1. ARM 16.8.1102 When Permit Required. This section requires a source to obtain an air quality permit if they construct, alter, or use an air contaminant source.

2. ARM 16.8.1104 Existing Sources and Stacks, Permit Application Requirements. This section requires that an application for an air quality permit be submitted for an existing source or stack. MR has submitted their application for an air quality permit as required.

3. ARM 16.8.1107 Public Review of Permit Applications. This section requires that MR notify the public of its application for permit. MR has submitted proof of compliance with the public notice requirements.

4. ARM 16.8.1109 Conditions for Issuance of Permit. This section requires that MR demonstrate compliance with applicable rules and standards before a permit can be issued. MR has demonstrated compliance with applicable rules and standards as required for permit issuance.

5. ARM 16.8.1115 Inspection of Permit. This requires that air quality permits shall be made available for inspection by the department at the location of the source.

6. ARM 16.8.1117 Compliance with Other Statutes and Rules. This requires the permit holder to comply with all other applicable Federal and Montana statutes, rules and standards.

7. ARM 16.8.1118 Waivers. ARM 16.8.1105 requires the permit application be submitted 180 days before construction begins. This section allows the department to waive this time limit. The department hereby waives this limit.

D. ARM 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 has determined that a 20% opacity limitation for fugitive sources (5% for haul roads and access roads) and a requirement for use of chemical stabilization on haul roads and access roads will satisfy these requirements. (See Section VI. RACM/RACT Analysis.)

2. ARM 16.8.1403 Particulate Matter, Industrial Processes. The requirements of this section are superseded by the stricter emission limits established in the permit.

3. ARM 16.8.1404 Visible Air Contaminants. This section requires an opacity limitation of 20% for all stacks or vents.

E. 1990 Clean Air Act Amendments

The 1990 Clean Air Act Amendments require the application of Reasonably Available Control Measures (RACM) in moderate PM-10 nonattainment areas. RACM has been defined as RACT for existing PM-10 stack or point sources, process fugitive, and fugitive dust sources such as haul roads, open stockpiles, disturbed areas, tailings disposal areas, or unpaved staging areas (see "Guidance on Reasonably Available Control Requirements in Moderate PM-10 Nonattainment Areas"). The department has determined that a 20% opacity limitation for fugitive sources (5% for haul roads and access roads), application of NSPS emission limits to point sources, and a requirement for use of chemical stabilization on haul roads and access roads will satisfy these requirements (see Section VI. RACM/RACT Analysis).

IV. Air Quality Impacts/Compliance With Ambient Standards

The department used EPA-approved CMB models and analyses to demonstrate compliance with the ambient PM-10 standards by the year 1993 if Montana Resources' allowable emissions were limited and if control plans were applied to other sources. Complete results will be contained in the Butte PM-10 SIP.

V. Existing Air Quality/Ambient Monitoring Requirements

Butte is a secondary non-attainment area for TSP and a PM-10 Group I nonattainment area. Montana Resources currently operates four PM-10 particulate monitors in Butte. The 1989/90 TSP levels for those sites are contained in the table below.

Summary of the Montana Resources Total Suspended Particulate Data
January 1989 - March 1990 ($\mu g/m^3$)

Site	Maximum	Second High
#41 Alpine	218	210
#42 Hillcrest	63	54
#43 Belmont	144	107
#49 Columbia Gardens	102	56
#50 Barge	41	40

The department operates a PM-10 site in Butte at Greeley School. The maximum PM-10 reading during 1989 was 158 $\mu g/m^3$.

The Butte area is a PM-10 Group I area and, since Montana Resources has been identified as a major PM-10 contributor in the Butte area, and since TSP is no longer a regulated pollutant, Montana Resources has replaced the TSP monitors with PM-10 monitors and increased the sampling schedule. Complete ambient monitoring requirements are contained in Attachment 1.

VI. RACM/RACT Analysis

The following point-by-point RACT analyses are based on engineering judgement of the department staff, EPA RACT guidance, and comparison with the particulate control measures identified as Best Available Work Practices (BAWP) for Air Pollution at Surface Coal Mines by the Wyoming Air Quality Bureau. Any control measure identified as BAWP would, at the very least, be as stringent as RACT and therefore qualify as RACT. This RACM/RACT analysis was initially completed for permit #1749-04.

A. Blasting

The only practical method to reduce fugitive dust emissions from blasting is to use those work practices that will minimize overshoot. This particulate control method has been included in Montana Resources' permit as an emission control requirement and has been identified as BAWP by the Wyoming AQB.

B. Drilling

There are two particulate control methods that could be applicable to drilling at a hard rock mine such as Montana Resources: dust suppression shrouds or negative pressure filter dust collectors. The department has determined that a combination of water sprays and mechanical deflectors (dust shrouds) would be the most cost-effective and efficient particulate control measures in this case. This particulate control method has been included in Montana Resources' permit as an emission control requirement and has been identified as BAWP by the Wyoming AQB.

C. Ore and Waste Removal and Waste Dumping

The only practical method to reduce fugitive dust emissions from ore and waste removal is to minimize the drop height during loading and unloading. This particulate control method has been included in Montana Resources' permit as an emission control requirement and has been identified as BAWP by the Wyoming AQB.

D. Fugitive Dust from Support Vehicles and Haul Trucks

There are several particulate control methods that would be applicable to the fugitive dust from support vehicles and haul trucks at Montana Resources. These methods would include paving or chip sealing of haul and access roads or the use of overland conveyors instead of haul trucks. Other methods may include the use of chemical dust suppression or surfactant and/or the application of water to haul roads with water trucks, or sprinkler systems. Schedules for the application of chemical dust suppressant may be mandated. In addition, records of the application of chemical dust suppressant and the application of water may have to be maintained and submitted. Fugitive dust control measures may also include speed limits for haul trucks, haul truck size limitations, and requirements for minimization of haul distances. The department has determined that, in the case of Montana Resources, requirements for paving or chip sealing of haul

and access roads or the use of overland conveyors instead of haul trucks would not be cost-effective and would be more stringent than is required by RACT. In Doug Skie's letter of May 23, 1991, the EPA indicated that the use of chemical dust suppressant, along with the application of water, would constitute RACT in Montana Resources' case as long as there was a schedule for application of the chemical dust suppressant and recordkeeping requirements included in the permit. These requirements are included in Montana Resources' permit. The use of other control methods such as speed limits for haul trucks, haul truck size limitations, and requirements for minimization of haul distances would not provide significant increases in control efficiency and will not be necessary. This particulate control method has been included in Montana Resources' permit as an emission control requirement, has been deemed RACT by the EPA, and is equivalent to BAWP as identified by the Wyoming AQB.

E. Diesel Exhaust from Haul Trucks

The particulate controls required for Montana Resources' diesel haul trucks (installation of smaller injectors, installation of intercoolers on the turbochargers, and the addition of minimum throttle delay devices) are consistent with those controls discussed in Colorado's Final Report and Recommendations of the Governor's Blue Ribbon Diesel Task Force and Radian's Feasibility and Cost-Effectiveness of Controlling Emissions from Diesel Engines in Rail, Marine, Construction, Farm, and Other Mobile Off-Highway Equipment. The department has determined that these conditions constitute RACT in this case. In addition, Montana Resources has installed DDEC packages on 11 of the 15 haul trucks at the mine which further reduce the diesel exhaust emissions by 43% per truck.

F. Wind Erosion Disturbed Areas

There are several particulate control methods that would be applicable to control fugitive dust from wind erosion of disturbed areas at Montana Resources. These methods would include revegetation or the use of dust suppressants or surfactants with water sprays. The department has determined that, in the case of Montana Resources, a requirement for revegetation or the use of dust suppressants or surfactants with water sprays would not be cost-effective and would be more stringent than is required by RACT. The Wyoming guidance deals only with surface coal mines, and does not address fugitive dust from wind erosion of disturbed areas. The department has determined that RACT for the control of fugitive dust from wind erosion of disturbed areas at Montana Resources consists of compliance with the 20% opacity limitation. No specific particulate control method has been included in Montana Resources' permit as an emission control requirement for fugitive dust from wind erosion of disturbed areas.

G. Wind Erosion of Tailings Pond

The vast majority of the surface of the tailings pond at Montana Resources is covered by water. The only additional practical methods of control of particulate from wind erosion of exposed areas of the tailings pond would include the use of chemical dust suppressants or surfactants with water sprays. The department has determined that, in the case of Montana Resources, the use of dust suppressants or surfactants with water sprays would not be cost-effective due to the fact that the vast majority of the surface of the tailings pond at Montana Resources is covered by water. The

use of chemical dust suppressants that close to surface water might also create a possible water quality threat. The department has determined that RACT for the control of particulate from wind erosion of exposed areas of the tailings pond at Montana Resources consists of compliance with the 20% opacity limitation. If a violation of the 20% opacity limitation occurs, water sprays will be required to be installed as an emission control requirement for Montana Resources' permit.

H. #1, #2, and #3 Secondary Crushers, Fine Ore Storage and Handling, and Molybdenum Dryer

There are several particulate control methods that would be applicable to the #1, #2, and #3 secondary crushers, fine ore storage and handling, and molybdenum dryer at Montana Resources. The proposed control method is high efficiency (99%) wet scrubbers. High efficiency wet scrubbers are generally recognized as the one of the better types of particulate control for sources of this type and are sometimes considered to constitute Best Available Control Technology (BACT). This is a more stringent standard than RACT. In addition, emission standards equal to the emission standards contained in 40 CFR Part 60 (NSPS), Subpart LL, Standards of Performance for Metallic Mineral Processing Plants, are applied to all particulate point sources located at Montana Resources. Informal EPA guidance has indicated that, in general, RACT does not require the imposition of NSPS requirements. Emission limits equal to NSPS emission limits would, therefore, be at least as stringent as is required by RACT. This particulate control method has been included in Montana Resources' permit as an emission control requirement and is equivalent to BAWP as identified by the Wyoming AQB.

I. Primary Crusher Ore Dump

There are several particulate control methods that would be applicable to the ore dump at Montana Resources. These methods would include complete enclosure, partial enclosure, the use of dust suppression shrouds with water sprays or the use of a negative air pressure system connected to a baghouse. The department has determined that, in the case of Montana Resources, a requirement for enclosure, complete or partial, would not be cost-effective and would be more stringent than is required by RACT. The use of a negative air pressure system connected to a baghouse would provide similar control efficiency to use of dust suppression shrouds and water sprays. This particulate control method has been included in Montana Resources' permit as an emission control requirement and is equivalent to BAWP as identified by the Wyoming AQB.

J. Primary Crusher, Lime Unloading, and Coarse Ore Conveying

There are several particulate control methods that would be applicable to the primary crusher, lime unloading, and coarse ore conveying systems at Montana Resources. The proposed control method is baghouse control. Baghouse control is generally recognized as the one of the best types of particulate control for sources of this type and is usually considered to constitute Best Available Control Technology (BACT). This is a more stringent standard than RACT. In addition, emission standards equal to the emission standards contained in 40 CFR Part 60 (NSPS), Subpart LL, Standards of Performance for Metallic Mineral Processing Plants, are applied to all particulate point sources located at Montana Resources. Informal EPA guidance has indicated that, in general,

RACT does not require the imposition of NSPS requirements. Emission limits equal to NSPS emission limits would, therefore, be at least as stringent as is required by RACT. This particulate control method has been included in Montana Resources' permit as an emission control requirement and is equivalent to BAWP as identified by the Wyoming AQB.

K. Coarse Ore Stockpile

There are several particulate control methods that would be applicable to the coarse ore stockpile at Montana Resources. These methods would include complete enclosure, partial enclosure, or the use of dust suppressants or surfactants with water sprays. The department has determined that, in the case of Montana Resources, a requirement for enclosure, complete or partial, would not be cost-effective and would be more stringent than is required by RACT. The Wyoming guidance deals only with coal stockpiles at surface coal mines and is not appropriate for the coarse ore stockpile at Montana Resources. The use of dust suppressants or surfactants with water sprays would also not be cost-effective due to the high moisture content (6%) of Montana Resources' ore and the low amount of fines. The department has determined that RACT for the coarse ore stockpile at Montana Resources consists of compliance with the 20% opacity limitation. No specific particulate control method has been included in Montana Resources' permit as an emission control requirement for the coarse ore stockpile.

VII. Environmental Assessment

The Montana Environmental Policy Act (MEPA) requires completion of an Environmental Assessment (EA) on any permitting action by the State of Montana to determine if an Environmental Impact Statement (EIS) is required. The EA completed by the department is attached.

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

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Project or Application: Montana Resources, Permit #1749-05

Description of Project: This permit is for Montana Resources open pit copper/molybdenum mine that is located in Butte, Montana.

Benefits and Purpose of Proposal: This permit is to allow Montana Resources to increase some of their production limitations since DDEC packages (which lower emissions from diesel exhaust by 43% per truck) have been installed on 11 of the 15 haul trucks at the mine.

Description and analysis of reasonable alternatives whenever alternatives are reasonably available and prudent to consider: None available.

A listing and appropriate evaluation of mitigation, stipulations and other controls enforceable by the agency or another government agency: A list of enforceable permit conditions and a permit analysis are contained in Permit #1749-05.

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 permitting of the existing equipment with the emission limitations contained in Permit #1749-05 will limit the emissions from the facility.

Other groups or agencies contacted or which may have overlapping jurisdiction: Department of State Lands.

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

EA prepared by: David Klemp

Date: December 21, 1993

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			