AIR QUALITY PERMIT

Issued to: Plum Creek Manufacturing, Inc.
Columbia Falls Operations
P. O. Box 160
Columbia Falls, Montana 59912

Permit #2667-M
Date of Final Modification: 1/24/92

SECTION I: Permitted Facilities

An air quality permit is hereby granted to the above-named permittee, hereinafter referred to as recipient, pursuant to Sections 75-2-204 and 211, MCA, as amended, and Subchapter 11, PERMIT, CONSTRUCTION AND OPERATION OF AIR CONTAMINANT SOURCES, ARM 16.8.1113 as amended, for the entire mill site located at P. O. Box 160, Columbia Falls, MT, for the following:

A. MDF - face dryer, with a high efficiency cyclone control, and a design capacity of 45,000 lbs/hr of dry wood fiber, resin, and wax. The face dryer is heated with two Energex sanderdust burners with a combined capacity of 45 MMBtu/hr.

B. MDF - core dryer, with a high efficiency cyclone control, and a design capacity of 45,000 lbs/hr of dry wood fiber, resin and wax. The core dryer is heated with one Coen sanderdust burner with a capacity of 50 MMBtu/hr.

C. Two plywood veneer dryers, with a wet ESP control, and a combined design capacity of 20,000 square feet/hr of plywood on a 3/8" basis. The veneer dryers are heated with a Wellons unit which has a design capacity of 30 MMBtu/hr.

D. One wood-fired boiler, with a design input capacity of 192 million Btu/hr firing rate.

E. Wood waste cyclones and baghouses.

F. Fugitive dust from mill vehicles and log yard activity.

G. Two gas boilers with design capacities of 20,000 pounds per hour steam and 10,500 pounds per hour steam.

SECTION II: Limitations and Conditions

A. MDF - Face Dryer

1. Face dryer emissions of total particulate shall be limited to the maximum allowable emission rate as determined by ARM 16.8.1403, Particulate Matter, Industrial Process, but in no case shall emissions of total particulate exceed 40.83 lbs/hr.

2. Face dryer emissions of PM-10 shall be limited to the maximum allowable emission rate as determined by ARM

16.8.1403, Particulate Matter, Industrial Process, but in no case shall emissions of PM-10 exceed 40.83 lbs/hr.

3. Visible emissions shall be limited to 20% opacity.

4. A source test shall be required to show compliance with Conditions A.1 and A.2 above every three years. The test methods shall conform to 40 CFR Part 51, Appendix M including back-half, for PM-10 and 40 CFR Part 60, Appendix A including back-half, for total particulate. Only a total particulate test is required if it is used as a surrogate for PM-10.

B. MDF - Core Dryer

1. Core dryer emissions of total particulate shall be limited to the maximum allowable emission rate as determined by ARM 16.8.1403, Particulate Matter, Industrial Process, but in no case shall emissions of total particulate exceed 40.92 lbs/hr.

2. Core dryer emissions of PM-10 shall be limited to the maximum allowable emission rate as determined by ARM 16.8.1403, Particulate Matter, Industrial Process, but in no case shall emissions of PM-10 exceed 40.92 lbs/hr.

3. Visible emissions shall be limited to 20% opacity.

4. A source test shall be required to show compliance with Conditions B.1 and B.2 above every three years. The test methods shall conform to 40 CFR Part 51, Appendix M including back-half, for PM-10 and 40 CFR Part 60, Appendix A including back-half, for total particulate. Only a total particulate test is required if it is used as a surrogate for PM-10.

C. Plywood Veneer Dryer

1. Plywood veneer dryer emissions shall be limited to 25.0 lbs/hr of PM-10, and 25.0 lbs/hr of total particulate.

2. Visible emissions shall be limited to 20% opacity.

3. A source test shall be required to show compliance with Condition C.1 above every three years. The test methods shall conform to 40 CFR Part 51, Appendix M including back-half, for PM-10 and 40 CFR Part 60, Appendix A including back-half, for total particulate. Only a total particulate test is required if the back half is included and it is used as a surrogate for PM-10.

D. Wood-Fired Boiler

1. Boiler emissions shall be limited to 0.30 lbs of total particulate per million Btu fired, but in no case shall emissions exceed 57.6 pounds of total particulate per hour.

2. Boiler emissions shall be limited to 0.30 lbs of PM-10 per million Btu fired, but in no case shall emissions exceed 57.6 pounds of PM-10 per hour.

3. Visible emissions shall be limited to 20% opacity.

4. A minimum of two source tests shall be completed to show compliance with Conditions D.1 and D.2 above within the first two years. The test frequency shall be reviewed after two years and an appropiate schedule shall be determined. The test methods shall conform to 40 CFR Part 51, Appendix M including back-half, for PM-10 and 40 CFR Part 60, Appendix A including back-half, for total particulate. Only a total particulate test is required if it is used as a surrogate for PM-10. The source test results shall be converted to pounds of particulate per million BTUs through an F-factor calculation. A standard F-factor approved by the department shall be utilized by Plum Creek in the calculation. The department may require Plum Creek to verify the F-factor for their boiler using a procedure approved by the department.

E. Wood Waste Cyclones and Baghouses

1. Combined Sawmill and Planer Process

a. This process includes the following emission points:

Description	Flow (SCFM)
Planer #3 Cyclone	24000
Planer #4 Cyclone	60000
Planer Shavings Bin Cyclone	6000
Planer Chip Bin Cyclone	6000
Sawmill chip bin cyclone	6000

b. The combined sawmill and planer process shall be limited to a total of 2.5 lbs total particulate per thousand board feet (MBF), a maximum of 25.84 lbs/hr of total particulate, and a maximum of 12.92 lbs/hr of PM-10.

c. Visible emissions from each of the emission points listed in (a) above shall be limited to 20% opacity as determined by 40 CFR 60 Appendix A, Method 9.

d. Compliance with the above limitations shall be determined visually as described in (c) above. If a violation of the 20% opacity requirement is documented, or if the department has evidence that the emission limitations contained in (b) above are being exceeded,

the department may require source testing of any or all of the emission points listed in (a) above. These tests shall conform with EPA test specifications under 40 CFR 60 Appendix A including back-half. PM-10 tests shall conform to 40 CFR 51, Appendix M including back-half. All sources where tests are required must be equipped with stacks and sampling ports, with safe access for the sampling personnel.

2. Total Plywood Process Excluding the Veneer Dryers

   a. This process includes the following:

Description	Flow (SCFM)
Plywood #1 chip bin cyclone	2800
Plywood #2 chip bin cyclone	2800
Plywood Lilly Pad cyclone	2800
Plywood Sander Baghouse	35000
Plywood 18" Trim Baghouse	15000
Plywood 30" Trim Baghouse	15000

   b. The total plywood process excluding veneer dryers shall be limited to 0.25 lbs of total particulate per thousand square feet (MSF) of plywood on a 3/8" basis, a maximum of 5.0 lbs/hr of total particulate, and a maximum of 2.5 lbs/hr of PM-10.

   c. Visible emissions from each of the emission points listed in (a) above shall be limited to 20% opacity as determined by 40 CFR 60 Appendix A, Method 9.

   d. Compliance with the above limitations shall be determined visually as described in (c) above. If a violation of the 20% opacity requirement is documented, or if the department has evidence that the emission limitations contained in (b) above are being exceeded, the department may require source testing of any or all of the emission points listed in (a) above. These tests shall conform with EPA test specifications under 40 CFR 60 Appendix A including back-half. PM-10 tests shall conform to 40 CFR 51, Appendix M including back-half. All sources where tests are required must be equipped with stacks and sampling ports, with safe access for the sampling personnel.

3. Total MDF Process Excluding Drying

   a. This process shall include the following emission points:

Description	Flow (SCFM)
MDF chip cyclone	10000
MDF N. Surge Bin Cyclone	7500
MDF S. Surge Bin Cyclone	7500
MDF N. Sander Baghouse	55000
MDF S. Sander Baghouse	55000
MDF Board Trim Baghouse	5000
MDF Sanderdust Fuel Baghouse	5000
MDF Hogfuel Blr Sndrdst Bghs	15000
MDF In-line Baghouse	50000
MDF CPS & In-line Baghouse	50000
MDF Metering Bin Baghouse	50000
MDF Fire Dmp Cyc (emerg. only)	
MDF Felter Baghouse #1	50000
MDF Felter Baghouse #2	50000
MDF Reject Fiber Cyc & Baghouse	50000

b. The MDF process excluding drying shall be limited to 1.5 lbs of total particulate per thousand square feet (MSF) on a 3/4" basis, a maximum of 19.69 lbs/hr of total particulate, and a maximum of 9.85 lbs/hr of PM-10.

c. Visible emissions from each of the emission points listed in (a) above shall be limited to 20% opacity as determined by 40 CFR 60 Appendix A, Method 9.

d. Compliance with the above limitations shall be determined visually as described in (c) above. If a violation of the 20% opacity requirement is documented, or if the department has evidence that the emission limitations contained in (b) above are being exceeded, the department may require source testing of any or all of the emission points listed in (a) above. These tests shall conform with EPA test specifications under 40 CFR 60 Appendix A including back-half. PM-10 tests shall conform to 40 CFR 51, Appendix M including back-half. All sources where tests are required must be equipped with stacks and sampling ports, with safe access for the sampling personnel.

F. Fugitive Dust from Mill Vehicles and Log Yard Activity

1. Chemical dust suppressant shall be applied to the major roads on the log yard to control fugitive dust from all log handling equipment. The application schedule shall be no less than once per year. Water sprays shall be used as necessary to control dust emissions on active areas of the log yard. The opacity of the log yard dust emissions shall not exceed 20% at any time.

2. Chemical dust suppressant shall be applied to the major haul routes throughout the plant to control fugitive dust from the haul trucks. The application schedule shall be not less than once per year. The opacity of the haul road dust emissions shall not exceed 20% at any time.

G. Gas Boilers

1. Boiler emissions shall be limited to 0.40 lbs of total particulate per million Btu fired, but in no case shall emissions exceed 17.92 pounds of total particulate per hour.

2. Boiler emissions shall be limited to 0.40 lbs of PM-10 per million Btu fired, but in no case shall emissions exceed 17.92 pounds of PM-10 per hour.

3. Visible emissions shall be limited to 20% opacity.

H. Recipient shall comply with all other applicable state, federal and local air quality rules.

SECTION III: Monitoring and Reporting

No ambient monitoring will be required at this time.

SECTION IV: General Conditions

A. Inspection - The recipient shall allow the bureau's representatives access to the source at all reasonable times for the purpose of making inspections, surveys, collecting samples, obtaining data, 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 doses not relieve the applicant from compliance with all applicable statutes and administrative regulations including amendments thereto, nor waive the right of the bureau 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 § 75-2-401, MCA.

E. Appeals - Any person or persons who are jointly or severally adversely affected by the bureau's decision may request, within fifteen (15) days after the bureau renders its decision, upon affidavit, setting forth the grounds therefore, a hearing before the Board. A hearing shall be held under the provision of the Montana Administrative Procedures Act. The bureau'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 bureau'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 air quality personnel at the location of the permitted source.

H. Permit Duration - This permit is null and void if the MDF, plywood plant, sawmill or boiler is torn down, removed, or not capable of being operated for two years.

I. 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 that Section and rules adopted thereunder by the Board of Health and Environmental Sciences.

SECTION V: Operational Reporting Requirements

Plum Creek shall submit the following production and operation information annually to the AQB by March 1st of each year. This information is required for use in calculation of the annual emission inventory.

A. Annual production information calculated on a calendar year basis for the previous calendar year.

Source	Units of Material Processed
MDF Plant	Million sq ft produced 3/4" basis
Plywood Plant	Million sq ft produced 3/8" basis
Lumber Mill	Million board ft produced
Wood-fired Boiler	Millions of BTUs produced
Cyclones and Baghouses	Hours of operation
Veneer Dryer	10^4 ft^2 of plywood on a 3/8" basis processed
Face Dryer	Tons of fiber dried including resin and wax
Core Dryer	Tons of fiber dried including resin and wax

B. Hours of operation for the following sources:

MDF Plant
Plywood Plant
Lumber Mill
Wood-fired Boiler

C. Fugitive dust information consisting of a listing of all plant vehicles including:

Vehicle type;
Vehicle weight;
Number of tires on vehicle;
Average trip length;
Number of trips per day;
Average vehicle speed;
Area of activity;
Vehicle fuel usage (gasoline or diesel) - annual total;
Hours of operation of water trucks;
Chemical dust suppressant application schedule.

Permit Analysis

Plum Creek - Columbia Falls
Permit Modification - Columbia Falls Facility

A. Introduction

Plum Creek Manufacturing currently operates a sawmill, planer, plywood plant, and a medium density fiberboard plant at the Columbia Falls site. Prior to this permit modification only the plywood veneer dryer (AQB #2667), the Wellons unit (AQB #1501), the MDF fiber dryers (AQB #2233), new baghouses at the MDF plant (AQB #2174), and the original MDF plant (AQB #5640051073) were subject to air quality permits. The sawmill and the plywood plant pre-date the Montana Clean Air Act and were not required to obtain a permit unless a modification of the source occurred, or a standard changed affecting the facility.

On July 1, 1987, the Environmental Protection Agency (EPA) promulgated new ambient air quality standards for particulate matter with an aerodynamic diameter of 10 microns or less (PM-10). The annual standard is 50 $\mu g/m^3$ and the 24-hour standard is 150 $\mu g/m^3$. These standards were in turn adopted by the Montana Board of Health and Environmental Sciences on April 15, 1988. On August 7, 1987, EPA designated Columbia Falls as a PM-10 Group II area. Subsequent ambient air monitoring showed violations of the 24-hour PM-10 standard. On November 15, 1990, the 1990 amendments to the Federal Clean Air Act designated Columbia Falls as a nonattainment area. As a result of this designation, the department was required to develop a PM-10 emission control program as part of the State Implementation Plan (SIP) to bring the Columbia Falls area into compliance with the PM-10 standards and demonstrate maintenance of the standards.

In order to identify the emission sources which were contributing to violations of the PM-10 standards, the department conducted a chemical mass balance study (CMB). Plum Creek was identified by this study as contributing 18% to the source apportionment. The veneer dryers contributed 12.73%, the fiber dryers contributed 5.21%, and the boiler contributed 0.96% to the apportionment. The majority of the problem was determined to be re-entrained road dust.

The sources contributing to the PM-10 problem have been identified by the CMB analysis. Control plans are being developed for each source or source category including industrial sources (Plum Creek Manufacturing). Since the SIP must also demonstrate maintenance of the standards, the control plan must also contain enforceable limits on emission points which were not identified as contributing to the problem, but could contribute if emissions were allowed to substantially increase over what they were during the CMB study period. Therefore, this permit sets allowable limits for wood-waste transfer cyclones, fugitive dust, and baghouses as well as limits for the veneer dryers, the fiber dryers and the boiler.

B. Process Description

This facility consists of three plants which are all located at the same site: the sawmill, the plywood mill, and the MDF fiberboard plant. The sawmill and plywood mill receive raw logs by truck. The logs are stored and sorted before being transferred to the mill for sawing into dimension lumber, or to the plywood plant for peeling into veneer. Waste wood such as chips and planer shavings are transferred to the MDF plant for processing into fiberboard. Wood shavings are also received from outside facilities as raw material for the fiberboard plant. All three plants share one boiler as a source of process steam for their operations. The boiler uses wood as a fuel and burns a mixture of bark, sawdust, sanderdust, and reject material from the plywood and fiberboard operations. The veneer dryer is also heated with wood through the use of a Wellons cell. The exhaust gases from the Wellons unit make direct contact with the veneer and then exit to atmosphere through an E-tube wet electrostatic precipitator. This scrubber was installed during the summer of 1991 and should reduce veneer dryer emissions from that recorded during the study period of September 1989 through April 1990.

The fiber dryers are also heated primarily with wood. One Coen and two Energex sanderdust burners heat the flash-tube dryers to dry the wood fiber for fiberboard manufacture. The dryers are controlled with long cone high efficiency multiclones.

Fugitive emissions from wood-waste transfer are controlled with baghouses or cyclones. Fugitive emissions from haul roads and the log deck are controlled with chemical dust suppressant.

The only change reflected in this permit is to include the entire facility in the permit. Also, a reduction in fugitive dust occurs due to chemical stabilization of plant roads and log yard areas.

C. Applicable Regulations

1. ARM 16.8.821 Ambient Standards for PM-10

   Plum Creek must demonstrate compliance with the applicable ambient air quality standards. The latest ambient data is showing compliance with the standards and the permit requirements are designed to establish enforceable limits in order to maintain compliance into the future.

2. ARM 16.8.1113(a) Modification of Permit

   The department is allowed to modify Plum Creek's permit due to a change in the applicable PM-10 standard adopted by the Board of Health and Environmental Sciences. Plum Creek may appeal the department's modification to the Board.

3. ARM 16.8.1113(b) Modification of Permit

   Plum Creek may request a modification of the permit for changed conditions of operation at a source or stack which do not result in an increase in emissions beyond those found in its permit.

4. ARM 16.8.1115 Inspection of Permit

   Plum Creek must maintain a copy of their air quality permit at the mill site and make that copy available for inspection by department personnel upon request.

5. ARM 16.8.1117 Compliance with Other Statutes and Rules

   Plum Creek must comply with all other applicable state, federal, and local laws and regulations.

6. ARM 16.8.1401 Particulate Matter, Airborne

   This section requires reasonable precautions for fugitive emission 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 on major haul roads and on major roads in the log decks, in conjunction with watering, will satisfy these requirements.

7. ARM 16.8.1402 Particulate Matter, Fuel Burning Equipment

   This rule applies to the boiler which was installed during the building of the fiberboard plant (1972).

8. ARM 16.8.1403 Particulate Matter, Industrial Process

   This rule applies to the MDF fiber dryers, and the veneer dryers. This rule allows the weight of the fuel used in the process to be included as part of the process weight.

   Fiber Dryer Calculation:

   Maximum dryer capacity 45000 lb/hr dry (10% moisture)
   - 4500 lb/hr subtract moisture
   41500 lb/hr

   This material consists of 91.5% wood, 8% resin, and 0.5% wax.

   (41500 lb/hr)(0.915) = 38000 lb/hr wood
   (41500 lb/hr)(0.08) = 3300 lb/hr resin
   (41500 lb/hr)(0.005) = 200 lb/hr wax

Input material to dryer

wood 45% moisture	= (38000 lb/hr)(1.45)	= 55100	lb/hr
resin 45% moisture	= (3300 lb/hr)(1.45)	= 4800	"
wax 53% moisture	= (300 lb/hr)(1.53)	= 300	"
Total wt into dryer		60200	"

Add fuel to face dryer

Capacity of Energex burners - 45 million Btu/hr
Fuel heat content - 7450 Btu/lb
(45 MMBtu/hr)/7450 Btu/lb = 6040 lb/hr fuel

Total process weight = 60200 + 6040 = 66240 lb/hr for the face dryer

The allowable calculation for the core dryer is the same for material input. The fuel calculation is different because of the Coen burner with a capacity of 50 million Btu per hour.

Capacity of Coen - 50 MMBtu/hr
Fuel heat content - 7450 Btu/lb
(50 MMBtu/hr)/7450 Btu/lb = 6711 lb/hr fuel

Total process weight = 60200 + 6711 = 66911 lb/hr for the core dryer.

9. ARM 16.8.1404 Visible Air Contaminants

RACT requirements have been set at 20% opacity, and require all existing sources in nonattainment areas to comply.

10. ARM 16.8.900 PSD

The Plum Creek-Columbia Falls facility is a major stationary source; however, it is an existing plant and this permit is a reduction in emissions. Therefore, PSD is not applicable to this permit review.

11. ARM 16.8.1423 NSPS

There is no New Source Performance Standard for plywood plants or medium density fiberboard plants. Therefore, NSPS does not apply to this permit review.

12. Plum Creek - Columbia Falls RACT Analysis

a. Wood-fired Boiler - This boiler was not shown to impact the nonattainment area significantly. Therefore, no change in allowable emissions is applicable to this unit. The fuel burning rule continues to apply.

b. MDF Fiber Dryers - The emission controls for both the face and core dryer were replaced in 1988 and 1989. The

emissions for the fiber dryers were compared with other dryers throughout the country in 1987. At that time the average emission limit from fiber dryers surveyed was 70.3 lbs of particulate per hr, while the Plum Creek dryers were limited to 36 lbs/hr. Since this emission level is approximately one-half of the current average in the industry it qualifies as RACT for fiber dryers.

c. Plywood Veneer Dryers - A new wet electrostatic precipitator has just been installed on the two veneer dryers at Columbia Falls to control emissions from both dryers. The dryers are wood-fired and contain the combustion emissions. Source tests from Oregon show control efficiencies between 76% and 86% as BACT. Since some control of this source is needed to show attainment with the SIP, RACT is required in setting the allowable. The existing process rate rule allows up to 28 lb/hr depending on moisture content of the wet veneer. This would allow 123 tons per year from this source which threatens to exceed the compliance demonstration for the SIP. Therefore, a reduction in the allowable emissions for this source is required by the SIP. The state SIP analysis shows that 110 tons per year will give a sufficient safety margin to assure PM-10 compliance in the area. This calculates to an allowable of 25 lbs/hr for both veneer dryers. In August of 1990, the uncontrolled emissions for these dryers were measured at 32.73 lb/hr of total particulate.

d. Wood-Waste Transfer Systems - These systems use baghouses and cyclones for control of air emissions. These controls have been accepted as RACT for these sources when a 20% visible limitation is included.

e. Fugitive Emissions: Haul roads, Log Deck, and Raw Material Storage - Plum Creek has used watering for dust control on all roads and log yards. This permit has required chemical dust suppression on haul roads and the major runways in the log yard area, and 20% opacity. This is determined to be RACT for these sources. Fugitive emissions from raw material storage are included here also.

D. Department Review of Modification

1. Existing Air Quality

The Columbia Falls area is currently a nonattainment area for the PM-10 standards. However, this area has shown attainment over the last three seasons, and is expected to continue in attainment if the controls instituted by the company and the community are maintained. This permit will make those controls enforceable, which will ensure future compliance with the PM-10 regulations.

2. PM-10 Emission Inventory

a. Summary of Allowable Emissions

	Existing	Proposed
Boiler - 192 x 10^6 MMBtu/hr	254 TPY	254 TPY
Face Dryer	157	157
Core Dryer	159	159
Veneer Dryer	110	110
Cyclones and Bghs	73	73

b. Estimate of Maximum Fugitive Emission from Facility

	TSP (TPY)	PM-10 (TPY)
Planer Process		
Shaving Bin Loadout	1.4	0.8
Chip Bin Loadout	0.6	0.3
Sawmill Process		
Debarker	4.4	2.0
Block Saw	9.1	5.4
Hog (wet)	0.5	0.2
Chip Bin	5.1	3.1
Sawdust Bin	3.6	2.1
Plywood Veneer Prep.		
Debarker	3.8	1.7
Block saw	7.9	4.7
Hog (wet)	0.5	0.2
Lily Pad Chipper	0.05	0.02
Wet Fuel Target Boxes		
Silo 70%	7.1	4.3
Truck Bin 28%	2.8	1.7
Storage Pile 2%	0.4	0.2
Wet Fuel Bin Loadout	0.6	0.3
Chip Bin Loadout	4.1	2.5
Wet Fuel Pile	3.3	2.0
Plywood Layup and Sanding		
Dry Fuel Bin loadout	9.2	5.5
Dry Fuel Silo vent (Wellons)	1.4	0.9
MDF Materials Handling		
Truck Dump	0.8	0.3
Stacker	7.8	3.1
Frontend Loader	2.1	1.3
Raw Material Cleaning	13.0	5.2
Raw Material Storage	3.2	1.3
MDF Forming and Finishing		
Press Vents (6 fans)	52.6	26.3
Board Cooler Fans (10 fans)	21.9	11.0
Press Unload Fans (3 fans)	26.3	13.1

	TSP (TPY)	PM-10 (TPY)
Hog Boiler Fuel Handling		
Sanderdust Silo	3.6	1.4
Truck Dump	0.3	0.1
Hog conveyor	0.3	0.1
Stacker	5.0	2.0
Front End Loader	0.8	0.3
Fuel Pile	6.5	2.6
Mobile Sources		
Log Trucks	18.8	9.4
Chp, Shavg, Sawdst Trks	6.7	3.3
Lumber Trucks	0.9	0.5
Le Tourneaus	8.7	4.4
Front End Loaders (MDF)	0.2	0.1
Front End Loaders (Log Yard)	2.6	1.3
Dump Trucks	0.6	0.3
Employee Vehicles	1.8	0.9
Total Fugitive Estimate	250.35	126.22

3. Impact Analysis

No modeling has been required for this permit because it is a modification of previous permits with a reduction in allowable emissions. This permit modification is necessary to cap the emissions from all sources at the Plum Creek facility. The reduction in emissions from all sources in the Columbia Falls area will ensure compliance with the PM-10 regulations in the area.

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

ENVIRONMENTAL ASSESSMENT (EA)

Project or Application: This is a permit modification for the existing Plum Creek facilities located at Columbia Falls, MT. The modification is needed due to the change in the particulate regulations from TSP to PM-10 required by the federal Clean Air Act.

Description of Project: There is no physical change to the facility required by this permit. Fugitive dust control measures have been added to reduce allowable fugitive emissions.

Benefits and Purpose of Proposal: This permit modification will add enforceable provisions to the Plum Creek permit which will help attain PM-10 compliance in the Columbia Falls area.

Description and analysis of reasonable alternatives whenever alternatives are reasonably available and prudent to consider: The permit modification is required by the changes in federal air quality laws. This permit modification has been discussed with company officials and is the best alternative to bring the Columbia Falls nonattainment area into compliance.

A listing and appropriate evaluation of mitigation, stipulations and other controls enforceable by the agency or another government agency: See permit limitations.

Recommendation: An EIS is not needed for this modification.

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

If an EIS is not required, explain why the EA is an appropriate level of analysis: This is a modification of a permit for an existing facility, with a reduction in allowable emissions. Environmental impacts will decrease as a result, and it will help the area come into compliance with federal and state air quality regulations.

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

Individuals or groups contributing to this EA: AQB staff

EA prepared by: Warren Norton

Date: October 4, 1991

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

		MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ATTACHED
1. TERRESTRIAL AND AQUATIC LIFE AND HABITATS	1.			X			
2. WATER QUALITY, QUANTITY AND DISTRIBUTION	2.			X			
3. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE	3.			X			
4. VEGETATION COVER, QUANTITY AND QUALITY	4.			X			
5. AESTHETICS	5.			X			
6. AIR QUALITY	6.		X				X
7. UNIQUE ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCE	7.			X			
8. DEMANDS ON ENVIRONMENTAL RESOURCE OF WATER, AIR AND ENERGY	8.			X			
9. HISTORICAL AND ARCHAEOLOGICAL SITES	9.			X			
10. CUMULATIVE AND SECONDARY IMPACTS	10.			X			

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

		MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ATTACHED
1. SOCIAL STRUCTURES AND MORES	1.			X			
2. CULTURAL UNIQUENESS AND DIVERSITY	2.			X			
3. LOCAL AND STATE TAX BASE AND TAX REVENUE	3.			X			
4. AGRICULTURAL OR INDUSTRIAL PRODUCTION	4.			X			
5. HUMAN HEALTH	5.			X			
6. ACCESS TO AND QUALITY OR RECREATIONAL & WILDERNESS ACTIVITIES	6.			X			
7. QUANTITY AND DISTRIBUTION OF EMPLOYMENT	7.			X			
8. DISTRIBUTION OF POPULATION	8.			X			
9. DEMANDS FOR GOVERNMENTAL SERVICES	9.			X			
10. INDUSTRIAL AND COMMERCIAL ACTIVITY	10.			X			
11. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS	11.		X				X
12. CUMULATIVE AND SECONDARY IMPACTS	12.			X			

Additional Comments to EA

Potential Impact on Physical Environment

6. Air Quality - The new air quality control equipment installed by industry in the area will enhance the visibility of the airshed and help to attain and maintain the PM-10 attainment levels.

Potential Impact on Human Environment

11. Locally Adopted Environmental Plans and Goals - The city council has worked for the last two seasons to curb emissions from city streets and wood stoves. The additional controls installed by industry in the area will help attain the PM-10 standards in Columbia Falls.

AIR QUALITY PERMIT

Issued To: Champion International Corp.
Libby Operations
P.O. Box 1570
Libby, MT 59923

Permit #2627-M
Notification of Permit Modification: 7/10/91
Date of Final Modification: 7/25/91

SECTION I: Permitted Facilities

An air quality permit is hereby granted to the above-named permittee, hereinafter referred to as recipient, pursuant to Section 75-2-204 and 211, MCA, as amended, and Subchapter 11, PERMIT, CONSTRUCTION AND OPERATION OF AIR CONTAMINANT SOURCES, ARM 16.8.1101 through 16.8.1118 as amended, for the entire mill site located at P. O. Box 1570, Libby, MT, including the following:

A. The No. 7 boiler with a multiclone control and a slip stream scrubber, design capacity of 132 million Btu/hr.

B. The No. 8 boiler with a full stream wet scrubber, design capacity of 200 million Btu/hr.

C. The No. 9 boiler with a full stream wet scrubber, design capacity of 256 million Btu/hr.

D. Fugitive dust from mill vehicles and log yard activity.

E. Veneer dryers.

F. Wood waste cyclones and baghouses.

SECTION II: Limitations and Conditions

A. Boiler No. 7

1. Total particulate emissions shall be limited to 29.7 lbs/hr, and 130 tons per year.

2. PM-10 emissions shall be limited to 20.8 lbs/hr, and 91 tons per year.

3. Total particulate emissions shall be limited as per ARM 16.8.1402.

4. Visible air contaminants shall be limited to 20% opacity, as measured by Method 9, 40 CFR Part 60, Appendix A.

5. A stack test shall be required to determine compliance with the total particulate limitation, and to determine what steam production rate can be achieved while meeting the total

particulate and PM-10 limitations of Conditions A.1 and A.2. This test shall be performed prior to December 31, 1991, and is required annually for three years. The testing frequency will be re-evaluated after that time. The test methods shall conform to 40 CFR Part 51, Appendix M, for PM-10 and 40 CFR Part 60, Appendix A, for total particulate. Any exceedance of this steam production limitation will be considered an exceedance of Conditions A.1 and A.2.

6. For all stack tests, a pretest conference shall be held between the applicant, the testing firm and the department at least 30 days prior to the test. The department may require a written test protocol, including quality assurance procedures, prior to the pretest conference.

7. Champion shall maintain steam flow charts showing the firing rate of Boiler No. 7. A monthly report shall be submitted to the department showing the average daily steam flow from No. 7, and the highest hourly steam flow for that day. If records show that hourly steam flow exceeds the steam flow limit associated with the emission limits established in Conditions A.1 and A.2., it shall be considered a violation of this permit. The steam flow limit shall be established as per Condition A.5.

8. Champion may operate Boiler No. 7 at emission levels higher than the limits set in Conditions A.1 and A.2. above provided either Boiler No. 8 or No. 9 is down for maintenance. Emissions from Boiler No. 7 are limited to 0.391 lb/10^6 Btu fired during this time. At no time will the combined particulate emissions from all three boilers exceed 93.5 lbs/hr. During periods of elevated ambient particulate levels, such as air pollution alerts, the department may rescind Condition A.8 for this boiler.

9. Champion shall measure the Btu, moisture and fuel input to the boiler during the stack tests required in Condition A.5.

B. Boiler No. 8

1. Total particulate emissions shall be limited to 0.14 lbs per million Btu fired, and 28 lbs/hr, and 123 tons per year.

2. PM-10 emissions shall be limited to 0.14 lbs/10^6 Btu fired, and 28 lbs/hr, and 123 tons/yr.

3. Nitrogen oxide emissions shall be limited to 0.3 lbs/10^6 Btu fired, and 60 lbs/hr, and 263 tons/yr.

4. Carbon monoxide emissions shall be limited to 4 lbs/10^6 Btu fired, and 800 lbs/hr, and 3504 tons/yr.

5. Visible air contaminants shall be limited to 20% opacity, averaged over six consecutive minutes, as specified by 40 CFR Part 60, Appendix A, Method 9.

6. Every three years, a stack test shall be required to verify Conditions B.1, B.3, and B.4. These tests shall be performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 10, for total particulate, NOx and CO. The department reserves the right to require additional testing in accordance with the provisions of ARM 16.8.704 as it deems necessary to inventory air pollution emissions or to verify compliance with this permit or any other air quality rule.

7. For all stack tests, a pretest conference shall be held between the applicant, the testing firm and the department at least 30 days prior to the test. The department may require a written test protocol, including quality assurance procedures, prior to the pretest conference.

8. The scrubber shall include a measuring device to measure the pressure drop across the scrubber. A graph of pressure drop versus boiler steam load shall be developed to check on scrubber operation. A liquid level gauge to measure scrubber liquid levels shall be installed. A record of pressure drop and scrubber liquid levels shall be recorded once per hour. This record shall be available for review by the department when requested.

9. Champion shall measure the Btu, moisture and fuel input to the boiler during the stack test required in Condition 8.6.

C. Boiler No. 9

1. Total particulate emissions shall be limited to 0.14 lbs/10^6 Btu fired, and 35.8 lbs/hr, and 157 tons/year.

2. PM-10 emissions shall be limited to 0.14 lbs/10^6 Btu fired, and 35.8 lbs/hr, and 157 tons/year.

3. Nitrogen oxide emissions shall be limited to 0.3 lb/10^6 Btu fired, and 76.8 lbs/hr, and 336 tons/year.

4. Carbon monoxide emissions shall be limited to 1.9 lbs/10^6 Btu fired, and 486 lbs/hr, and 2130 tons/year.

5. Visible air contaminants shall be limited to a maximum of twenty percent (20%) opacity, averaged over six consecutive minutes, as specified by 40 CFR Part 60, Appendix A, Method 9.

6. Every three years, a stack test shall be required to verify Conditions C.1, C.3, and C.4. These tests shall be performed in accordance with 40 CFR Part 60, Appendix A, Methods 1

through 10 for total particulate, NOx, and CO. The first test is required by October 21, 1991, in accordance with the consent decree and letter authorizing the extension. The department reserves the right to require additional testing in accordance with the provisions of ARM 16.8.704 as it deems necessary to inventory air pollution emissions or to verify compliance with this permit or any other air quality rule. A one-time PM-10 test is required for this boiler for the purpose of inventorying actual PM-10 in the airshed. The PM-10 test shall conform to 40 CFR Part 51, Appendix M.

7. For all stack tests, a pretest conference shall be held between the applicant, the testing firm and the department at least 30 days prior to the test. The department may require a written test protocol, including quality assurance procedures, prior to the pretest conference.

8. The scrubber shall include a measuring device to measure the pressure drop across the scrubber. A graph of pressure drop versus boiler steam load shall be developed to check on scrubber performance. A liquid level gauge to measure scrubber liquid levels shall be installed. A record of pressure drop and scrubber liquid levels shall be recorded once per hour. This record shall be available for review by the department when requested.

9. Champion shall measure the Btu, moisture and fuel input to the boiler during the stack test required in Condition C.6.

D. Fugitive Dust Controls

1. Chemical dust suppressant shall be applied to the major haul routes throughout the plant to control fugitive dust from haul trucks. The application schedule shall be not less than once per year. If the opacity of the haul road dust emissions exceeds 15% at any time, reapplication of the dust suppressant shall be required.

2. Chemical dust suppressant shall be applied to the major roads on the log yard to control fugitive dust from all log handling equipment. The application schedule shall be no less than once per year. Water sprays shall be used as necessary to control dust emissions on active areas of the log yard. If the opacity of the log yard dust emissions exceeds 15% at any time, reapplication of the dust suppressant shall be required.

E. Veneer Dryers

1. PM-10 emissions shall be limited to the following:

Large dryer (15000 sq-ft/hr) - 16.85 lb/hr, and 74 TPY;
small dryer (10500 sq-ft/hr) - 13.27 lb/hr, and 58 TPY.

2. Visible air contaminants shall be limited to a maximum of 20% opacity averaged over six consecutive minutes as specified by 40 CFR Part 60, Appendix A, Method 9.

F. Wood Waste Cyclones and Baghouses

1. PM-10 emissions shall be limited to:

Cyc#	Description	SCFM	Allowable lbs/hr	TPY
4	Ply Sand Bghs	36000	0.6	3
5	Ply Hog, T&G Saw cyc	28000	3.7	16
6	Ply #1 cyc	15000	2.0	9
7	Ply #2 cyc	22500	2.9	12
8	Ply #3 cyc	20000	2.7	12
9a	Ply chp load cyc	5000	.7	3
9b	Std chp ld cyc	9000	1.2	5
9c	Saw chp ld cyc	9200	1.2	5
10	Ply hgfuel to fuel cyc	6000	.8	4
12	Stud Plnr#1 cyc	16300	2.1	9
13	Stud Plnr#2 cyc	30000	3.9	17
15	Stud trk bn cyc	9000	1.2	5
19	Saw shvg bn cyc	6000	.8	4
20	Saw plnr shvg cyc #8	38000	4.9	21
21a	Plnr trim saw cyc	16500	2.1	9
21b	Plnr hog cyc	10700	1.4	6
21c	Saw plnr cyc #7	27000	3.5	15
22	Finger Jointer	10000	1.3	6
29	Lily pad chp cyc	2500	.4	2
30	Pwrhs cyc	10000	1.3	6
31	Stud trm cyc	20000	2.7	12
32	Stud salv & Gn chp cyc	9200	1.2	5
37	Stractan Bghs	10000	.2	1
	Total Cyclone Allowable Emissions			187

2. Visible air contaminants shall be limited to a maximum of 20% opacity averaged over six consecutive minutes as specified by 40 CFR Part 60, Appendix A, Method 9.

G. Recipient shall comply with all other applicable state, federal and local rules.

SECTION III: Monitoring and Reporting

No ambient monitoring will be required at this time.

SECTION IV: 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, 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 - Champion may request, within fifteen (15) days after the department issues its "Notification of Permit Modification," 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 permit modification 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.

Permit Analysis

Champion-Libby
Permit Modification - Libby Mill

A. Introduction

Champion International Corporation currently operates a stud sawmill and planer, finger jointer, stractan, and plywood mill in Libby, Montana. Prior to this permit modification only boilers #8 (#2380) and #9 (#2627) were subject to an air quality permit. All other emission points at the Champion mill predated the Montana permit requirements and were not required to obtain a permit unless a modification of the source occurred, or a standard changed affecting the facility.

On July 1, 1987, the Environmental Protection Agency (EPA) promulgated new ambient air quality standards for particulate matter with an aerodynamic diameter of 10 microns or less (PM-10). The annual standard is 50 $\mu g/m^3$ and the 24-hour standard is 150 $\mu g/m^3$. These standards were in turn adopted by the Montana Board of Health and Environmental Sciences on April 15, 1988. On August 7, 1987, EPA designated Libby as a PM-10 Group I area, due to numerous violations of both the annual and the 24-hour PM-10 standards. On November 15, 1990, the 1990 amendments to the Federal Clean Air Act designated the Libby Group I area as a PM-10 nonattainment area. 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 (SIP) to bring the Libby area into compliance with the PM-10 standards and demonstrate maintenance of the standards.

In order to identify the emission sources which were contributing to the violations of the PM-10 standards, the department conducted a chemical mass balance study (CMB). The only Champion International emission points which were identified as contributors in the CMB study were the three boilers. Specifically, the contributions from the boilers to the PM-10 annual and the exceedance day ambient levels were 1.6% (1.1 $\mu g/m^3$) and 0.7% (1.4 $\mu g/m^3$), respectively.

Since the sources contributing to the violations of the PM-10 standards have been identified, control plans are being developed for each source or source category (wood stove control programs, sanding material specifications, and street sweeping) including industrial sources (Champion International Corp.). Since the SIP must also demonstrate maintenance of the standards, the control plans must also contain enforceable limits on emission points which were not identified as contributing to the problem (Champions veneer dryers, wood transfer cyclones, and fugitive dust) but could contribute if their emissions were allowed to substantially increase over what they were during the CMB study period. Therefore, this permit not only reduces allowable emissions for the boilers, but also establishes enforceable allowable emission limits on the veneer dryers, wood waste transfer cyclones and baghouse, and fugitive dust.

This permit modification serves as the legal basis to reduce the allowable emissions at the boilers and establish allowable emissions on other emission points which were unpermitted in the past. Specifically this permit reduces the allowable emissions on boiler #8, incorporates a recently issued permit to install a new high efficiency scrubber on boiler #9 and thereby reduce both the actual and allowable emissions, reduces the allowable emissions from boiler #7 by restricting its operating level, and establishes allowable emission limits on all other Champion emission points.

Using the CMB study period (10/87 through 11/88) as the base year, this permit will result in a 55% reduction in allowable emissions from the boilers.

B. Process Description

Raw logs are received by truck and rail and unloaded at the plant. Log handlers sort the logs and transport them to various log decks. Additional log handlers transport the logs to the studmill, sawmill or plywood mill.

Upon arrival at the mills the logs are debarked and processed through the headrig (saw) and several resaws until the logs are converted to raw lumber. The raw lumber is transported by forklifts to various storage areas where it will remain until it is again transported by forklift to the kilns for drying. The slabs which are generated at the sawmill are chipped and transported by a high pressure air system to the chip storage bins and subsequent loadout to chip trucks destined for other wood product facilities. The sawdust and bark are also transported by a high pressure air system conveyor to the hogged fuel pile to be used as fuel for boilers #7, #8, and #9.

The dried lumber is transported by forklift to the planer mill for planing. The planer shavings are transported by a high pressure air system to the hogged fuel pile or truck bins for loadout to other facilities. The finished lumber is stored on the mill site until it is loaded on commercial trucks or railroad cars for transport to wholesale markets.

Raw logs also enter the plywood mill where the lathe turns the log in to thin pieces of veneer. The veneer is dryed in the veneer dryers and conveyed on to the plywood press where glue is applied and various sheets of veneer are pressed into plywood. The 4' by 8' sheets of plywood are sanded to produce a smooth surface and transported to covered storage areas for subsequent shipment to wholesale outlets by commercial truck or railroad car.

The boilers serve as a source of steam for the drying kilns, veneer dryers, and turbine generators producing electricity for mill use or sale on the utility grid as a cogenerator.

Since this permit primarily deals with tightening allowable emission limits, establishing allowable emission limits, and combining all existing permits (including the permit for the new scrubber on boiler #9) into one permit, the only physical change which will occur at the mill as a result of this permit is to limit the steam production on boiler #7 in order to reduce the overall boiler emissions.

C. Applicable Regulations

1. ARM 16.8.821 Ambient Standards for PM-10. Champion International Corp. must demonstrate compliance with the applicable ambient air quality standards. The preliminary SIP demonstration of attainment performed by the department indicates that the emission limitations contained in this permit, along with control measures applied to other sources, will bring Libby into compliance with the PM-10 standards.

2. ARM 16.8.1113(a) Modification of Permit. The department is allowed to modify Champion International Corporations' permit due to a change in an applicable standard (PM-10) adopted by the Board of Health and Environmental Sciences. Champion may appeal the departments modification to the Board.

3. ARM 16.8.1115 Inspection of Permit. Champion must maintain a copy of their air quality permit at the mill site and make that copy available for inspection by department personnel upon request.

4. ARM 16.8.1117 Compliance with Other Statues and Rules. Champion International Corporation must comply with all other applicable state, federal, and local laws and regulations.

5. 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 on major haul roads and as needed on major roads in the log decks, in conjuction with watering, will satisfy these requirements.

6. ARM 16.8.1402 Particulate Matter, Fuel Burning Equipment. Boiler #7 must meet the requirements of this rule. However, the more stringent limits contained in this permit supersede this rule for boilers #8 and #9.

7. ARM 16.8.1403 Particulate Matter, Industrial Process. The requirements of this rule are superseded by the stricter emission limits established in the permit, except that this rule requires an emission limit of 16.85 lbs/hr on the large veneer dryer and 13.27 lbs/hr on the small dryer.

8. ARM 16.8.1404 Visible Air Contaminants. The requirements of this permit either supersede this rule because they are more stringent or they are equivalent.

9. Libby RACT Analysis

   a. No. 7 Boiler

This is an old wood-fired boiler which has air emission controls consisting of multiclones and a side stream scrubber. The side stream scrubber was added in 1976 to comply with the Montana fuel burning rule. EPA policy has indicated that multiclones are not to be given credit as RACT for SIP purposes in nonattainment areas. Therefore, an emission limit was imposed on the boiler by the SIP process which, when added to other emission reductions in the area, will show attainment with federal and state PM-10 regulations. The new boiler limit will be met by de-rating the boiler with source tests to show compliance. This emission reduction is equivalent to the reduction which is attainable with a qualified RACT scrubber.

b. No. 8 Boiler

This is an old wood-fired boiler which has recently been updated by adding an automatic stoker and feed controls, and installation of a new full stream wet scrubber. This scrubber was determined to be BACT in the permitting process and, therefore, meets the requirements for RACT.

c. No. 9 Boiler

This is an old wood-fired stoker boiler which is currently undergoing an upgrade. A new full stream wet scrubber is being installed during the summer of 1991, and this scrubber has also been determined to meet BACT requirements in the permit process. Therefore, it also meets the requirements of RACT.

d. Veneer Dryers

These two dryers are existing units which were installed prior to 1968. These sources were not identified in the CMB study as contributing to the PM-10 nonattainment area. Therefore, these sources are included in the emission inventory and no control is credited to the PM-10 SIP. A new opacity limitation of 20% has been placed on this source to comply with RACT guidelines. It is also noted that EPA RACT guidelines do not require control of all sources if they are not shown to be a part of the problem.

e. Cyclones and Baghouses

These sources were not covered under permit in the past. The SIP inventory asked for all emission sources down to 1 ton per year. These have been inventoried and new emission limits have been included on the permit. The CMB did not identify these sources as contributing to the problem and were not included in the SIP compliance plan.

f. Fugitive Dust

Emission limits for this source are also included in the new permit with chemical stabilization required as control. This is acknowledged as best available work practice in the mining industry, and meets RACT for the plywood industry also.

D. Department Review of Modification

1. Existing Air Quality

The Libby area is currently a nonattainment area for PM-10 standards. The department has determined, based on its preliminary demonstration of attainment, that the emission limitations contained in this permit, along with control measures applied to other sources, will bring Libby into compliance with the PM-10 standards.

2. Emission Inventory

Summary of Allowable Emissions		Existing	Proposed
No. 7 Boiler	Total Particulate	.391 lb/mmBtu	.391 lb/mmBtu
		51.6 lb/hr	29.7 lb/hr
		226 TPY	130 TPY
	PM-10	51.6 lb/hr	20.8 lb/hr
		226 TPY	91 TPY
No. 8 Boiler	Total Particulate	.23 lb/mmBtu	.14 lb/mmBtu
	and PM-10	46 lb/hr	28 lb/hr
		201 TPY	123 TPY
	NOx	*	0.3 lb/mmBtu
		*	60 lb/hr
		*	263 TPY
	CO	*	4 lb/mmBtu
		*	800 lb/hr
		*	3504 TPY

*These limits have been adjusted based on information from stack tests conducted in 1989 and 1990.

No. 9 Boiler	Total Particulate	.351 lb/mmBtu	.14 lb/mmBtu
	and PM-10	89.7 lb/hr	35.8 lb/hr
		393 TPY	157 TPY
	NOx	--	0.3 lb/mmBtu
		--	76.8 lb/hr
		--	336 TPY
	CO	--	1.9 lb/mmBtu
		--	486 lb/hr
		--	2130 TPY

Veneer Dryers PM-10

Large Dryer	16.85 lb/hr 74 TPY	16.85 lb/hr 74 TPY
Small Dryer	13.27 lb/hr 58 TPY	13.27 lb/hr 58 TPY
Cyclones and Baghouses*	187 TPY	187 TPY

*NOTE: These emission limits were established by multiplying the maximum emissions which could be emitted considering an AP-42 PM-10 emission factor and continuous operation by 1.25. Since these emission factors have an error band and because these emission points never had an emission limit in the past, the department chose to multiply the maximum emissions by 1.25. This assures the source and the department that compliance can be maintained. Baghouse emissions are based on an emission factor of 0.002 gr/dscf. This was derived from a cyclone factor of 0.16 gr/dscf (AP-42, 10.4.1) and 99% control.

3. Impact Analysis

No modeling has been required for this permit because it is a modification of previous permits with a reduction in allowable emissions. This permit modification is necessary to achieve emission reductions at the boilers and cap the emissions from other Champion emission points. These reductions, in conjunction with reductions at other sources, will provide the emission reduction necessary to bring Libby into compliance with the PM-10 standards.

4. Analysis of Permit Limitation No. 8 for the #7 Boiler, Champion, Libby

Champion has requested to operate the #7 boiler at full load when either #8 or #9 are down for maintenance. The allowable emission rate for the #7 boiler at full load has been established at 51.6 lb/hr by the fuel burning rule. This emission rate plus the emission from either #8 or #9 still falls below the 93.5 lb/hr allowable determined as acceptable by the SIP process.

If No. 9 is down:	No. 7 - 51.6 lb/hr No. 8 - 28.0 lb/hr Total - 79.6 lb/hr
If No. 8 is down:	No. 7 - 51.6 lb/hr No. 9 - 35.8 lb/hr Total - 87.4 lb/hr

Therefore, the SIP-based permit limitation of 93.5 lb/hr is protected at all times. Compliance is demonstrated by source tests and scrubber monitoring on a regularly scheduled basis.

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

ENVIRONMENTAL ASSESSMENT (EA)

Project or Application: Modification of Champion International Corporation permits #2380 and #2627.

Description of Project: This permit modification will reduce Champion's allowable emissions to a level where compliance with the PM-10 standards can be demonstrated. This is part of a control plan developed by the department to bring the Libby area into compliance with the ambient PM-10 standards, and is required as part of the State Implementation Plan (SIP).

Benefits and Purpose of Proposal: This modification will reduce Champion's allowable emissions and, in conjunction with control plans for other sources, bring the Libby PM-10 nonattainment area into compliance with the ambient PM-10 standards.

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

A listing and appropriate evaluation of mitigation, stipulations and other controls enforceable by the agency or another government agency: A complete listing of enforceable permit conditions and a permit analysis is contained in permit #2627M. Further information is contained in the Libby SIP.

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: This modification will reduce allowable particulate emissions from Champion.

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

Individuals or groups contributing to this EA: AQB staff.

EA prepared by: Warren Norton

Date: May 7, 1991

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

		MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ATTACHED
1. TERRESTRIAL AND ACQUATIC LIFE AND HABITATS	1.			X			
2. WATER QUALITY, QUANTITY AND DISTRIBUTION	2.			X			
3. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE	3.			X			
4. VEGETATION COVER, QUANTITY AND QUALITY	4.			X			
5. AESTHETICS	5.			X			
6. AIR QUALITY	6.		X				X
7. UNIQUE ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCE	7.			X			
8. DEMANDS ON ENVIRONMENTAL RESOURCE OF WATER, AIR AND ENERGY	8.			X			
9. HISTORICAL AND ARCHAEOLOGICAL SITES	9.					X	
10. CUMULATIVE AND SECONDARY IMPACTS	10.			X			

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

		MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ATTACHED
1. SOCIAL STRUCTURES AND MORE	1.				X		
2. CULTURAL UNIQUENESS AND DIVERSITY	2.				X		
3. LOCAL AND STATE TAX BASE AND TAX REVENUE	3.			X			
4. AGRICULTURAL OR INDUSTRIAL PRODUCTION	4.			X			
5. HUMAN HEALTH	5.			X			X
6. ACCESS TO AND QUALITY OR RECREATIONAL & WILDERNESS ACTIVITIES	6.			X			
7. QUANTITY AND DISTRIBUTION OF EMPLOYMENT	7.			X			
8. DISTRIBUTION OF POPULATION	8.			X			
9. DEMANDS FOR GOVERNMENTAL SERVICES	9.			X			
10. INDUSTRIAL AND COMMERCIAL ACTIVITY	10.			X			X
11. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS	11.			X			
12. CUMULATIVE AND SECONDARY IMPACTS	12.			X			

Potential Impact on Physical Environment

6. Air Quality - This permit modification will have a moderate impact on air quality in that it is part of the overall control strategy to bring the Libby area into compliance with the ambient PM-10 standards. Allowable emissions from the boilers will be reduced 55% as a result of this permit. This permit will also establish allowable emission limits for other emission points within the Champion facility which did not have emission limits in the past.

Potential Impacts on Human Environment

5. Human Health - This permit modification will have a small but positive impact on human health. The permit modification is part of the control strategy to bring the Libby area into compliance with the ambient PM-10 standards. Compliance with this standard should have a positive effect on the health of the citizens of Libby.

10. Industrial Commercial Activity - While this modification will have only a minor effect on the current level of industrial activity at Champion, their allowable operating rate for boiler #7, under this permit modification, will be limited to less than their previous allowable operating rate. Champion could, however, increase the allowable operating rate for boiler #7 contained in this permit modification if additional emission controls beyond those controls contained in this permit modification are applied to the boiler or to other sources in the area. The overall mill production levels could also be increased if substantive process changes occur which lower the emissions or the control strategy applied in Libby lowers ambient PM-10 levels below the standard and the area is designated attainment for the particulate standards. Any such change must be approved by the department as a permit modification.

If this modification were not imposed, the department would not be able to show compliance with the PM-10 standard. Libby would then be subjected to EPA penalties such as withholding of highway funds and emission offsets for new industry. This would have far more serious consequences for the industrial sector and commercial activity in Libby.

DEPARTMENT OF
HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU

STAN STEPHENS, GOVERNOR

COGSWELL BUILDING

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JG	INIT cc	1/8
WW		1-8
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TEAM LDR		ENF

NOTIFICATION OF PERMIT MODIFICATION

Date of Mailing: January 8, 1992

Name of Applicant: Louisiana-Pacific Corporation

Location: Missoula, Township 13 North, Range 19 West, Section 8, Missoula County, Montana.

Proposed Action: The department proposes to issue a permit modification, with conditions, to the above-named permittee. The permit will be assigned number 2303-M.

Proposed Conditions: See attached permit. More stringent emissions limitations may be necessary in the future if the present SIP fails to show attainment with federal and state air quality regulations.

Procedures for Appeal: The permit shall be deemed modified in accordance with this notice within 15 days of this notice, which is January 23, 1992, unless the permittee requests a hearing before the Montana Board of Health and Environmental Sciences. Any appeal must be filed within fifteen (15) days after the department notifies the permittee of its intention to modify the permit. The request for hearing shall contain an affidavit setting forth the grounds for the request. Any hearing will be held under the provisions of the Montana Administrative Procedures Act. Submit requests for hearing in triplicate to: Chairman, Board of Health and Environmental Sciences, Cogswell Building, Helena, Montana 59620. The filing of a request for hearing postpones the effective date of the modifications to the permit until the decision of the board becomes final or judicial review has been concluded.

Sincerely,

Jeffrey T. Chaffee, P.E.
Chief

AIR QUALITY PERMIT

Issued to: Louisiana-Pacific Corp.
Missoula Operations
P. O. Box 4007
Missoula, MT 59806

Permit # 2303-M
Notification of Permit Modification: 1-8-92
Date of Final Modification: 1-23-92

SECTION I: Permitted Facilities

An air quality permit is hereby granted to the above-named permittee, hereinafter referred to as Louisiana-Pacific, pursuant to Section 75-2-204, and 211, MCA, as amended, and Subchapter 11, PERMIT, CONSTRUCTION AND OPERATION OF AIR CONTAMINANT SOURCES, ARM 16.8.1101 through 16.8.1118 as amended, for the entire mill site located at P. O. Box 4007, Missoula, MT, including the following:

A. Six direct contact wood particle dryers with multiclone control. Each of the six dryers has a rated capacity of 20,000 lb/hr of wood. These dryers are heated with the exhaust gases from the sander dust boiler, the Roemmc sander dust burner, and the Coen sander dust burner. The sander dust boiler has a capacity of 55 million Btu/hr, the Roemmc sander dust burner capacity is 50 million Btu/hr, and the Coen sander dust burner capacity is 35 million Btu/hr. Each of the combustion units has an abort stack to divert the hot gases to the atmosphere in case of fire or other problems.

B. Two direct contact predryers with multiclone control. Each predryer has a rated capacity of 17,000 lb/hr of wood. These predryers are also heated with the exhaust from the Coen sander dust burner.

C. A Geka hot oil heater with a capacity of 20 million Btu/hour fired with natural gas. The hot oil is used in the continuous press line.

D. Wood waste cyclones and baghouses.

Source	Description	Control	Flow Rate
PC 301	Rej hopper	Bghs G&H	26680 CFM
PC 302	Blending area	"	
PC 401A	Form mach to face	"	26680 "
PC 401B	Form mach to core	"	
PC 404	Mat trim saw pneu	Cyclone	
PC 405	Line clean up pneu	Cyclone	
PC 501 A & B	5X25 Saws & hog	Bghs I	48000 CFM
PC 503 A & B	5X16 Saws & hog	"	
PC 502 A, B & C	Sander	Bghs M	48000 "
PC 504	Saws & hog to stor	Bghs A	8000 CFM
PC 602	Reman relay	"	
PC 507	Saws & hog edging	Bghs E&F	30000 "
			30000 "

Source	Description	Control	Flow Rate
PC 508	Saws & hog edging	Bghs B&C	26680 CFM
			26680 "
PC 509	New sander	Bghs K&L	47000 "
			47000 "
PC 510	Sanderdust relay	Bghs D	1000 "
PC 601	Reman pneu	Bghs J	16000 "
PC 805	Bullnose & saws	Bghs N	48000 "

E. Fugitive dust from receiving, storage and handling of raw material wood particles. This includes the receiving of shavings and sawdust by truck, unloading and conveying to the press line, the indoor storage area, or the outdoor storage pile via the radial stacker. It also includes fugitive emissions from the reclaiming of this material from the outdoor storage pile by front-end loader and conveying back to the press line.

F. This plant was existing in 1968 and operated with grandfather status until 1986 when a fifty percent expansion of the plant capacity was permitted (AQ Permit #2303 - dated September 15, 1986).

SECTION II: Limitations and Conditions

A. Plantwide Conditions:

1. All information contained in the 1986 permit application including, but not limited to, equipment lists, drawings, and specifications are considered conditions of the permit, except where more specific requirements are specified in this permit.

2. All stack and vent emissions are limited to 20% opacity. Compliance with this condition shall be determined by visual observation in accordance with 40 CFR Part 60, Appendix A, Method 9.

3. Louisiana-Pacific may be required to reduce emissions beyond the levels specified in this permit and accept more stringent limitations in a permit modification if, in the opinion of the department, future studies identify the particleboard plant as a significant contributor to ambient pollutant concentrations where these concentrations exceed or may exceed Montana or federal ambient air quality standards.

B. Wood Particle Dryers (1, 2, 3, 4, C, D, and predryers A and B)

1. Particulate emissions from each dryer and predryer shall not exceed 6.0 lb/hr of total particulate and 6.0 lb/hr of PM-10.

2. In order to demonstrate compliance with the emission limitations contained in paragraph B.1 above, Louisiana-Pacific shall perform annual source tests on one existing dryer (dryer 1, 2, 3, or 4) and one new dryer (dryer C or D) or one predryer (dryer A or B). The exact dryers to be tested shall be at the discretion of Louisiana-Pacific except that all dryers must be tested at least once during each five years of operation.

3. The source testing required in paragraph B.2 above shall consist of three complete test runs performed in accordance with department procedures and in accordance with 40 CFR Part 60, Appendix A (total particulates) and 40 CFR Part 51, Appendix M (PM-10). Louisiana-Pacific may utilize the total particulate test method (40 CFR Part 60, Appendix A) as a surrogate method for PM-10, but testing results in excess of 6.0 lb/hr shall constitute a violation of the total particulate and PM-10 limitations. Louisiana-Pacific shall also comply with the following source testing requirements:

   a. All dryers and predryers must be capable of accommodating the above-mentioned source testing.

   b. Louisiana-Pacific shall provide the department with at least a 15-day prior notice before the tests are performed.

   c. Reports of the source test results shall be submitted to the department within 60 days following each test.

4. Louisiana-Pacific shall install and operate temperature sensors at the inlet of each wood particle dryer and predryer. The temperature sensors shall have a remote readout and audible alarm. The alarm system shall be audible to the dryer or predryer operator and the operator(s) of all three combustion units. The alarm system shall become activated when exhaust gas exceeds 475 degrees F. Data from the temperature sensors shall be maintained for a period of at least 2 years and shall be available to the department upon request.

5. Emissions from each dryer or predryer shall not exceed 20% opacity as determined in accordance with 40 CFR Part 60, Appendix A, Method 9.

C. Baghouse Emission Limitations

1. All emission points equipped with baghouses are required to meet an emission limitation of 0.02 grains per dry standard cubic foot of exhaust gas for total particulate and 0.02 grains per dry standard cubic foot of exhaust gas for PM-10. Compliance with this emission limitation shall be by visual inspection unless such inspections indicate, in the opinion of the department, probable noncompliance with the 0.02

gr/dscf limitation, at which time source testing may be required.

2. All sander dust handling systems are to be enclosed and equipped with baghouse control. No outside storage of sander dust shall be allowed.

3. Contaminated floor sweepings commonly used for suspension burner fuel may be stored outside if the material is limited to no more than 50 cubic yards and the material is enclosed, covered, or surrounded by a windbreak in such a manner as to prevent blowing dust.

D. Cyclone Emission Limitations

All emission points equipped with cyclones are required to meet a 20% opacity limitation, 2.0 lbs/hr for total particulate, and 0.8 lbs/hr for PM-10. Compliance with this emission limitation shall be by visual inspection unless such inspections indicate, in the opinion of the department, probable noncompliance with this limitation at which time source testing may be required.

E. Particleboard Press Vent Limitations

1. The three batch press vent fans shall be limited to 5.75 lb/hr of total particulate and 5.75 lb/hr of PM-10.

2. The batch prepress vent fans shall be limited to 1.92 lb/hr of total particulate and 1.92 lb/hr of PM-10.

3. The continuous press vent fans shall be limited to 1.92 lb/hr of total particulate and 1.92 lb/hr of PM-10.

4. The continuous prepress vent fans shall be limited to 1.92 lb/hr of total particulate and 1.92 lb/hr of PM-10.

5. Compliance with this emission limitation shall be by visual inspection unless such inspections indicate, in the opinion of the department, probable noncompliance with this limitation at which time source testing may be required.

F. Fugitive Emission Controls

1. All fugitive emissions are limited to 20% opacity. Compliance with this condition shall be determined by visual observation in accordance with 40 CFR Part 60, Appendix A, Method 9.

2. Paving or dust suppressant shall be applied to all routinely used haul roads within the plant area. If dust suppressant is used it shall be reapplied at least once per year. Additional application of dust suppressant may be required if fugitive dust exceeds 20% opacity from the haul roads at

any time. Opacity shall be determined by EPA Method 9, CFR Part 60, Appendix A.

3. Dust suppressant measures shall be applied to the shavings and sawdust storage pile sufficient to control airborne wood dust. The opacity of these emissions shall not exceed 20% opacity as determined by EPA Method 9, 40 CFR Part 60, Appendix A.

4. Fugitive particulate emissions from the raw material storage pile including unloading, conveying to the pile, and transfer back to the mill shall not exceed 320 lbs/day for total particulate emissions, or 115 lbs/day PM-10. Compliance with these limitations shall be determined as follows:

Emissions (TSP or PM-10) = E(OU) + E(TP) + E(RP)

Where:
OU = Outside raw material unloading (tons)
TP = Raw material transfer to outside storage (tons)
RP = Raw material reclaim from outside storage (tons)
E(OU) = (OU)(1 - control eff)(Emiss Fact)(.33)
E(TP) = (TP)(1 - cont eff)(Emiss Fact)(.33)
E(RP) = (RP)(1 - cont eff)(Emiss Fact)(.33)
Emission Factor = 1.0 lb/tn for total particulate
and 0.36 lb/tn for PM-10

Notes: 1) The control efficiencies as of 12/10/91 are considered to be zero.

2) The 0.33 is utilized to distribute the emission factor to each emission point within the process since the 320 lb/day and the 115 lb/day limits are based on 50% of the raw material passing through the outside unloading and the outside storage pile.

3) Louisiana-Pacific shall keep records of raw material receipts at the outside unloading station, the amount transferred to outside storage, and the amount reclaimed from outside storage on a daily basis. These records shall be made available to the department for inspection when requested.

G. Emission Monitoring Requirements:

1. An electric eye monitor, similar to those used in incinerators, shall be installed in the abort stack to the sander dust boiler. The monitor shall have a remote readout visible or audible to the operator of the boiler. Louisiana-Pacific shall immediately initiate corrective action whenever emissions in excess of 20% are observed.

Data from the monitor need not be recorded and digitized unless the department has reason to believe violation of the opacity standard exists.

2. The department reserves the right to require opacity monitors at the Coen burner abort stack, sander dust boiler abort stack, hot oil heater stack, and the Roemmc sander dust burner abort stack. The decision to require this monitoring shall be based upon whether or not the department has reason to believe a violation of the opacity standard may exist. If excess emissions exist or may exist at these locations, further opacity monitoring may be required.

H. General Conditions

1. 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.

2. 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.

3. 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.

4. 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.

5. 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 therefor, 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.

6. 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.

7. 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 air quality personnel at the location of the permitted source.

8. Construction Commencement - Construction must begin within one year of permit issuance or the permit will be considered withdrawn.

9. 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 that Section and rules adopted thereunder by the Board of Health and Environmental Sciences.

Permit Analysis

Louisiana-Pacific - Missoula

Permit Modification - Missoula Plant

A. Introduction

This particleboard plant was existing in the Missoula area prior to 1968. The original mill had a capacity of one hundred million square feet of 3/4-inch particleboard. Louisiana-Pacific expanded the mill capacity in 1987 by fifty percent by using the offsets provided by the closure of the Evans Products plant. The expanded mill has a capacity of one hundred and fifty million square feet of 3/4-inch particleboard. The existing mill consisted of four rotary dryers heated by the exhaust gases from the sander dust boiler and a sander dust burner. The old press line utilized a batch press with a capacity of 100 million square feet 3/8-inch basis. The 1987 expansion added two new wood particle dryers, two new predryers with a Coen sander dust burner, and a new press line with a continuous press. A Konus natural gas heater was also added to heat the new press line.

On July 1, 1987 the Environmental Protection Agency (EPA) promulgated new ambient air quality standards for particulate matter with an aerodynamic diameter of 10 microns or less (PM-10). The annual standard is 50 micrograms per cubic meter and the 24-hour standard is 150 micrograms per cubic meter. These standards were in turn adopted by the Montana Board of Health and Environmental Sciences on April 15, 1988. Due to violations of these standards, Missoula has been designated as a PM-10 nonattainment area. As a result of this designation the Montana Department of Health and Environmental Sciences and the Missoula County Air Pollution Control Agency are required to develop a plan to control these emissions and bring the area into compliance with the federal and state ambient air quality standards.

In order to identify the emission sources which were contributing to the violation of the PM-10 standard, Missoula County conducted a chemical mass balance study (CMB) of the area. The Louisiana-Pacific mill was not identified as a significant contributor to the problem by this method, but fugitive dust has been a problem at the plant and is being addressed at all other point sources in nonattainment areas. Therefore, this permit modification is adding general fugitive dust control measures to this facility.

B. Process Description

This plant processes raw wood fiber into particleboard by refining the fiber, adding resin and pressing the mat into boards. The raw material, primarily wood shavings from the planing process in sawmills, is transported to Missoula by truck. This material is unloaded at the plant and moved by conveyor to the dryers and the press line, or out to the storage pile. The material is reclaimed from the pile by front-end loader and conveyed to the dryers and the press line. Approximately 50% of the plant production is stored in this pile during the year. The wood fiber is then dried, blended

with resin, and introduced to the press line for particleboard production. Many baghouses and cyclones are used in the wood fiber handling systems. Sawdust and sander dust is used as fuel for the boiler and sander dust burners. This plant also contains a remanufacturing section which processes the particleboard into finished wood which is used in furniture production.

Since the SIP process did not identify this source as a significant contributor to the Missoula nonattainment problem, no emission limitations were changed in this permit. Only cyclone-controlled and fugitive dust sources were addressed in more detail.

C. Applicable Regulations

1. ARM 16.8.821 Ambient Standard for PM-10. Louisiana-Pacific must demonstrate compliance with the applicable ambient air quality standards. The SIP demonstration of attainment indicates that the emission limitations contained in this permit, along with control measures applied to other sources, will bring the Missoula area into compliance with the PM-10 standards.

2. ARM 16.8.1113(a) Modification of Permit. The department is allowed to modify Louisiana-Pacific Corporation's permit due to a change in an applicable standard (PM-10) adopted by the Board of Health and Environmental Sciences. Louisiana-Pacific may appeal the department's modification to the Board.

3. ARM 16.8.1115 Inspection of Permit. Louisiana-Pacific must maintain a copy of their air quality permit at the mill site and make that copy available for inspection by department personnel upon request.

4. ARM 16.8.1117 Compliance with Other Statutes and Rules. Louisiana-Pacific must comply with all other applicable state, federal, and local laws and regulations.

5. 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.

6. ARM 16.8.1402 Particulate Matter, Fuel Burning Equipment. More stringent limits contained in this permit supersede this rule.

7. ARM 16.8.1403 Particulate Matter, Industrial Process. The requirements of this rule are superseded by the stricter emission limits established in the permit.

8. ARM 16.8.1404 Visible Air Contaminants. The requirements of this permit either supersede this rule because they are more stringent or they are equivalent.

9. Louisiana-Pacific Missoula RACT Analysis

The Louisiana-Pacific plant in Missoula has six wood particle dryers and two predryers which are heated with direct contact combustion gas from a sander dust boiler, a Roemmc sander dust burner, and a Coen sander dust burner. All dryers are connected by a manifold system and are controlled by high efficiency multiclones. All combustion emissions as well as dryer emissions exit to atmosphere through the multiclones. Therefore, the primary emissions points at this facility are:

a. Eight wood particle dryers;
b. Cyclones and baghouses from wood handling systems;
c. Fugitive emissions from raw material handling and storage;
d. Particleboard prepresses and final presses.

Mr. Martin Hills, project engineer for Louisiana-Pacific, submitted the RACT justification. He listed both the electrified filter bed and the E-tube as systems which may increase the degree of control on their dryer emissions. He stated that the amount of increased control must be significant to justify the investment in the control system. Martin then referenced the recent source tests to show that the actual emissions are very close to the emissions rates reported for the EFB and the E-tube systems. He concluded that there is no significant increase in control with the new systems.

The BACT-LAER clearinghouse for wood dryers has been reviewed. The following list shows the BACT determinations made from 1985 through 1990.

Louisiana-Pacific, CA Wood Fiber Dryer (600,000 lb/hr)	.032 gr/scf 25.3 lb/hr	High Eff Cyc Control
Potlatch, MN Wood Gasifier Dryer (36,000 lb/hr)	.015 gr/acf 19.3 lb/hr	EFB
Louisiana-Pacific, VA Wafer Dryer	9 lb/hr	EFB
Weyerhauser, MI Wood Dryer (22,000 lb/hr)	19 lb/hr	Cyclone
Louisiana-Pacific Wood Particle Dryer (20,000 lb/hr) Missoula, MT	.035 gr/dscf 6 lb/hr/unit	Multiclone Control

From the above information and that submitted by Louisiana-Pacific, the department has determined that the Missoula dryers meet RACT requirements for wood particle dryers.

All wood handling systems are controlled by baghouses or cyclones which are considered to be RACT. The fugitive emissions from raw material handling and storage have been the source of public complaints during periods of high winds. The state currently has an enforcement action addressing this problem. Louisiana-Pacific has made some recent changes in operation to control this source better. These emissions are generally large particles typical of fugitive sources.

D. Department Review of Modification

1. Existing Air Quality

The Missoula area is currently a nonattainment area for PM-10 standards. The department has determined, based on its preliminary demonstration of attainment, that the emission limitations contained in this permit, along with control measures applied to other sources, will bring Missoula into compliance with the PM-10 standards.

2. Emission Inventory - Particulate TSP (Allowable)

Summary of Allowable Emissions	Existing	Proposed
PC 206 Dryer #1-multiclone	25.2 TPY	26.3 TPY
PC 207 Dryer #2 "	25.2	26.3
PC 208 Dryer #3 "	25.2	26.3
PC 209 Dryer #4 "	25.2	26.3
PC 210 Predryer A-multiclone	25.2	26.3
PC 211 Predryer B "	25.2	26.3
PC 212 Dryer #C "	25.2	26.3
PC 213 Dryer #D "	25.2	26.3
PC 301 Rej hopper - baghouse	*	+
PC 302 Blending area, shavings to storage, cycl (10% use)	0.8	+
PC 401A Form mach to face bghs	*	20.0
PC 401B Form mach to core bghs	*	20.0
PC 404 Mat trim saw cyclone	8.0	8.0
PC 405 Line cleanup cyclone	2.1	2.1
PC 501A&B 5X25 Saw & blow hog bghs	*	+
PC 502A Sander baghouse	*	36.0
PC 502B Sander baghouse	*	+
PC 502C Sndr dust to dust bin, bghs	*	+
PC 503 A&B 5X16 saws & blowhog bghs	*	36.0
PC 504 Saws & hog to storg bghs	*	+
PC 507 Saws & hogged edge-new bghs	*	45.2
PC 508 Saw & hog relay-new bghs	*	40.0
PC 509 Sander bghs-new	*	70.4
PC 510 Sanderdst relay-baghouse	*	0.8

Summary of Allowable Emissions		Existing	Proposed
PC 601	Reman pneu. baghouse	*	12.0
PC 602	Reman relay baghouse	*	6.0
PC 805	Bullnose & trim saws	*	36.0
PC 701	3 hot press vent fans	25.2	26.3
PC 702	Pre press vent fans	8.4	8.8
PC 703	Hot press vents - new	8.4	8.8
PC 704	Pre press vent fans-new	8.4	8.8
PC ---	Fugitive emissions from storage & handling of raw material	58.5	58.5
Total TSP Emissions		321.4	595.6

*Negligible emissions.
+Included with another emission point (see Sec.I.D)
Note: See expansion permit analysis for calculation of existing emission estimates. The proposed emission estimate includes dryer emissions at 6 lb/hr for 8760 hr/yr. Baghouse emissions were calculated at 0.02 gr/dscf and 8760 hrs/yr. The press vent emissions use 2.0 lb/hr and 8760 hr/yr. The fugitive emission estimate has been changed to include the raw material storage pile, unloading, storage, and reclaiming. The following estimates are from Mr. Charles Likes, mill manager:

Raw material required to operate the plant for one year - 195,000 bone dry units. Mr. Likes estimates 50% of this wood is unloaded, stored, and reclaimed from the pile at some time during the year, and he uses 2400 lbs/BDU.

(195,000 BDU/Yr)(50%)(2400 lb/BDU)(1 tn/2000 lb) = 117,000 tn/yr wood through the pile

E. F. = 1.0 lb/tn for unloading, loading and storage of sawdust (AP-42, 10.3-1 sawdust handling)

Calculate emissions:
(117,000 tn wood/yr)(1.0 lb/tn)(1/2000) = 58.5 tn/yr fugitive emissions

The September 15, 1986 permit allowed 27.8 tn/yr for fugitives; however, this estimate did not include raw material storage. The new fugitive estimate is 30.7 tns/yr larger than the estimate made in 1986. This has been added to the fugitive emission estimate for this permit and incorporated into the allowable emission limits of 320 lb/day for total particulate and 115 lb/day for PM-10.

4. Emission Inventory - Gaseous Pollutants (Potential)

The gaseous pollutants are generated by the combustion units which exhaust through the six dryers or two predryers, except for the hot oil heater which has a separate stack.

Emissions in Tons/Yr

Source	SOx	NOx	VOC	CO
Sander dust boiler	2.1	9.6	19.8	56.7
Roemmc dust burner	1.9	8.8	18.0	51.5
Coen dust burner	1.3	6.1	12.6	36.1
Geka hot oil htr	0.0	11.2	0.2	2.8
Totals	5.3	35.7	51.4	147.1

Note: Additional VOC emissions originate from the finished board print line (Reman section), but have not been quantified in this table.

Calculations:

Sander Dust Boiler - 55 million Btu/hr capacity

1. Assume sander dust has 8500 Btu/lb.
2. Then (55 mmBtu/hr)(1 lb sander dust/8500 Btu) = 6470 lb/hr or 28,334 tn/yr fuel (8760 hr/yr)
3. Emission factor = (1-02-009-04) EPA 450/4-90-003 (AIRS Doc)
   SOx - 0.15 lb/tn burned
   (28,334 tn/yr)(0.15 lb/tn)(1/2000) = 2.1 TPY
   NOx - 0.68 lb/tn burned
   (28,334 tn/yr)(0.68 lb/tn)(1/2000) = 9.6 TPY
   VOC - 1.4 lb/tn burned
   (28,334 tn/yr)(1.4 lb/tn)(1/2000) = 19.8 TPY
   CO - 4.0 lb/tn burned
   (28,334 tn/yr)(4.0 lb/tn)(1/2000) = 56.7 TPY

Roemmc Sander Dust Burner - 50 million Btu/hr capacity

1. Assume sander dust has 8500 Btu/lb.
2. Then (50 mmBtu/hr)(1 lb sander dust/8500 Btu) = 5882 lb/hr or 25,763 tn/yr fuel (8760 hr/yr)
3. Emission factor = (1-02-009-04) wood-fired boiler
   SOx - 0.15 lb/tn burned
   (25,763 tn/yr)(0.15 lb/tn)(1/2000) = 1.9 TPY
   NOx - 0.68 lb/tn burned
   (25,763 tn/yr)(0.68 lb/tn)(1/2000) = 8.8 TPY
   VOC - 1.4 lb/tn burned
   (25,763 tn/yr)(1.4 lb/tn)(1/2000) = 18.0 TPY
   CO - 4.0 lb/tn burned
   (25,763 tn/yr)(4.0 lb/tn)(1/2000) = 51.5 TPY

Coen Sander Dust Burner - 35 million Btu/hr capacity

1. Assume sander dust has 8500 Btu/lb.
2. Then (35 mmBtu/hr)(1 lb sander dust/8500 Btu) = 4117 lb/hr or 18,032 tn/yr fuel (8760 hr/yr)
3. Emission factor = (1-02-090-04) wood-fired boiler

SOx - 0.15 lb/tn burned
(18,032 tn/yr)(0.15 lb/tn)(1/2000) = 1.3 TPY
NOx - 0.68 lb/tn burned
(18,032 tn/yr)(0.68 lb/tn)(1/2000) = 6.1 TPY
VOC - 1.4 lb/tn burned
(18,032 tn/yr)(1.4 lb/tn)(1/2000) = 12.6 TPY
CO - 4.0 lb/tn burned
(18,032 tn/yr)(4.0 lb/tn)(1/2000) = 36.1 TPY

Geka Hot Oil Heater - 20 million Btu/hr capacity

1. Natural gas-fired - 1100 Btu/CF
2. Then (20 mmBtu/hr)(1 CF/1100 Btu) = 18182 CF/hr
   or 159.3 million CF/yr (8760 hr/yr)
3. Emission Factor - (1-02-006-02)
   SOx - 0.6 lb/MMCF burned
   (159.3 MMCF/yr)(0.6 lb/MMCF)(1/2000) = 0.0 TPY
   NOx - 140.0 lb/MMCF burned
   (159.3 MMCF/yr)(140 lb/MMCF)(1/2000) = 11.2 TPY
   VOC - 2.8 lb/MMCF burned
   (159.3 MMCF/yr)(2.8 lb/MMCF)(1/2000) = 0.2 TPY
   CO - 4.0 lb/MMCF burned
   (159.3 MMCF/yr)(4.0 lb/MMCF)(1/2000) = 2.8 TPY

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

ENVIRONMENTAL ASSESSMENT (EA)

Project or Application: Modification of the Louisiana-Pacific Corporation air quality permit #2303 for the Missoula particleboard plant.

Description of Project: This permit modification will establish definitive emission limits for all emission points within the plant and require fugitive dust control on those haul roads within the plant area.

Benefits and Purpose of Proposal: Louisiana-Pacific (LP) is currently not a significant contributor to the Missoula PM-10 nonattainment problem. This permit modification will establish definitive enforceable emission limits for all sources at the LP facility and, therefore, ensure that their contribution to Missoula's PM-10 problem will not increase beyond known limits.

Description and analysis of reasonable alternatives whenever alternatives are reasonably available and prudent to consider: One alternative would be to require greater degrees of control from other sources in the nonattainment area. The SIP control plan worked out by Missoula County has attempted to distribute the control burden fairly across the area. The controls required of Louisiana-Pacific are minimal fugitive dust controls which have been required to match the city, county, and state efforts to control road and street dust emissions.

A listing and appropriate evaluation of mitigation, stipulations and other controls enforceable by the agency or another government agency: A complete listing of enforceable permit conditions and a permit analysis is contained in permit 2303-M. Further information is contained in the Missoula SIP.

Recommendation: No EIS required.

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

If an EIS is not required, explain why the EA is an appropriate level of analysis: This modification will reduce fugitive emissions from the LP plant in Missoula, and assist in attaining compliance with the PM-10 regulations for the area. This is a small change to the existing permit, and the EA is sufficient environmental review.

Other groups or agencies contacted or which may have overlapping jurisdiction: None.
Individuals or groups contributing to this EA: AQB staff
EA prepared by: Warren Norton
Date: December 3, 1991.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

		MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ATTACHED
1. TERRESTRIAL AND AQUATIC LIFE AND HABITATS	1.			X			
2. WATER QUALITY, QUANTITY AND DISTRIBUTION	2.			X			
3. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE	3.			X			
4. VEGETATION COVER, QUANTITY AND QUALITY	4.			X			
5. AESTHETICS	5.			X			
6. AIR QUALITY	6.			X			
7. UNIQUE ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCE	7.			X			
8. DEMANDS ON ENVIRONMENTAL RESOURCE OF WATER, AIR AND ENERGY	8.			X			
9. HISTORICAL AND ARCHAEOLOGICAL SITES	9.					X	
10. CUMULATIVE AND SECONDARY IMPACTS	10.			X			

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

		MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ATTACHED
1. SOCIAL STRUCTURES AND MORES	1.			X			
2. CULTURAL UNIQUENESS AND DIVERSITY	2.			X			
3. LOCAL AND STATE TAX BASE AND TAX REVENUE	3.			X			
4. AGRICULTURAL OR INDUSTRIAL PRODUCTION	4.			X			
5. HUMAN HEALTH	5.			X			X
6. ACCESS TO AND QUALITY OR RECREATIONAL & WILDERNESS ACTIVITIES	6.			X			
7. QUANTITY AND DISTRIBUTION OF EMPLOYMENT	7.			X			
8. DISTRIBUTION OF POPULATION	8.			X			
9. DEMANDS FOR GOVERNMENTAL SERVICES	9.			X			
10. INDUSTRIAL AND COMMERCIAL ACTIVITY	10.			X			
11. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS	11.			X			
12. CUMULATIVE AND SECONDARY IMPACTS	12.			X			

.otential Impacts on Human Health

5. Human Health - The permit modification is part of the control strategy to bring the Missoula area into compliance with the ambient PM-10 standards. Compliance with this standard should have a positive effect on the health of the citizens of the Missoula valley.

DEPARTMENT OF
HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU

STAN STEPHENS, GOVERNOR

COGSWELL BUILDING

STATE OF MONTANA

FAX # (406) 444-2606

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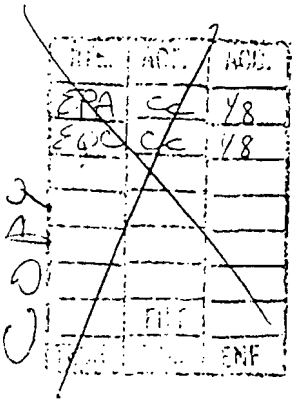

January 8, 1992

NOTIFICATION OF
PERMIT MODIFICATION

Date of Mailing: January 8, 1992

Name of Applicant: Stone Container Corporation

Location: Missoula, Township 14 North, Range 21 West, Section 24
Missoula County, Montana.

Proposed Action: The department proposes to issue a permit modification, with conditions, to the above-named permittee. The permit will be assigned number 2589-M.

Proposed Conditions: See attached permit. More stringent emissions limitations may be necessary in the future if the present SIP fails to show attainment with federal and state air quality regulations.

Procedures for Appeal: The permit shall be deemed modified in accordance with this notice within 15 days of this notice, which is January 23, 1992, unless the permittee requests a hearing before the Montana Board of Health and Environmental Sciences. Any appeal must be filed within fifteen (15) days after the department notifies the permittee of its intention to modify the permit. The request for hearing shall contain an affidavit setting forth the grounds for the request. Any hearing will be held under the provisions of the Montana Administrative Procedures Act. Submit requests for hearing in triplicate to: Chairman, Board of Health and Environmental Sciences, Cogswell Building, Helena, Montana 59620. The filing of a request for hearing postpones the effective date of the modifications to the permit until the decision of the board becomes final or judicial review has been concluded.

Sincerely,

Jeffrey T. Chaffee, P.E.
Chief

WR8-05003

AIR QUALITY PERMIT

Issued to: Stone Container Corporation
P. O. Box 4707
Missoula, MT 59806-4707

Permit #2589-M
Notification of Modification: 1-8-92
Date of Final Modification: 1-23-92

SECTION I: Permitted Facilities

An air quality permit is hereby granted to the above-named permittee, hereinafter referred to as recipient, pursuant to Section 75-2-204 and 211, MCA, as amended, and Subchapter 11, PERMIT, CONSTRUCTION AND OPERATION OF AIR CONTAMINANT SOURCES, ARM 16.8.1113 as amended, for the entire mill site located at the Frenchtown mill site for the following:

The entire facility at the Frenchtown site, including:

A. Three Recovery Boilers

1. #3 Recovery Boiler has a capacity of 385 million Btu per hour input, and is controlled with an electrostatic precipitator. It has continuous emission monitors for TRS required by state permit.

2. #4 Recovery Boiler has a capacity of 825 million Btu per hour input, and is controlled with an electrostatic precipitator. It has continuous emission monitors for TRS required by state permit.

3. #5 Recover Boiler has a capacity of 330 million Btu per hour input, and is controlled with an electrostatic precipitator. This boiler is subject to NSPS and has continuous emission monitors for opacity and TRS.

B. Four Lime Kilns

1. #1 Lime Kiln has a capacity of 6.1 tons per hour of lime mud and is controlled with a wet venturi scrubber. The kiln has a continuous emission monitor for TRS.

2. #2 Lime Kiln has a capacity of 6.1 tons per hour of lime mud and is controlled with a wet venturi scrubber. The kiln has a continuous emission monitor for TRS.

3. #3 Lime kiln has a capacity of 15.6 tons per hour of lime mud and is controlled with a wet venturi scrubber. The kiln has a continuous emission monitor for TRS.

4. #4 Lime Kiln has a capacity of 12.7 tons per hour of lime mud and is controlled with a wet venturi scrubber. The kiln has a continuous emission monitor for TRS. This lime kiln is subject to NSPS Subpart BB.

C. Three Dissolving Tanks

1. #3 Smelt Dissolving Tank has a capacity of 29 tons per hour of black liquor solids. This dissolver is controlled with a wet scrubber.

2. #4 Smelt Dissolving Tank has a capacity of 62.5 tons per hour of black liquor solids. This dissolver is controlled with a wet scrubber.

3. #5 Smelt Dissolving Tank has a capacity of 25 tons per hour of black liquor solids. This dissolver is controlled with a wet scrubber, and is subject to NSPS Subpart BB.

D. Three Lime Slakers

1. The #1 Lime Slaker has a capacity of 7.7 tons per hour of lime. This slaker is controlled with a wet scrubber.

2. The #2 Lime Slaker has a capacity of 9.0 tons per hour of lime. This slaker is controlled with a wet scrubber.

3. The #3 Lime Slaker has a capacity of 7.9 tons per hour of lime. This slaker is controlled with a wet scrubber.

E. Two Wood-Fired Boilers

1. Waste Fuel Boiler - This boiler is primarily fueled with waste wood and bark. It has an input capacity of 537 million Btu per hour, and has the capability to fire natural gas or heavy fuel oil. The boiler is controlled with a wet venturi scrubber. The boiler is subject to NSPS Subpart D and has continuous emission monitors for both NOx and SO_2.

2. Hog Fuel Boiler - This boiler is only fired with waste wood and bark, and has a capacity of 200 million Btu per hour input to the fire box. This boiler is controlled with a wet venturi scrubber.

F. Two Natural Gas-Fired Boilers

1. #2 Package Boiler - This boiler is fired only with natural gas, and has a capacity of 72 million Btu per hour. This boiler has no emission control on the stack.

2. Power Boiler - This boiler is fired only with natural gas, and has a capacity of 297 million Btu per hour. This boiler has no emission control on the stack.

G. Five Pulp Washers

1. The PC Washer has a capacity of 20.2 tons per hour of air dried pulp (ADP). This washer is controlled by a wet scrubber.

2. The M&D Washer has a capacity of 17.2 tons per hour of air dried pulp (ADP). This washer is a compaction baffle-type washer with no particulate emissions.

3. The No. 1 Base Washer has a capacity of 38.6 tons per hour of air dried pulp (ADP). This washer is controlled by a wet scrubber.

4. The No. 2 Base Washer has a capacity of 38.6 tons per hour of air dried pulp (ADP). This washer is controlled by a wet scrubber.

5. The Top Washer has a capacity of 25.5 tons per hour of air dried pulp (ADP). This washer is controlled by a wet scrubber.

H. Three Paper Machines

1. #1 Paper Machine has a capacity of 29.5 tons per hour of ADP. There is no control on the paper machine ventilation.

2. #2 Paper Machine has a capacity of 29.5 tons per hour of ADP. There is no control on the paper machine ventilation.

3. #3 Paper Machine has a capacity of 59.6 tons per hour of ADP. There is no control on the paper machine ventilation.

I. Three Unloading Stations

1. Salt Cake/Lime Unloading has a capacity of 20.0 tons per hour, and is controlled with a baghouse.

2. Starch Unloading has a capacity of 7.5 tons per hour, and is controlled with a baghouse.

3. Clay Unloading has a capacity of 13.0 tons per hour, and is controlled with a baghouse.

J. Sawdust, Chip, and Hog Fuel Unloading and Conveying

1. Sawdust is conveyed from storage to the digesters with covered conveyers and no other control.

2. Chips are conveyed from storage to the digesters with covered conveyers and no other control.

3. Hog fuel is conveyed from storage to the boilers with covered conveyers and no other control.

K. Sawdust and Chip Cyclones

1. M&D Cyclone delivers sawdust to the M&D Digester.

2. Pins Cyclone delivers chips to the Pins Digester.

3. Batch Cyclone delivers chips to the Batch Digesters.

SECTION II: Limitations and Conditions

The results of any single emission test or daily average from the continuous opacity monitors shall be evaluated against the specified hourly and daily maximum. Emission tests shall be conducted on the recovery boilers and the waste fuel boiler quarterly.

All other sources listed, with the exception of conveying systems, brown stock washers, and unloading systems shall be tested once per year. Results of such tests shall be evaluated against the specified hourly and daily maximum.

A. #3 Recovery Boiler

1. Total suspended particulate emissions from this boiler shall not exceed 979 lbs/calendar day, and 40.79 lbs/hr.

2. PM-10 emissions from this boiler shall not exceed 979 lbs/calendar day, and 40.79 lbs/hr.

3. Total sulfate emissions from this boiler shall not exceed 979 lbs/calendar day, and 40.79 lbs/hr.

4. Total reduced sulfur emissions from this boiler shall not exceed 5 ppm, 24-hour average.

5. Compliance with the above standards shall be determined by EPA source sampling methods specified in 40 CFR Part 60, Appendix A, including back-half particulate. PM-10 sampling methods are specified by 40 CFR Part 51, Appendix M, including back-half. TRS emissions are determined by continuous monitoring with 24-hour averages.

6. A continuous emission monitor for total reduced sulfur compounds is required for this source.

7. The monthly average total suspended particulate shall not exceed 451 lbs/day. Monthly average emissions shall be determined by continuous opacity monitoring. Stone shall maintain a correlation between opacity and particulate emissions and use this correlation to calculate daily and monthly averages.

B. #4 Recovery Boiler

1. Total suspended particulate emissions from this boiler shall not exceed 1253 lbs/calendar day, and 52.21 lbs/hr.

2. PM-10 emissions from this boiler shall not exceed 1253 lbs/calendar day, and 52.21 lbs/hr.

3. Total sulfate emissions from this boiler shall not exceed 1253 lbs/calendar day, and 52.21 lbs/hr.

4. Total reduced sulfur emissions from this boiler shall not exceed 5 ppm, 24-hour average.

5. Compliance with the above standards shall be determined by EPA source sampling methods specified in 40 CFR Part 60, Appendix A, including back-half particulate. PM-10 sampling methods are specified by 40 CFR Part 51, Appendix M, including back-half particulate. TRS emissions are determined by continuous monitoring with 24-hour averages.

6. A continuous emission monitor for total reduced sulfur compounds is required for this source.

7. The monthly average total suspended particulate shall not exceed 928 lbs/day. Monthly average emissions shall be determined by continuous opacity monitoring. Stone shall maintain a correlation between opacity and particulate emissions and use this correlation to calculate daily and monthly averages.

C. #5 Recovery Boiler (NSPS-BB)

1. Total suspended particulate emissions from this boiler shall not exceed 0.044 gr/dscf, and in no case shall exceed 633.6 lbs/day and 26.4 lbs/hr. This is consistent with 0.044 gr/dscf at a maximum flow rate of 70,000 dscf per minute as required by NSPS.

2. PM-10 emissions from this boiler shall not exceed 633.6 lbs/day, and 26.4 lbs/hr.

3. Total sulfate emissions from this boiler shall not exceed 633.6 lbs/day, and 26.4 lbs/hr.

4. Total reduced sulfur emissions from this boiler shall not exceed 5 ppm, 12-hour average.

5. Compliance with the above standards shall be determined by EPA source sampling methods specified in 40 CFR Part 60, Appendix A. PM-10 sampling methods are specified by 40 CFR Part 51, Appendix M. TRS emissions are determined by continuous monitoring methods specified in 40 CFR Part 60, Appendix B, Performance Specifications 1 through 6 as applicable. Back-half is not required since this is an NSPS source.

6. Continuous emission monitors for opacity, and total reduced sulfur compounds are required for this source.

7. The monthly average total suspended particulate shall not exceed 384 lbs/day. Monthly average emissions shall be determined by continuous opacity monitoring. Stone shall maintain a correlation between opacity and particulate emissions and use this correlation to calculate daily and monthly averages.

D. #3 Smelt Dissolving Tank

1. Total suspended particulate emissions from this source shall not exceed 140 lbs/day and 5.83 lbs/hr.

2. PM-10 emissions from this source shall not exceed 140 lbs/day and 5.83 lbs/hr.

3. Compliance with the above standards shall be determined by EPA source sampling methods specified in 40 CFR Part 60, Appendix A. PM-10 sampling methods are specified by 40 CFR Part 51, Appendix M.

E. #4 Smelt Dissolving Tank

1. Total suspended particulate emissions from this source shall not exceed 607 lbs/day and 25.29 lbs/hr.

2. PM-10 emissions from this source shall not exceed 607 lbs/day and 25.29 lbs/hr.

3. Compliance with the above standards shall be determined by EPA source sampling methods specified in 40 CFR Part 60, Appendix A. PM-10 sampling methods are specified by 40 CFR Part 51, Appendix M.

F. #5 Smelt Dissolving Tank (NSPS)

1. Total suspended particulate emissions from this source shall be limited to 0.2 lb/ton black liquor processed, but in no case shall it exceed 120 lbs/day and 5.0 lbs/hr. This is consistent with the 0.2 lb/ton NSPS limit since this dissolver has a capacity of 25 tons/hour of black liquor solids.

2. PM-10 emissions from this source shall not exceed 120 lbs/day and 5.00 lbs/hr.

3. Compliance with the above standards shall be determined by EPA source sampling methods specified in 40 CFR Part 60, Appendix A. PM-10 sampling methods are specified by 40 CFR Part 51, Appendix M.

G. #1 Lime Kiln

1. Total suspended particulate emissions from this source shall not exceed 288 lbs/day and 12.0 lbs/hr.

2. PM-10 emissions from this source shall not exceed 288 lbs/day, and 12.0 lbs/hr.

3. Total sulfate emissions from this source shall not exceed 259 lbs/day, and 10.79 lbs/hr.

4. Total reduced sulfur emissions shall not exceed 20 ppm, 24-hour average.

5. Compliance with the above standards shall be determined by EPA source sampling methods specified in 40 CFR Part 60, Appendix A, including back-half particulate. PM-10 sampling methods are specified by 40 CFR Part 51, Appendix M, including back-half particulate. TRS emissions are determined by continuous monitoring with 24-hour averages.

6. A continuous emission monitor for total reduced sulfur compounds is required for this source.

H. #2 Lime Kiln

1. Total suspended particulate emissions from this source shall not exceed 266 lbs/day and 11.08 lbs/hr.

2. PM-10 emissions from this source shall not exceed 266 lbs/day, and 11.08 lbs/hr.

3. Total sulfate emissions from this source shall not exceed 239 lbs/day, and 9.96 lbs/hr.

4. Total reduced sulfur emissions shall not exceed 20 ppm, 24-hour average.

5. Compliance with the above standards shall be determined by EPA source sampling methods specified in 40 CFR Part 60, Appendix A, including back-half particulate. PM-10 sampling methods are specified by 40 CFR Part 51, Appendix M, including back-half particulate. TRS emissions are determined by continuous monitoring with 24-hour averages.

6. A continuous emission monitor for total reduced sulfur compounds is required for this source.

I. #3 Lime Kiln

1. Total suspended particulate emissions from this source shall not exceed 359 lbs/day and 14.96 lbs/hr.

2. PM-10 emissions from this source shall not exceed 359 lbs/day, and 14.96 lbs/hr.

3. Total sulfate emissions from this source shall not exceed 323 lbs/day, and 13.46 lbs/hr.

4. Total reduced sulfur emissions shall not exceed 20 ppm, 24-hour average.

5. Compliance with the above standards shall be determined by EPA source sampling methods specified in 40 CFR Part 60, Appendix A, including back-half particulate. PM-10 sampling methods are specified by 40 CFR Part 51, Appendix M, including back-half particulate. TRS emissions are determined by continuous monitoring with 24-hour averages.

6. A continuous emission monitor for total reduced sulfur compounds is required for this source.

J. #4 Lime Kiln (NSPS)

1. Total suspended particulate emissions from this source shall be limited to 0.067 gr/dscf, but in no case shall it exceed 204.0 lbs/day and 8.50 lbs/hr. This limitation is consistent with a maximum flow rate of 14,800 dscfm. The analysis for the coke conversion shows no increase in particulate emissions from this source.

2. PM-10 emissions from this source shall not exceed 204.0 lbs/day, and 8.50 lbs/hr.

3. Total sulfate emissions from this source shall not exceed 204.0 lbs/day, and 8.50 lbs/hr.

4. Total reduced sulfur emissions shall not exceed 8.0 ppm, 12-hour average.

5. Compliance with the above standards shall be determined by EPA source sampling methods specified in 40 CFR Part 60, Appendix A. PM-10 sampling methods are specified by 40 CFR Part 51, Appendix M. TRS emissions are determined by continuous monitoring with 12-hour averages.

6. A continuous emission monitor for total reduced sulfur compounds is required for this source.

NOTE: The permit analysis for the coke conversion project permitted in January 1987 shows no increase in the allowable particulate from the #4 Lime Kiln. Therefore, the department feels that the NSPS limit of 0.067 gr/dscf is still applicable to this source.

K. #1 Lime Slaker

1. Total suspended particulate emissions from this source shall not exceed 110 lbs/day and 4.58 lbs/hr.

2. PM-10 emissions from this source shall not exceed 110 lbs/day and 4.58 lbs/hr.

3. Compliance with the above standards shall be determined by EPA source sampling methods specified in 40 CFR Part 60, Appendix A, including back-half particulate. PM-10 sampling methods are specified by 40 CFR Part 51, Appendix M, including back-half particulate.

L. #2 Lime Slaker

1. Total suspended particulate emissions from this source shall not exceed 146 lbs/day and 6.08 lbs/hr.

2. PM-10 emissions from this source shall not exceed 146 lbs/day and 6.08 lbs/hr.

3. Compliance with the above standards shall be determined by EPA source sampling methods specified in 40 CFR Part 60, Appendix A, including back-half particulate. PM-10 sampling methods are specified by 40 CFR Part 51, Appendix M, including back-half particulate.

M. #3 Lime Slaker

1. Total suspended particulate emissions from this source shall not exceed 72 lbs/day and 3.00 lbs/hr.

2. PM-10 emissions from this source shall not exceed 72 lbs/day and 3.00 lbs/hr.

3. Compliance with the above standards shall be determined by EPA source sampling methods specified in 40 CFR Part 60, Appendix A, including back-half particulate. PM-10 sampling methods are specified by 40 CFR Part 51, Appendix M, including back-half particulate.

N. Hog Fuel Boiler

1. Total suspended particulate emissions from this boiler shall not exceed 446 lbs/day, and 18.58 lbs/hr.

2. PM-10 emissions from this boiler shall not exceed 446 lbs/day, and 18.58 lbs/hr.

3. Compliance with the above standards shall be determined by EPA source sampling methods specified in 40 CFR Part 60, Appendix A, including back-half particulates. PM-10 sampling methods are specified by 40 CFR Part 51, Appendix M, including back-half particulates.

O. Waste Fuel Boiler (NSPS Subpart D)

1. Total suspended particulate emissions from this boiler shall not exceed 0.1 lbs/million Btu fired, and 52.04 lbs/hr, and 1249 lbs/day.

2. PM-10 emissions from this boiler shall not exceed 1249 lbs/day, and 52.04 lbs/hr, and 0.1 lbs/million Btu fired.

3. Sulfur dioxide emissions from this source shall not exceed 0.8 lb/million Btu, and 429.6 lb/hr when firing liquid fossil fuel or liquid fossil fuel and wood residue.

4. Nitrogen dioxide emissions from this boiler shall not exceed 0.30 lbs/million Btu, and 161.1 lbs/hr when firing liquid or gaseous fossil fuel and wood residue.

5. Compliance with the above standards shall be determined by EPA source sampling methods specified in 40 CFR Part 60, Appendix A. PM-10 sampling methods are specified by 40 CFR Part 51, Appendix M.

6. Continuous emission monitors for sulfur dioxide and nitrogen oxides is required for this source.

P. Sawdust, Chips, and Hog Fuel Unloading, Storage, and Handling

1. Sawdust - This activity is limited to 1.0 lb/ton of sawdust handled (SCC #3-07-008-03).

2. Chips - This activity is limited to 0.18 lb/ton of chips handled (State emission estimate).

3. Hog Fuel - This activity is limited to 0.18 lb/ton of hog fuel handled (State emission estimate).

Q. Brown Stock Washers

1. Brown Stock Washers shall be limited to a total of 128 lb/day, and 5.33 lb/hr.

2. Compliance with the above standards shall be determined by EPA source sampling methods specified in 40 CFR Part 60, Appendix A. PM-10 sampling methods are specified by 40 CFR Part 51, Appendix M.

R. Batch and Continuous Digesters

1. All gaseous emissions from these units shall be ducted to the lime kilns for oxidation of all reduced sulfur compounds.

2. All gaseous emissions from the air stripper shall be ducted to the lime kilns for oxidation of all reduced sulfur compounds.

S. Scrubber Operational Checks

The following scrubber operational checks shall be performed on a weekly basis.

1. Lime Kilns

   a. Scrubber water flow
   b. Scrubber water solids
   c. Scrubber pressure differential

2. Smelt Tank Vents

   a. Scrubber shower water flows
   b. Scrubber pressure differential
   c. Bypass conditions

3. Waste Fuel Boiler

   a. Scrubber shower water flows
   b. Scrubber water solids
   c. Scrubber pressure differential
   d. Scrubber water pH check (pH 7-9)

4. Hog Fuel Boiler

   a. Scrubber water flow and weir overflow
   b. Scrubber shower water pressure
   c. Scrubber pressure differential
   d. Scrubber water pH check (pH 7-9)

5. Stone shall maintain a record of such checks which the department may inspect at any time.

T. Plant-Wide Sulfur Dioxide Limitation

Total sulfur dioxide emissions from the mill shall not exceed 5000 lbs/day. In the event of a natural gas curtailment, Stone shall report, in addition to the normal report, the following:

1. Daily SO_2 emissions from recovery boilers and power boilers.

2. Dates and times of curtailment.

3. Quantity and sulfur content of fuel oil burned.

4. All fuel oil burned must comply with ARM 16.8.1411 - Sulfur In Fuel Oil rule, unless sulfur dioxide emissions are controlled on an equivalent basis.

U. NSPS Testing Requirements

8. Permit Duration - This permit is null and void if the equipment is torn down, removed, or not capable of being operated for two years.

9. 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 that Section and rules adopted thereunder by the Board of Health and Environmental Sciences.

SECTION III: Continuous Emission Monitoring Systems

A. No. 3 and No. 4 Recovery Boilers

A total reduced sulfur (TRS) CEM is required by state permit for each boiler. This CEM is not required to conform to federal specifications. Stone already has Barton titrators in place to fulfill this requirement. These monitors do not meet federal specifications because the response time is too slow; however, it is sufficient to monitor this pollutant at this time.

B. #5 Recovery Boiler (NSPS - BB)

1. An opacity continuous emission monitor (CEM) is required by state permit and federal regulations. This CEM shall conform to Performance Specification 1 found in 40 CFR Part 60, Appendix B.

2. A total reduced sulfur (TRS) CEM is required by state permit and federal regulation. This CEM shall conform to federal specifications as required by 40 CFR Part 60, Appendix B, Specification 5.

C. #1, #2, and #3 Lime Kilns

A total reduced sulfur (TRS) CEM is required by state permit for each kiln. This CEM is not required to conform to federal specifications. Stone already has Barton titrators in place to fulfill this requirement. These monitors do not meet federal specifications because the response time is too slow; however, it is sufficient to monitor this pollutant at this time.

D. #4 Lime Kiln (NSPS - BB)

A total reduced sulfur (TRS) CEM is required by state permit and federal regulations. This CEM shall conform to federal specifications as required by 40 CFR Part 60, Appendix B, Specification 5.

E. Waste Fuel Boiler (NSPS - D)

1. A sulfur dioxide CEM is required by federal regulation and state permit when this boiler is fired on oil. This CEM shall conform to federal specifications as required by Specification 2, 40 CFR Part 60, Appendix B.

2. A nitrogen oxides CEM is required by federal regulation and state permit. This CEM shall conform to federal specifications as required by Specification 2, 40 CFR Part 60, Appendix B.

3. Either an oxygen or carbon monoxide CEM is required as provided in 40 CFR Part 60.45.

SECTION IV: Ambient Air Monitoring Program

Stone shall conduct an ambient air monitoring program consisting of the following:

A. At least two analyzers to measure H_2S.

B. At least two PM-10 samplers.

C. At least one wind system.

D. Sampling sites, data reporting, and parameters to be monitored will be specified by the department.

SECTION V: Reporting Requirements

A. Operational Reporting Requirements

Stone shall submit the following production and operation information annually to the AQB by March 1st of each year. This information is required for use in calculation of the annual emission inventory.

1. Annual production information calculated on a calendar year basis for the previous calendar year.

SOURCE	UNITS OF MATERIAL PROCESSED
a. Hog Fuel Boiler	Hog Fuel - tns/yr Nat Gas - MCF/yr
b. Waste Fuel Boiler	Hog Fuel - Tns/yr Nat Gas - MCF/yr Fuel Oil - Mgal/yr
c. No 2 Pkg Boiler	Nat Gas - MCF/yr
d. Power Boiler	Nat Gas - MCF/yr
e. No. 3 Recovery Blr	Black liquor - tns/yr Nat Gas - MCF/yr

SOURCE	UNITS OF MATERIAL PROCESSED
f. No. 4 Recovery Blr	Black liquor - tns/yr Nat Gas - MCF/yr Fuel Oil - Mgal/yr
g. No. 5 Recovery Blr	Black liquor - Tns/yr Nat Gas - MCF/yr Fuel Oil - Mgal/yr
h. No. 1 lime kiln	Nat Gas - MCF/yr Fuel Oil - Mgal/yr Lime mud - tns/yr
i. No. 2 lime kiln	Nat Gas - MCF/yr Fuel Oil - Mgal/yr Lime mud - tns/yr
j. No. 3 lime kiln	Nat Gas - MCF/yr Fuel Oil - Mgal/yr Lime mud - tns/yr
k. No. 4 lime kiln	Nat Gas - MCF/yr Fuel Oil - Mgal/yr Lime mud - tns/yr Petrol Coke - Tns/yr
l. No. 3 Dissolver	Black liquor - tns/yr
m. No. 4 Dissolver	Black liquor - Tns/yr
n. No. 5 Dissolver	Black liquor - tns/yr
o. No. 1 Slaker	Lime - tns/yr
p. No. 2 Slaker	Lime - tns/yr
q. No. 3 Slaker	Lime - tns/yr
r. Pulp produced	Pulp - ADT/yr
s. Linerboard produced	Linerboard - ADT/yr

2. Hours of operation for the mill and each source if different from the mill operation time.

3. Fugitive dust information:

   a. Tons of chips received for the year.

   b. Tons of sawdust received for the year.

   c. Tons of hog fuel received for the year.

B. Monthly Reporting Requirements.

1. Lime Kilns

a. All lime kilns shall report daily average TRS concentrations with the number of hours exceeding 20 ppm. Lime kilns subject to NSPS Subpart BB shall report 12 hour averages with the number of hours exceeding 8 ppm.

b. All lime kilns shall test for particulate emissions at least once per year and include the result with the monthly report in which the test was completed.

2. Recovery Boilers

a. All recovery boilers shall report daily averages for TRS with the number of hours exceeding 5 ppm. Recovery boilers subject to NSPS Subpart BB shall report on a 12-hour basis with the number of hours exceeding 5 ppm.

b. All recovery boilers shall report a monthly average pounds of sulfur emitted per 1000 pounds of black liquor burned.

c. Recovery boilers subject to NSPS shall report opacity on a 24-hour average basis.

d. Recovery boilers are required to test for total particulate once per quarter. These tests shall conform to 40 CFR 60, Appendix A, with back-half included unless NSPS is applicable.

e. Recovery boilers subject to NSPS shall report all exceedances of the opacity standard of 35%, six-minute average.

3. Waste Fuel Boiler

a. All boilers subject to NSPS Subpart D shall report three-hour averages for SO_2 and NOx as specified by federal regulations.

4. Pulp Mill Production

Average daily pulp production shall be reported in air dried tons per day, and average daily black liquor burning rates for each recovery boiler in pounds per day.

C. Quarterly Excess Emission Reports

Stone shall submit quarterly excess emission reports for all continuous emission monitors required by NSPS as specified in 40 CFR Part 60.7(c). This report shall include:

1. The magnitude of excess emissions computed in accordance with 60.13(h), any conversion factors used, and the date and time of commencement and completion of each time period of excess emissions.

2. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility; the nature and cause of any malfunction (if known); the corrective action taken or preventative measures adopted.

3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

4. When no excess emissions have occurred or the continuous monitoring systems have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

5. The excess emission reports shall be completed in a format supplied by the department.

ATTACHMENT B

Modified June 14, 1989
Conditions of Permit #2589

This Attachment B, Conditions of Permit #2589, hereby replaces the original Permit #2344 as issued May 22, 1987.

SECTION I: Permitted Facilities

A. A fuel change is requested for all four existing lime kilns. These kilns are currently fired on natural gas. The permit application requests permission to use an 80% petroleum coke, 20% natural gas fuel combination on a BTU basis. The kilns currently burn approximately 1,216 million cubic feet of natural gas per year. The fuel change will replace 80% of this with approximately 35,285 tons/year of petroleum coke supplied by Exxon Refinery.

B. The general associated facilities are:

1. Two coke storage bins with vents.

2. Coke unloading station with enclosed conveying systems to transport the coke to storage.

3. Pulverizer and burner system to feed the coke into the kilns.

SECTION II: Limitations and Conditions

A. The fuel change shall be limited to a maximum of 80% petroleum coke substitution for the natural gas currently used in each kiln.

B. Stone shall provide the department with a current analysis of the coke used in the kilns on a yearly basis. The report shall contain the heat content of the coke in BTU/lb, and the concentration of the following parameters: fixed carbon, volatiles, sulfur, ash, vanadium, beryllium, cadmium, mercury, nickel and lead. A change to any other type of fuel which increases any air pollution emissions is subject to the new source review requirements in accordance with ARM 16.8.1101 et seq. and/or ARM 16.8.921 et seq. This report is due by July 15 each year. No report is required for 1987.

C. The coke unloading, storage, and handling system shall use reasonably available control technology to control fugitive dust.

D. Nitrogen oxide emissions shall not exceed 408 tons/year from all four lime kilns. Compliance with this requirement shall be determined by conducting stack testing in accordance with the frequency specified in condition E. of this section. Compliance with this limitation shall be deemed achieved provided that the results of all stack sampling conducted within any calendar year do not exceed any of the values provided below:

Kiln #1: $(X + 7.63/N^2)(0.69)$
Kiln #2: $(X + 7.63/N^2)(0.68)$
Kiln #3: $(X + 7.63/N^2)(1.25)$
Kiln #4: $(X + 7.63/N^2)$

Units are pounds per hour.

Where: N = number of stack tests or hourly readings obtained in the subject calendar year as presented below.

$X = (\text{Coke } \%)(.26) + 4.9$
Coke % is measured on a BTU basis.

The value of N shall be determined as follows:

1. For stack tests conducted in accordance with 40 CFR Part 60, Appendix A, Method 7, N shall equal 3 for each completed test (not the same as runs). A minimum of 2 tests is required.

2. For stack tests conducted using continuous emission sampling devices (such as that conducted in support of this application), N shall equal the number of valid hourly samples. The minimum number of samples required for each applicable kiln shall be 50.

- Average coke feed rate during the testing period shall not be less than five percentage points than the average coke feed rate in use by Stone over the preceding 3 months. Average coke feed rate shall be calculated on a percent BTU basis excluding all time periods in which coke was not a fuel to the lime kiln in question.

E. An annual stack test at Kiln #4 shall be required to verify compliance with condition D. of this section and to otherwise inventory the emissions from this source. Kilns #1, #2 and #3 only need be tested once following conversion to coke. The department, however, reserves the right to require further testing in accordance with the provisions of ARM 16.8.704 as it deems necessary to inventory air pollution emissions or to verify compliance with this permit or any other air quality rule. The requirements of this section, however, shall not be deemed a relaxation of testing requirements found in other permits issued to Stone. The test required by this section shall also include an analysis of sulfur dioxide and carbon monoxide and be performed according to the applicable EPA test methods as specified in 40 CFR Part 60, Appendix A. In the case of carbon monoxide, however, Stone may conduct this test using the ORSAT method. Alternative equivalent methods to 40 CFR Part 60, Appendix A, may be used only upon written approval by the department.

F. Each lime kiln shall be equipped with a stack which has safe access to the test ports and which meets the criteria of 40 CFR Part 60, Appendix A, Method 1.

G. For all stack tests, a pretest conference shall be held at least 30 days prior to the test between Stone, the tester and the department. The department may require a written testing protocol, including quality assurance procedures, prior to the pretest conference.

H. Stone shall discontinue the burning of coke within 12 hours of being notified by the Missoula City-County Health Department that a Stage II, III or IV Alert is in progress within the air stagnation zone. Stone may resume using coke as soon thereafter as the alert has been cancelled.

I. Stone shall discontinue the burning of coke as soon as reasonably possible, but not more than one hour, when a malfunction of the kiln or scrubber occurs provided that such a malfunction has the potential to increase emissions of sulfur dioxide into the outdoor atmosphere.

SECTION III: Ambient Air Monitoring and Reporting Requirements

A. Stone Container shall install, operate and maintain one ambient air monitoring site in the vicinity of its kraft pulp and linerboard facility. The monitoring site shall consist of all equipment, supplies and personnel resources necessary and sufficient to monitor nitrogen dioxide levels in the ambient air in accordance with the procedures provided below.

B. Stone shall commence air monitoring within 90 days after the start of burning of petroleum coke in each of the four lime kilns.

C. For purposes of choosing an applicable site location, the department, in conjunction with Stone, the Missoula City-County Health Department, and interested citizens, shall form an ad hoc ambient air quality monitoring committee. The committee shall consist of the following members:

Stone Container	-	1 member
Missoula City-County Health Dept.	-	1 member
Department	-	1 member
Interested Citizens	-	2 members and 2 alternates

Each organization shall choose their respective committee member except that the department shall choose the citizen members from a list of names of anyone expressing interest in this subject. The department shall serve as chair for the committee.

D. The purpose of the monitoring committee in C. above is to choose the ambient air quality monitoring site for the continuous measurement of nitrogen dioxide. The chosen monitoring site must meet the minimum quality assurance requirements found in the Montana Quality Assurance Manual, including siting criteria. The site must also have adequate access and power requirements within a reasonable distance of the proposed monitoring station. In the event a consensus on site

selection can not be reached, the department shall determine the final site location. The monitoring site must remain in the same location for at least four consecutive quarters. It may be moved following four consecutive quarters in accordance with paragraph E.

E. The ambient air quality monitoring of nitrogen dioxide will continue for at least four consecutive quarters after the applicable lime kiln has been converted to coke and a maximum burn rate has been established. Following the successful gathering of four consecutive quarters of valid ambient air quality data collected in accordance with the requirements of H. below, the committee shall review the data and make a determination of whether or not to continue monitoring the effects of the coke conversion project or otherwise increase or decrease the network size. The committee's decision of whether or not to increase, decrease, or alter the network configuration in order to measure the impact of the coke conversion project will be based upon the nitrogen dioxide ambient monitoring results as they relate to potential damage to human health, vegetation, animals, or otherwise threaten compliance with the ambient air quality standards. In the event a consensus can not be reached by the committee, the department shall determine any future ambient air quality monitoring for nitrogen dioxide.

F. Any changes in the ambient monitoring network not related to site location and duration of monitoring must be approved in writing by the department. The department shall notify the committee of any approved changes to the monitoring network.

G. The committee may choose to develop a more comprehensive monitoring plan of the effects of the coke conversion project relating to vegetation and animal monitoring. None of the members of the committee, however, are bound to supply financial or other resources for completing these plans. As funding allows, it is the intent of the department that such a plan be a cooperative effort between the department, Stone, City-County Health Department, the University of Montana, and any other citizen or professional resources in the Missoula Valley.

H. Stone shall utilize air monitoring and quality assurance procedures which equal 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, and any other requirements specified by the department. These requirements extend to all aspects of air monitoring including, but not limited to, siting criteria, shelter design, equipment selection, calibration, maintenance, repair, zero/span procedures, precision, accuracy, data handling, control limits, and data validation.

I. Stone shall submit monthly data reports to the department within 45 days after the end of each month and an annual data report within 90 days after the end of the calendar year. Stone may, at their discretion, submit required data from the existing monitoring network at the same intervals and reporting requirements specified in this section.

J. 1. The monthly report shall consist of a narrative data summary. The monthly report to the department must also consist of a data submittal of all data points on SAROAD format on floppy diskettes which are compatible with the department's computer system. The narrative data summary shall include:

a. The first and second highest 24-hour concentrations for nitrogen dioxide;

b. The first and second highest 1-hour concentrations for nitrogen dioxide;

c. The monthly wind roses (from Stone's site #1);

d. A summary of the data collection efficiency;

e. A summary of the reasons for missing data;

f. A precision and accuracy summary;

g. Calibration information.

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

a. A pollution trend analysis;

b. The annual means, first and second highest 24-hour concentrations, first and second highest 1-hour concentrations for nitrogen dioxide at each site;

c. The annual wind roses from each site;

d. An annual summary of data collection efficiency;

e. An annual summary of precision and accuracy data;

f. An annual summary of any ambient standard exceedances;

g. Recommendations for future monitoring.

ATTACHMENT C

Modified June 14, 1989
Conditions of Permit #2589

Air quality permit #2589 (originally #792-013075) is hereby altered to include the old cardboard container (OCC) facility to be installed during the summer of 1989. This alteration is conducted in accordance with ARM 16.8.1105. Since there is no significant increase in emissions, only ARM 16.8.1100, Montana Permit Rule, will apply. This rule requires BACT to be applied to the air pollution control equipment.

SECTION I: Permitted Facilities

A. The general facilities associated with this project are:

1. Unloading docks for 400 TPD of old cardboard
2. Shredder and repulping tank
3. Cleaning facilities to remove burnable and nonburnable waste from the old cardboard
4. Disposal systems for all waste removed from the old cardboard

B. Emission Inventory for the Hog Fuel Boiler

Current average fuel consumption is:

Waste wood - 7955 Tons/mo x 12 = 95,460 Tons/yr
Natural gas - 3648 MCF/mo x 12 = 43,776 MCF/yr

1. Current Emissions (from wood combustion):

	Emissions
Particulate from company stack test	18.0 TPY
SO_2 - .15 lb/T x .5 scrub eff x 95460 T wood/yr x 1/2000	3.5 TPY
NOx - 2.8 lb/T x 1 scrub eff x 95460 T wood/yr x 1/2000	133.6 TPY
CO - 4.0 lb/T x 1 scrub eff x 95460 T wood/yr x 1/2000	190.9 TPY
$VOC_{(NM)}$ - 1.4 lb/T x 1 scrub eff x 95460 T wood/yr x 1/2000	66.8 TPY

(from AP-42 1.6-1)

Natural gas emissions are negligible. The highest contribution from natural gas would be approximately 1 T/yr of NOx; all other pollutants are less than 1 T/yr.

2. Emissions from Waste Plastic Combustion:

Waste combustion rate: 15.1 T/day, 468 T/mo, 5616 T/yr
AP-42 2.1-3 Uncont. E.F. for Commercial and Ind. Refuse

Particulate = 7 lb/T x .04 scrub eff x 5616 x 1/2000 = 0.8 TPY
(Multichamber)

SO_2	2.5	x .6	x 5616 x 1/2000 =	3.5 TPY
NOx	3	x 1	x 5616 x 1/2000 =	8.4 TPY
VOC	3	x 1	x 5616 x 1/2000 =	8.4 TPY
CO	10	x 1	x 5616 x 1/2000 =	28.0 TPY

3. Toxics Review

These emissions are calculated from laboratory results of two samples of plastic waste which were collected from two paper recycling plants currently in operation. Analysis was done by Badger Laboratories for Stone Container (letter from Ms. Jenny Brown to W. Norton, dated 2-14-89)

Chloride analysis (as total halide)

Max. value - 0.43% x 15.1 T/day x 365 d/yr x .04 scrub eff x 2000 lb/T = 1896 lb/yr

(This assumes all chloride goes to scrubber; some may remain in bottom ash.)

Beryllium

Max. value - .05 ppm x 15.1 T/day x 2000 lb/T x 365 day/yr = 0.55 lb/yr

Cadmium

Max. value - <.05 ppm x 15.1 T/day x 2000 lb/T x 365 day/yr = <0.5 lb/yr

Lead

Max. value - 12.6 ppm x (11.02) = 138.9 lb/yr

Mercury

Max. value - <0.01 x 11.02 = <0.1 lb/yr

4. Emission Summary

Parameter	Existing	Plastic Emissions	Total Proposed
Particulate	18 TPY	1 TPY	19 TPY
SO_2	4	3	7
NOx	134	8	142
CO	191	28	219
$VOC_{(NM)}$	67	8	75

Parameter	Existing	Plastic Emissions	Total Proposed
Toxics:			
Cl	--	1896 lb/yr	1896 lb/yr
Be	--	0.5	0.5
Cd	--	<0.5	<0.5
Pb	--	138.9	138.9
Hg	--	<0.1	<0.1

C. Applicable Regulations

1. NSPS - Not applicable - OCC plants are not a listed component of Kraft pulp mills (see subpart BB, CFR 60.280a).

2. PSD - Not applicable - emissions are not significant. [See ARM 16.8.921(30).]

3. State Permit Rule - ARM 16.8.1113 is applicable and requires that BACT be applied to the permit alteration.

4. BACT Analysis

The applicant has proposed the disposal of 15.1 tons per day of waste plastic in the hog fuel boilers. These boilers are currently controlled with wet scrubbers. The waste fuel boiler is subject to the NSPS limits and the Air Quality Bureau has accepted this scrubber as BACT for this case. The scrubber water maintains a pH between 7.0 and 9.0 which should provide good collection efficiencies for chloride gases. Therefore, the department accepts this control as BACT for this case.

5. Other Toxic Emissions

Lead - Less than 0.6 TPY - exempt from permitting. Company analysis shows 138.9 lbs/yr emission or 0.07 TPY. This is less than 12% of the lead emissions which require permitting under ARM 16.8.1102.

Beryllium - Less than 0.0004 TPY is not significant for PSD purposes. Company analysis shows 0.55 lbs/yr or 0.0003 TPY.

Mercury - Less than 0.1 TPY is not significant for PSD purposes. Company analysis shows 0.11 lb/yr or 0.00 TPY.

Therefore, a permit alteration will be required at this time for disposal of this plastic waste in the hog fuel boilers. However, a stack test for chloride emissions will be required after the system is operational to prove that actual emissions do not exceed the worst case analysis referred to above.

SECTION II: Limitations and Conditions

A. All emission limitations for the hog fuel and waste fuel boilers shall remain as stated in Attachment A.

B. The boiler used for disposal of the burnable waste shall be tested for particulate and for chloride emissions to prove compliance with existing regulations. The chloride emissions shall be compared with the estimated emissions from the permit application. These tests shall conform to EPA stack testing methods 1-5, and the Montana Stack Testing Protocol.

C. A one-time check on the levels of heavy metals emitted from the combustion of waste plastic is required. This shall consist of an analysis of the stack gas for lead, cadmium, beryllium and mercury. These tests shall be done by methods which are acceptable to EPA and the department, and be performed at the same time that the particulate and chloride tests are done. These tests shall be completed within one year of the startup date for the used fiber recycle plant.

SECTION III: Ambient Air Monitoring and Reporting Requirements

No additional ambient monitoring requirements apply at this time.

Permit Analysis

Stone Container Corporation - Missoula
Permit Modification - Frenchtown Facility

A. Stone Container Corporation currently operates a pulp mill and liner board facility at the Frenchtown site located approximately 10 miles northwest of Missoula. The plant underwent a major expansion during the mid-1970s which added several NSPS units. The basic plant capacity was designed for about 1850 tons per day of air dried pulp. An air quality permit covered individual units at that time. Two changes to the permit were made since that time. In 1987, the permit was revised to allow Stone to burn petroleum coke in all four lime kilns. In 1989, the permit was revised again to allow Stone to install and operate a recycled cardboard facility at the plant. This revision increased the capacity of the plant by approximately 400 air dried tons per day.

On July 1, 1987 the Environmental Protection Agency (EPA) promulgated new ambient air quality standards for particulate matter with an aerodynamic diameter of 10 microns or less (PM-10). The annual standard is 50 micrograms per cubic meter and the 24-hour standard is 150 micrograms per cubic meter. These standards were adopted by the Montana Board of Health and Environmental Sciences on April 15, 1988. Due to violations of these standards, Missoula has been designated as a PM-10 nonattainment area. As a result of this designation the Montana Department of Health and Environmental Sciences and the Missoula County Air Pollution Control Agency are required to develop a plan to control these emissions and bring the area into compliance with the federal and state ambient air quality standards.

In order to identify the emission sources which were contributing to the violation of the PM-10 standard, Missoula County conducted a chemical mass balance study (CMB) of the area. The Stone Container mill recovery boilers were identified as significant contributors this area. Therefore, this permit modification is adding general fugitive dust control measures to this facility, and is correcting emission limitations for the No. 5 recovery boiler and the No. 4 lime kiln to agree with NSPS limits. These corrections decreased the allowable emissions enough to satisfy the SIP control plan for the area.

B. Process Description

This facility produces linerboard and other paper products by converting wood chips into pulp and then into paper. Stone uses a typical kraft recovery plant in which the cooking salts are recovered from the digestion process and reused. Stone uses several batch digesters and two continuous digesters to separate the wood fiber from the wood matrix. Digestion gases are controlled with a condenser and all noncondensable gases are incinerated in the lime kilns. The black liquor recovered from this process is used as a fuel in the recovery furnaces and the cooking salts are recovered to be used again. The recaust portion of the plant uses several lime kilns to convert calcium carbonate to calcium oxide, which is then used in converting green liquor from the recovery furnaces into the white cooking liquor. This is then reused to start the digestion process over again.

The plant has three recovery boilers, four lime kilns, and three paper machines with all of the peripheral equipment required by the kraft process.

C. Applicable Regulations

1. ARM 16.8.821 Ambient Standard for PM-10. Stone Container must demonstrate compliance with the applicable ambient air quality standards. The SIP demonstration of attainment indicates that the emission limitations contained in this permit, along with control measures applied to other sources, will bring the Missoula area into compliance with the PM-10 standards.

2. ARM 16.8.1113(a) Modification of Permit. The department is allowed to modify Stone Container Corporation's permit due to a change in an applicable standard (PM-10) adopted by the Board of Health and Environmental Sciences. Stone Container may appeal the department's modification to the Board.

3. ARM 16.8.1115 Inspection of Permit. Stone Container must maintain a copy of their air quality permit at the mill site and make that copy available for inspection by department personnel upon request.

4. ARM 16.8.1117 Compliance with Other Statutes and Rules. Stone Container must comply with all other applicable state, federal, and local laws and regulations.

5. 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.

6. ARM 16.8.1402 Particulate Matter, Fuel Burning Equipment. More stringent limits contained in this permit supersede this rule.

7. ARM 16.8.1403 Particulate Matter, Industrial Process. The requirements of this rule are superseded by the stricter emission limits established in the permit.

8. ARM 16.8.1404 Visible Air Contaminants. The requirements of this permit either supersede this rule because they are more stringent or they are equivalent.

9. Stone Container - Missoula RACT Analysis

   a. Since the recovery boilers were identified as a contributor to the PM-10 area in Missoula, reasonably available control technology (RACT), applies to these units. The RACT analysis for No. 3 and No. 4 recovery

boilers determined that these units meet RACT. The analysis for the No. 5 recovery boiler using the NSPS limits also was determined to be RACT. The reduction in emissions from the NSPS correction on No. 5 was enough to account for Stone's contribution to the Missoula PM-10 area.

b. Since the rest of the plant was not identified as a contributor to the PM-10 nonattainment area, RACT was not applicable to other units.

D. Existing Air Quality

1. The Missoula area is currently a nonattainment area for PM-10 standards. The department has determined, based on its preliminary demonstration of attainment, that the emission limitations contained in this permit, along with control measures applied to other sources, will bring Missoula into compliance with the PM-10 standards.

2. Stone Container Allowable Emissions (Existing)

Source	Allowable Emissions (Existing)	
1) Hog Fuel Boiler	81.4 TPY	Based on
2) #2 Package Boiler	136.5	AQB Permit
3) Power Boiler	444.9	#2589, and
4) #3 Recovery Blr	178.7	Process
5) #4 Recovery Blr	228.7	Rate Rule
6) #1 Lime Kiln	52.6	
7) #2 Lime Kiln	48.5	
8) #3 Lime Kiln	65.5	
9) #3 Smelt Dissolver	25.6	
10) #4 Smelt Dissolver	110.8	
11) #1 Lime Slaker	20.1	
12) #2 Lime Slaker	26.6	
13) PC Washer		
14) M & D Washer	23.4	
15) Base Washer		
16) Top Washer		
17) #1 Paper Machine	121.0	
18) #2 Paper Machine	121.0	
19) Salt cake & Lime Unload	129.9	
20) Starch Unload	147.2	
21) Sawdust conveying		
22) Chip conveying	32.3	
23) Hog Fuel conveying		
24) Waste Fuel Boiler	227.9	
25) #5 Recovery Boiler	166.4	
26) #4 Lime Kiln	62.4	
27) #5 Smelt Dissolver	21.9	
28) #3 Lime Slaker	13.1	
29) #3 Paper Machine	178.4	
30) M & D Cyclone	11.0	

Source	Allowable Emissions (Existing)
31) Pins Cyclone	11.0
32) Batch Cyclone	11.0
Total Allowable Particulate	2697.8

3. Stone Container Emissions (Proposed)

Source	Emissions (Proposed)	
1) Hog Fuel Boiler	81.4 TPY	Based on
2) #2 Package Boiler	136.5	AQB Permit
3) Power Boiler	444.9	#2589, and
4) #3 Recovery Blr	178.7	Process
5) #4 Recovery Blr	228.7	Rate Rule
6) #1 Lime Kiln	52.6	
7) #2 Lime Kiln	48.5	
8) #3 Lime Kiln	65.5	
9) #3 Smelt Dissolver	25.6	
10) #4 Smelt Dissolver	110.8	
11) #1 Lime Slaker	20.1	
12) #2 Lime Slaker	26.6	
13) PC Washer		
14) M & D Washer	23.4	
15) Base Washer		
16) Top Washer		
17) #1 Paper Machine	121.0	
18) #2 Paper Machine	121.0	
19) Salt Cake & Lime Unload	129.9	
20) Starch Unload	147.2	
21) Sawdust conveying		
22) Chip conveying	32.3	
23) Hog Fuel conveying		
24) Waste Fuel Boiler	227.9	
25) #5 Recovery Boiler	115.6	
26) #4 Lime Kiln	37.2	
27) #5 Smelt Dissolver	21.9	
28) #3 Lime Slaker	13.1	
29) #3 Paper Machine	178.4	
30) M & D Cyclone	11.0	
31) Pins Cyclone	11.0	
32) Batch Cyclone	11.0	
Total Proposed Allowable Particulate	2621.8	

4. Impact Analysis

No modeling has been required for this permit because it is a modification of previous permits with a reduction in allowable emissions. This permit modification is necessary to cap the emissions from all sources at the Stone Container facility. The reduction in emissions from all sources in the Missoula area will ensure compliance with the PM-10 regulations in the area.

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

ENVIRONMENTAL ASSESSMENT (EA)

Project or Application: Stone Container Corporation

Description of Project: SIP Modification - PM-10

Benefits and Purpose of Proposal: This permit modification will add enforceable provisions to the Stone permit which will help attain PM-10 compliance in the Missoula area.

Description and analysis of reasonable alternatives whenever alternatives are reasonably available and prudent to consider: This permit modification is required by the changes in federal air quality laws. This permit modification has been discussed with company officials and is the best alternative to bring the Missoula area into compliance.

A listing and appropriate evaluation of mitigation, stipulations and other controls enforceable by the agency or another government agency: See permit limitations.

Recommendation: An EIS is not needed with this modification.

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

If an EIS is not required, explain why the EA is an appropriate level of analysis: This is a modification of a permit for an existing facility, with a reduction in allowable emissions. Environmental impacts will decrease as a result, and it will help the area come into compliance with federal and state air quality regulations.

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

Individuals or groups contributing to this EA: AQB staff.

EA prepared by: Warren Norton

Date: January 7, 1992

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

		MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ATTACHED
1. TERRESTRIAL AND AQUATIC LIFE AND HABITATS	1.			x			
2. WATER QUALITY, QUANTITY AND DISTRIBUTION	2.			x			
3. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE	3.			x			
4. VEGETATION COVER, QUANTITY AND QUALITY	4.			x			
5. AESTHETICS	5.			x			
6. AIR QUALITY	6.			x			
7. UNIQUE ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCE	7.			x			
8. DEMANDS ON ENVIRONMENTAL RESOURCE OF WATER, AIR AND ENERGY	8.			x			
9 HISTORICAL AND ARCHAEOLOGICAL SITES	9.			x			
10. CUMULATIVE AND SECONDARY IMPACTS	10.			x			

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

		MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ATTACHED
1. SOCIAL STRUCTURES AND MORES	1.			x			
2. CULTURAL UNIQUENESS AND DIVERSITY	2.			x			
3. LOCAL AND STATE TAX BASE AND TAX REVENUE	3.			x			
4. AGRICULTURAL OR INDUSTRIAL PRODUCTION	4.			x			
5. HUMAN HEALTH	5.			x			
6. ACCESS TO AND QUALITY OR RECREATIONAL & WILDERNESS ACTIVITIES	6.			x			
7. QUANTITY AND DISTRIBUTION OF EMPLOYMENT	7.			x			
8. DISTRIBUTION OF POPULATION	8.			x			
9. DEMANDS FOR GOVERNMENTAL SERVICES	9.			x			
10. INDUSTRIAL AND COMMERCIAL ACTIVITY	10.			x			
11. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS	11.			x			
12. CUMULATIVE AND SECONDARY IMPACTS	12.			x			

DEPARTMENT OF ENVIRONMENTAL QUALITY
PERMITTING AND COMPLIANCE DIVISION

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August 22, 1996

Cam Balentine
Rhône-Poulenc Basic Chemicals Company
P.O. Box 3146
Butte, Montana 59702

Dear Mr. Balentine:

Air Quality Permit #1636-06 is deemed final as of August 22, 1996 by the Department of Environmental Quality. This permit is for an elemental phosphorus plant. All conditions of the department's decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Director,

Charles Homer
Air Quality Specialist

CH:tc

Enclosure

Montana Department of Environmental Quality
Permitting and Compliance Division

Air Quality Permit #1636-06

Rhône-Poulenc Basic Chemicals Company
P.O. Box 3146
Butte, Montana 59702

August 22, 1996

Air Quality Permit

Issued to: Rhône-Poulenc
Basic Chemicals Company
P.O. Box 3146
Butte, Montana 59702

Permit #1636-06
Permit #1636-05 Issued: 4/4/96
Permit #1636-04 Issued: 10/28/95
Permit #1636-03 Issued: 09/27/93
Permit #1636-02 Issued: 10/29/92
Permit #1636A Issued: 10/28/91
Permit Application Complete: 5/1/96
Preliminary Determination Issued: 7/19/96
Department Decision Issued: 8/6/96
Permit Final: 8/22/96

An air quality permit with conditions is hereby granted to the above-named permittee, hereinafter referred to as "Rhône-Poulenc," 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 CONTAMINATION SOURCES, ARM 16.8.1101, *et seq.*, as amended for the following:

SECTION I: Permitted Facilities

A. Rhône-Poulenc's elemental phosphorus plant located seven miles west of Butte, Montana near Ramsay, Montana in SW¼, Section 23, Township 3 North, Range 9 West, Silver Bow County.

B. Existing Process Equipment and Control Equipment

TABLE 1

Process Equipment	Control Equipment
1. No. 1 Nodule Cooler	1. a. Six (6) Buell Model 6 Bar #64 Series 43A cyclone collectors with 8' x 9' x 4' knockout box
	b. A Joy Turbulaire Model 560B wet impinger dust collector
2. No. 1 Coke Dryer/Nodule Sizing-Crushing	2. a. Four (4) Buell AC-130 cyclone collectors
	b. A Joy Turbulaire Model 560B wet impinger dust collector
3. No. 2 Nodule Cooler	3. a. Six (6) Buell Model 6 Bar #64 Series 43A cyclone collectors with 8' x 9' x 4' knockout box
	b. A Joy Turbulaire Model 560B wet impinger dust collector

TABLE 1 (cont)

Process Equipment		Control Equipment	
4.	No. 2 Coke Dryer/Nodule Sizing-Crushing	4. a.	Four (4) Buell AC-130 cyclone collectors
		b.	A Joy Turbulaire Model 560B wet impinger dust collector
5.	No. 1 Kiln	5. a.	Six (6) Buell Model 2 Bar #40 Series 43A cyclone collectors
		b.	A Calvert stainless steel quench tower.
		c.	A Calvert stainless steel absorber tower.
		d.	A Calvert Collision scrubber, with 70,000 acfm, manufactured in 1993.
		e.	A stainless steel mist elimination system
		f.	A 600 HP stainless steel ID fan installed in 1993.
		g.	A 100 foot stainless steel stack installed in 1993.
6.	No. 2 Kiln	6. a.	Six (6) Buell Model 2 Bar #40 Series 43A cyclone collectors
		b.	A 60 foot tall by 18 foot diameter stainless steel spray tower.
		c.	A Calvert Collision scrubber, with 70,000 acfm manufactured in 1993.
		d.	A stainless steel mist elimination system.
		e.	A 600 HP stainless steel ID fan installed in 1993.
		f.	A 90 foot stainless steel stack installed in 1993.

TABLE 1 (cont)

Process Equipment		Control Equipment	
7.	No. 1 Furnace (built in 1991)	7.	Three (3) John Zink Co. Hydrosonic Model 5000 Tandem Nozzle Scrubbers (Tap hole fume scrubber controlling No. 1 & No. 2 Furnaces) (ARM 16.8.1103)
8.	No. 2 Furnace	8.	Three (3) John Zink Co. Hydrosonic Model 5000 Tandem Nozzle Scrubbers (Tap hole fume scrubber controlling No. 1 & No. 2 Furnaces) (ARM 16.8.1103)
9.	P_4 Handling	9.	A Clermont candle scrubber - Model SBR100 wet filter bed scrubber
10.	Kiln Feed System 168S-10-20	10.	A Mikro-Pulsaire TRH Baghouse
11.	Silos	11.	A Joy Turbulaire Model 48-T wet impinger dust collector
12.	Coal Storage - Outdoor	12.	None
13.	Coke Storage - Outdoor	13.	None
14.	Ore Storage - Outdoor	14.	None
15.	Silica Storage - Outdoor	15.	None
16.	Coal Unloading	16.	Partial enclosure (hopper)
17.	Coke Unloading	17.	None
18.	Ore Unloading	18.	Partial enclosure (bunker) and water as necessary
19.	Silica Unloading	19.	None
20.	Coal Handling	20.	None
21.	Coke Handling	21.	None
22.	Ore Handling	22.	None
23.	Silica Handling	23.	None

TABLE 1 (cont)

Process Equipment		Control Equipment
24.	Boiler No. 3	24. None
25.	Roaster	25. A Clermont candle scrubber - Model SBR 100 wet filter bed scrubber
26.	Fugitive dust	26. Water and/or chemical dust suppressant (haul roads and access roads)
27.	Slag Granulation System	27. None
28.	Two Furnace Flares	28. The furnace flares are only used to incinerate CO during those periods when one or both kilns are down and are considered emergency sources only.
29.	Roaster Residue Storage	29. None
30.	Coke Dust Storage	30. None
31.	Slag Storage	31. None
32.	Kiln Feed Clean Up Storage	32. None
33.	Kiln Nodules Storage	33. None
34.	Pond Tailings Storage	34. Partially wetted
35.	Diesel Generator	35. None
36.	Ferrophos handling	36. None
37.	Slag Handling	37. None
38.	Roaster Residue Handling	38. None

39. Dry coke and silica handling facility. The facility consists of the following equipment:

    a. T-100 Loadout Hopper
    b. C-100 Loadout Conveyor (Covered)
    c. B-120 Bucket Elevator (Enclosed design)
    d. S-130 Coke Screen (Enclosed design)
    e. T-140 Coke Fines Bin
    f. D-200 Baghouse (20,000 SCFM) and associated hoods and ducting
    g. H-200 Pugmill (Enclosed design)
    h. C-150 Silo Transfer Conveyor (24" flat belt, 253' long - enclosed)

C. Current Permit Alteration

The current permit alteration will allow an increase in the particulate emission limits for the coke dryers and the silo scrubber at Rhône-Poulenc. The emission limits were established during development of the Butte PM-10 State Implementation Plan (SIP) based on actual emissions during the base year (winter of 1987-1988). Rhône-Poulenc has demonstrated, to the satisfaction of the department, that the estimation of actual emissions for the base year, and thus the emission limits established, were incorrect.

This action will also revise the facility-wide emission limit for Rhône-Poulenc. This facility-wide cap was also based on the actual SIP base year emissions. In addition to the revision of the emission limits for the coke dryers and the silo scrubber, two sources have been identified which were not included in the establishment of this cap. The first source is the fugitive emissions from the handling of kiln nodules and the second is the fugitive emissions from the tailings pond storage area. This permitting action will increase the allowable emissions from the facility by 147.8 tons/year of particulate and 113 tons/year of PM-10. Actual emissions from the facility are not expected to change because of this permitting action.

SECTION II: Limits and Conditions

A. Emission Control Requirements

Rhône-Poulenc shall install, operate and maintain all emission control equipment as specified in Section I of the permit and as proposed in their applications for changes to their Montana Air Quality Permit and subsequent revisions:

1. All particulate control equipment on sources with stack emissions shall maintain at least 90% total particulate control efficiency[1] as demonstrated by source tests. This will include, but not be limited to, the No. 1 and No. 2 Nodule Coolers, the No. 1 and No. 2 Coke Dryers, the No. 1 and No. 2 Kilns, the No. 1 and No. 2 Furnaces, the P_4 Handling System, the Kiln Feed System, the Silos, and the Roaster. Particulate control efficiency testing shall only be required when the department determines the testing is necessary (ARM 16.8.704).

2. Fall distance shall be minimized during unloading and handling of coal, coke, ore, and silica to maintain compliance with the 20% opacity standard (ARM 14.8.1401).

3. A flexible loading spout shall be used to minimize the free fall of the material being removed from the T-140 Coke Fines Bin (ARM 16.8.1103).

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[1] The control efficiency requirement shall be calculated from the point the gas stream enters the first piece of control equipment through the point after the last piece of control equipment for each piece of process equipment and before the gas stream exits the stack.

4. Closed top trucks shall be used for transporting coke fines from the coke handling facility (ARM 16.8.1103).

5. All conveyors in the coke and silica handling facility shall be covered and have hoods or ventilation venting to the D-200 Baghouse (ARM 16.8.1103).

6. The following equipment in the coke and silica handling facility shall have hoods or ventilation venting to the D-200 Baghouse: T-100 Loadout Hopper, C-110 Loadout Conveyor, B-120 Bucket Elevator, S-130 Coke Screen, T-140 Coke Fines Bin, and C-150 Silo Transfer Conveyor (ARM 16.8.1103).

7. Dust from the D-200 Baghouse sump shall be put through the pugmill prior to transportation and disposal of the dust (ARM 16.8.1103).

B. Emission Limits

1. Rhône-Poulenc shall not cause or authorize to be discharged into the atmosphere any stack or fugitive particulate emissions in excess of the following plant-wide limits (40 CFR Part 50.6, 40 CFR Part 51, and ARM 16.8.1109):

   a. Total particulate emissions from the entire facility shall be limited to 353.3 tons per year.

   b. PM-10 emissions from the entire facility shall be limited to 242.0 tons per year.

   c. Total particulate emissions from the entire facility shall be limited to 2260.2 lbs per day[2].

   d. PM-10 emissions from the entire facility shall be limited to 1593.9 lbs per day[2].

2. Particulate emissions from the sources in Table 2 shall be limited to the amount listed.

TABLE 2

SOURCE	TOTAL PARTICULATE (LBS/HR)	PM-10 (LBS/HR)
No. 1 Nodule Cooler	3.3	1.8
No. 1 Coke Dryer	14.8	12.6
No. 2 Nodule Cooler	3.8	1.9
No. 2 Coke Dryer	8.5	7.2
No. 1 Kiln	7.0	6.2
No. 2 Kiln	4.5	4.0
No. 1 and No. 2 Furnaces	4.1	3.7
Silos	3.7	3.2
D-200 Baghouse Stack	0.86	0.86

[2] Day means the 24-hour period between 12:01 a.m. and 12:00 midnight.

3. Rhône-Poulenc shall not store more than 1,181,599 square feet of materials having silt contents of 4% or less, not including the slag pile.

4. Rhône-Poulenc shall not store more than 140,565 square feet of materials having silt contents of greater than 4% not including the pond tailings storage.

5. Rhône-Poulenc may chemically seal piles or reclaim piles with vegetation to reduce the amount of storage applied to the limits contained in Sections II.B.3 and 4.

6. Rhône-Poulenc shall not cause or authorize to be discharged into the atmosphere visible emissions that exhibit an opacity of 20% or greater, based on a six-minute average, from any sources, stack or fugitive, installed after November 30, 1968, unless otherwise specified (ARM 16.8.1401 and 1404). Opacity averages from CEMS shall be in a six-minute rolling average format. This opacity limit applies to, but is not limited to, the tap hole fume scrubbers on the No. 1 and No. 2 Furnaces, Kiln Feed System, Roaster, No. 3 Boiler, P_4 handling and all fuel and materials handling.

7. Rhône-Poulenc shall not cause or authorize to be discharged into the atmosphere visible stack emissions that exhibit an opacity of 20% or greater from the No. 1 and No. 2 Kilns (ARM 16.8.1109).

8. Rhône-Poulenc shall not cause or authorize to be discharged into the atmosphere any visible fugitive emissions, from materials handling, outdoor storage of raw materials or fuel, haul roads, access roads, parking lots and the general plant area, that exhibit opacity of 20% or greater averaged over six minutes. Haul roads, access roads and the general plant area shall be treated with water and/or chemical dust suppressant as necessary to maintain compliance with the 20% opacity limitation (ARM 16.8.1401).

9. Rhône-Poulenc shall not burn coal with a sulfur content greater than 1.0%, by weight. Rhône-Poulenc shall submit, as part of their quarterly excess emissions report, all coal analyses (including sulfur content) conducted on a schedule approved by the department and shall include a determination of compliance with the sulfur-in-fuel rule (ARM 16.8.1411).

10. Stack emissions from the Coke and Silica Handling System are limited to 0.005 gr/dscf of particulate matter (ARM 16.8.1103).

11. Visible emissions from the Coke and Silica Handling System are limited to 10% opacity (ARM 16.8.1103).

12. Rhône-Poulenc shall not operate the P_4 Clermont bypass unless the No.1 and No. 2 Furnaces and the condensers are shut down (ARM 16.8.1103).

13. The roaster fines transportation system shall be limited to 750 hours of operation per year (ARM 16.8.1109).

C. Compliance Determination

Emission factors to determine compliance with the particulate emission limits in Section II.B.1 and 2 for fugitive sources are as follows:

TABLE 3

EMISSION FACTORS FOR PARTICULATE

SOURCE		EMISSION FACTOR	UNITS	CONTROL EFFICIENCIES
1.	Storage Piles Greater than 4%	52.423[3]	lbs/day/acre	0%
2.	Storage Piles Less or Equal to 4%	5.924[3]	lbs/day/acre	0%
3.	Pond Tailings Storage	23.73	lbs/day/acre	Percentage of wetted area
4.	Coal Unloading	0.066	lbs/ton of coal	50%
5.	Coke Unloading	0.062	lbs/ton of coke	0%
6.	Ore Unloading	0.062	lbs/ton of ore	50%
7.	Silica Unloading	0.062	lbs/ton of silica	0%
8.	Coal Handling	0.01	lbs/ton of coal	0%
9.	Coke Handling	0.01	lbs/ton of coke	0%
10.	Ore Handling	0.01	lbs/ton of ore	0%
11.	Silica Handling	0.12	lbs/ton of silica	0%
12.	Roaster Residue Handling	0.01	lbs/ton of residue	0%
13.	Slag to stockpile	0.01	lbs/ton of slag	0%
14.	Ferrophos Handling	0.01	lbs/ton of ferrophos	0%
15.	Dozer (Unit #5)	1.39**	lbs/vmt	0%
16.	Dozer (Unit #15)	2.5**	lbs/vmt	0%
17.	Loader (Unit #16)	4.44**	lbs/vmt	0%
18.	Loader (Unit #18)	4.44**	lbs/vmt	0%
19.	Loader (Unit #20)	4.44**	lbs/vmt	0%
20.	TS-24B (Unit #21)	7.22**	lbs/vmt	0%
21.	Truck (Unit #28)	10.83**	lbs/vmt	0%
22.	Truck (Unit #32)	10.83**	lbs/vmt	0%
23.	Diesel Exhaust - Vehicles	30.1	lbs/1000 gals	0%
24.	Diesel Exhaust - Generator	33.5	lbs/1000 gals	0%
25.	Slag Storage	0.0014	lbs/tons of slag	0%
26.	Nodule Handling	0.01	lbs/ton of nodules	0%

** $E=k(5.9)(s/12)(S/30)(W/3)^{0.7}(w/4)^{0.5}((365-p)/365)$, k=1. AP-42 11.2.1, 9/88. Rhône-Poulenc may modify these emission factors, based on changes in annual precipitation rate, for calculating annual emissions. Unit numbers for vehicles reference those vehicles in service at the time of issuance of Permit #1636-04. Changes to these units may occur based on changes to Rhône Poulenc's vehicle fleet.

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[3] The emission factors for the storage piles were calculated using the following equation: $E=1.7(s/1.5)*((365-p)/235)*(f/15)$ from {AP-42 Chapter 11}. The variable values are contained in Section VI. of the analysis for permit #1636-04. One acre equals 43,560 square feet. These emission factors do not apply to the pond tailings storage.

TABLE 4

EMISSION FACTORS FOR PM-10

SOURCE		EMISSION FACTOR	UNITS	CONTROL EFFICIENCIES
1.	Storage Piles Greater than 4%	26.21[3]	lbs/day/acre	0%
2.	Storage Piles Less or Equal to 4%	2.96[3]	lbs/day/acre	0%
3.	Pond Tailings Storage	11.8	lbs/day/acre	Percentage of wetted area
4.	Coal Unloading	0.06	lbs/tons of coal	50%
5.	Coke Unloading	0.05	lbs/ton of coke	0%
6.	Ore Unloading	0.05	lbs/ton of ore	50%
7.	Silica Unloading	0.05	lbs/ton of silica	0%
8.	Coal Handling	0.009	lbs/ton of coal	0%
9.	Coke Handling	0.009	lbs/ton of coke	0%
10.	Ore Handling	0.009	lbs/ton of ore	0%
11.	Silica Handling	0.10	lbs/ton of silica	0%
12.	Roaster Residue Handling	0.009	lbs/ton of residue	0%
13.	Slag to stockpile	0.009	lbs/ton of slag	0%
14.	Ferrophos Handling	0.009	lbs/ton of ferrophos	0%
15.	Dozer (Unit #5)	0.5**	lbs/vmt	0%
16.	Dozer (Unit #15)	0.9**	lbs/vmt	0%
17.	Loader (Unit #16)	1.6**	lbs/vmt	0%
18.	Loader (Unit #18)	1.6**	lbs/vmt	0%
19.	Loader (Unit #20)	1.6**	lbs/vmt	0%
20.	TS-24B (Unit #21)	2.6**	lbs/vmt	0%
21.	Truck (Unit #28)	3.9**	lbs/vmt	0%
22.	Truck (Unit #32)	3.9**	lbs/vmt	0%
23.	Diesel Exhaust - Vehicles	30.1	lbs/1000 gals	0%
24.	Diesel Exhaust - Generator	33.5	lbs/1000 gals	0%
25.	Slag Storage	0.0007	lbs/ton of slag	0%
26.	Nodule Handling	0.005	lbs/ton of nodules	0%

** $E=k(5.9)(s/12)(S/30)(W/3)^{0.7}(w/4)^{0.5}((365-p)/365)$, k=0.36. AP-42 11.2.1, 9/88. Rhône-Poulenc may modify these emission factors, based on changes in annual precipitation rate, for calculating annual emissions. Unit numbers for vehicles reference those vehicles in service at the time of issuance of Permit #1636-04. Changes to these units may occur based on changes to Rhône Poulenc's vehicle fleet.

D. Emission Testing

1. The Coke and Silica Handling System shall be initially tested and the results submitted to the department in order to demonstrate compliance with the emission limitations contained in Section II.B.2., 10 and 11 within 180 days of start-up of the Coke and Silica Handling System. Testing on the system shall be performed on a continuing every-four-year basis after the initial test (ARM 16.8.709 and ARM 16.8.1109).

2. All source tests shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 16.8.709).

3. Rhône-Poulenc shall conduct source tests for particulate and opacity on each kiln and each tap hole fume scrubber annually to demonstrate compliance with the applicable emission standards contained in Section II.B.2., 6 and 7 (ARM 16.8.1109).

4. Rhône-Poulenc shall conduct source tests for particulate and opacity on the No. 1 & No. 2 Coke Dryers, the No. 1 & No. 2 Nodule Coolers, and the silo control system annually and demonstrate compliance with the applicable emission standards in Section II.B.2. and 6 (ARM 16.8.1109).

5. All source tests shall include determination of total mass particulate and PM-10 (ARM 16.8.1109).

6. Rhône-Poulenc shall perform visible emissions (opacity) observations on all sources of visible emissions (fugitive, stack, or vent) during all situations, either claimed malfunctions, operator error, or maintenance, which result in visible emissions in excess of any allowable limit at the facility. These observations shall be conducted by certified visible emission evaluators in accordance with EPA Reference Method 9 for opacity as outlined in 40 CFR Part 60, Appendix A (ARM 16.8.704).

7. A letter explaining the cause of the excess visible emissions and a copy of the Method 9 observations shall be submitted to the department within seven days of the Method 9 observations (ARM 16.8.1109).

8. The department may require further testing (ARM 16.8.704).

E. Emission Monitoring and Reporting

1. Rhône-Poulenc shall install, calibrate, maintain, and operate continuous emission monitoring systems (CEMS) to monitor and record the opacity of a representative portion of the gases discharged into the atmosphere from each tap hole fume scrubber stack and the No. 2 Kiln (ARM 16.8.1109).

   a. The span of these systems shall be set between 35 and 45 percent opacity.

   b. The opacity CEMS shall conform to all requirements of 40 CFR Part 60, Appendix B, Performance Specification 1 - Specifications and Test Procedures for Opacity Continuous Emission Monitoring Systems in Stationary Sources (PS1).

   c. The opacity CEMS data will be used to demonstrate compliance with the applicable opacity limitations for each source (i.e., 20% for the furnaces and 20% for the kilns). Rhône-Poulenc shall maintain, as a minimum, compliance with the applicable opacity limitations, as demonstrated by the CEMS, 95% of the time the CEMS is operating.

   d. When either CEMS is not operating for a period of greater than 24 hours, Rhône-Poulenc shall notify the department in writing and monitor visible emissions from the tap hole fume scrubber stacks and the No. 2 Kiln at least once per day using a certified visible emissions

observer who will perform visible emissions observations and record the results. These observations shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 9 and the Montana Visible Emissions Field Documentation Form. These observations on the furnaces shall occur during the taps or flushes and shall consist of continuous observation throughout one entire tap or flush cycle. The observations on the No. 2 Kiln shall be conducted during normal operation of the kiln.

2. Rhône-Poulenc shall submit a written report of all excess emissions quarterly. Periods of excess emissions shall be defined as those averaged over a six-minute period for which the average opacity is greater than the applicable opacity standard (i.e., 20% for the furnaces and 20% for the kilns). The report shall be in the format contained in Attachment 2 and including, as a minimum, the following (ARM 16.8.1109):

   a. The magnitude and duration of excess emissions and the date and time of commencement and completion of each time period of excess emissions.

   b. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

   c. The date and time identifying each period during which the opacity CEMS was inoperative except for zero and span checks. The nature of the system repairs or adjustments must also be reported.

   d. When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

   e. The percentage of time the opacity CEMS was available. This shall be calculated as

$$1 - \frac{\text{CEMS downtime (in hours) during point source operation}}{\text{hours of point source operation}} \times 100$$

   This shall be reported as percent CEMS availability during point source operation. Rhône-Poulenc shall maintain a minimum of 95% CEMS availability during point source operation.

   f. The percentage of time the opacity CEMS indicated compliance. This shall be calculated as:

$$1 - \frac{\text{total hours of excess emissions during point source operation}}{\text{total hours of point source operation}} \times 100$$

   This shall be reported as percent compliance. Rhône-Poulenc shall maintain, as a minimum, compliance with the applicable opacity standard (i.e., 20% for the furnaces and 20% for the kilns) as

demonstrated by the CEMS, 95% of the time the point source is operating.

g. The excess emission reports shall be submitted within 45 days following the end of the reporting period (January-March, April-June, July-September, and October-December).

3. Rhône-Poulenc shall inspect and audit the opacity CEMS quarterly using neutral density filters. Rhône-Poulenc shall conduct these audits using the appropriate procedures and forms in "EPA Technical Assistance Document: Performance Audit Procedures for Opacity Monitors," (EPA-450/4-92-010, April 1992). The results of these inspections and audits shall be included in the quarterly excess emission report (ARM 16.8.1109).

4. Rhône-Poulenc shall develop and implement a standard operating procedures manual and a quality assurance plan for the opacity CEMS. These documents shall be submitted to the department for approval within 180 days of completion of construction and commencement of operation (this information has been submitted) (ARM 16.8.1109).

5. Rhône-Poulenc shall maintain a file of all measurements from the opacity CEMS, and performance testing measurements; all opacity CEMS performance evaluations; all opacity CEMS or monitoring device calibration checks and audits; and adjustments and maintenance performed on these systems or devices recorded in a permanent form suitable for inspection. The file shall be retained on-site for at least three years following the date of such measurements and reports. Rhône-Poulenc shall supply these records to the department upon request (ARM 16.8.1109).

F. Annual Emission Inventory Reporting Requirements

1. Rhône-Poulenc shall supply the department with annual production information for all emission points as required by the department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis, sources identified in Section I of this permit, and information identified in Table 5 below.

Production information shall be gathered on a calendar-year basis and submitted to the department by the date required in the emission inventory request. Information shall be in the units as required by the department (ARM 16.8.1903).

TABLE 5

	SOURCE	UNITS OF MATERIAL PROCESSED
a.	No. 1 Kiln Nodule Cooler	Tons of nodules to No. 1 nodule cooler
b.	No. 1 Kiln Coke Dryer	Tons of coke to No. 1 kiln coke dryer
c.	No. 1 Kiln Coke Dryer Fuel	MCF of natural gas
d.	No. 2 Kiln Nodule Cooler	Tons of nodules to No. 2 nodule cooler
e.	No. 2 Kiln Coke Dryer	Tons of coke to No. 2 kiln coke dryer

f.	No. 2 Kiln Coke Dryer Fuel	MCF of natural gas
g.	No. 1 Kiln	Tons of ore
h.	No. 1 Kiln Fuel	MCF of natural gas
i.	No. 1 Kiln Fuel	Therms of CO
j.	No. 2 Kiln	Tons of ore
k.	No. 2 Kiln Fuel	MCF of natural gas
l.	No. 2 Kiln Fuel	Therms of CO
m.	No. 2 Kiln Fuel	Tons of coal
n.	No. 1 Phosphorus Furnace	Tons of feed to No. 1 furnace
o.	No. 1 Furnace Coke Fuel	Tons of coke
p.	No. 2 Phosphorus Furnace	Tons of feed to No. 2 furnace
q.	No. 2 Furnace Coke Fuel	Tons of coke
r.	P_4 Handling	Tons of P_4 produced
s.	Kiln Feed System	Tons of material through the kiln feed area
t.	Silos Scrubber	Tons of feed to the furnaces (includes coke, nodules, and silica)
u.	Coal Storage	Square feet of coal in outdoor storage
v.	Met Coke Storage	Square feet of outdoor storage
w.	Chemical Coke Storage	Square feet of outdoor storage
x.	Regular Ore Storage	Square feet of outdoor storage
y.	Washed Ore Storage	Square feet of outdoor storage
z.	Silica Storage	Square feet of outdoor storage
aa.	Coal Unloading	Tons of coal unloaded
bb.	Coke Unloading	Tons of coke unloaded
cc.	Ore Unloading	Tons of ore unloaded
dd.	Silica Unloading	Tons of silica unloaded
ee.	Coal Handling	Tons of coal handled
ff.	Coke Handling	Tons of coke handled
gg.	Ore Handling	Tons of ore handled
hh.	Silica Handling	Tons of silica handled
ii.	No. 3 Boiler Fuel	MCF of natural gas
jj.	Roaster	Tons of material through the roaster
kk.	Slag Granulation System	Tons of slag granulated
ll.	Coke and Silica Handling System	Tons of coke and silica handled
mm.	Roaster Residue Storage	Square feet of storage
nn.	Coke Dust Storage	Square feet of storage
oo.	Slag Storage	Tons of slag produced
pp.	Kiln Feed Clean Up Storage	Square feet of storage
qq.	Kiln Nodules Storage	Square feet of storage
rr.	Kiln Nodule Handling	Tons of nodules handled
ss.	Pond Tailings Storage	Acres of storage and percent wetted

tt. Hours of operation for the following sources:

i. No. 1 Kiln
ii. No. 2 Kiln
iii. No. 1 Furnace
iv. No. 2 Furnace
v. Furnace Emergency Flare
vi. #1 Nodule Cooler
vii. #2 Nodule Cooler
viii. #1 Coke Dryer

ix. #2 Coke Dryer
x. Silos
xi. Coke and Silica Handling System
xii. P_4 Clermont Bypass
xiii. Roaster Fines Transportation System

uu. Vehicle miles traveled on haul roads for each vehicle.
vv. Gallons of diesel used in vehicles.
ww. Fugitive dust information consisting of a listing of all plant vehicles including:

i. Vehicle type;
ii. Vehicle weight;
iii. Number of tires on vehicle;
iv. Average trip length;
v. Number of trips per day;
vi. Average vehicle speed;
vii. Area of activity; and

If the information on vehicle size has not changed over the past year, Rhône-Poulenc only needs to supply the vehicle type and the vehicle miles traveled (VMT) by each vehicle type as required in Sections II.F.46. and 47. If changes occur, Rhône-Poulenc shall supply the information in Section II.F.48. for the changed vehicles.

xx. Fugitive dust control for haul roads and general plant area:

i. Hours of operation of water trucks.
ii. Application schedule for chemical dust suppressant.

2. All records compiled in accordance with this permit must be maintained by Rhône-Poulenc as a permanent business record for at least five years following the date of the measurement, must be available at the plant site for inspection by the department and must be submitted to the department upon request (ARM 16.8.1109).

G. Daily Operational Reporting Information

Rhône-Poulenc shall keep data necessary to demonstrate compliance with the daily emission limits for every day. The data shall be kept a minimum of 5 years.

Rhône-Poulenc shall submit daily operation information for the period of November 1st through February 29th. The four month report shall be submitted to the department by April 15 of each year (ARM 16.8.1109).

1. The calculation of daily emissions shall be done using the following:

a. Emission rates determined from the most recent stack test for each point source multiplied by actual hours of operation, and

b. Fugitive emissions, with the exception of stockpile storage emissions, calculated using the emission factors in Section II.C. multiplied by the

actual daily material usages except for diesel usage which is to be calculated as a daily average based on monthly consumption.

2. The report submitted shall contain, at a minimum, the following information:

   a. A listing of all emission factors used.

   b. A listing of all variables used in the calculation of the emission factors identified with ** in Section II.C.

   c. The daily production numbers used to calculate the daily emissions.

   d. The total lbs/day of TSP emissions for each day during the period.

   e. The total lbs/day of PM-10 emissions for each day during the period.

   f. Verification that the total square feet of storage of material less than or equal to 4% silt content is less than the limit contained in Section II.B.3.

   g. Verification that the total square feet of storage of material greater than 4% silt content is less than the limit contained in Section II.B.4.

   h. Total square feet of storage material reclaimed or chemically sealed. Rhône-Poulenc shall also provide information on the type of pile treated and the material used to treat the pile.

3. The reports and data shall be made available to the department upon request (paper copy and computer file).

4. Data shall be kept a minimum of 5 years.

H. Annual Operational Reporting Information

Rhône-Poulenc shall submit annual operation information for the period of each calendar year. The report shall be submitted to the department by March 1 of each year (ARM 16.8.1109).

1. The calculation of annual emissions shall be done using the following:

   a. Emission rates, as determined from the most recent stack tests for each point source, multiplied by actual hours of operation, and

   b. Fugitive emissions calculated using the emission factors in Section II.C. multiplied by the actual annual material usages.

   c. Total square feet of storage chemically sealed or reclaimed, including the date the storage was chemically sealed or considered to be reclaimed.

   d. For those piles identified as less than or equal to 4 percent, use either the default of 4 percent silt content or specific data for the year,

for emission calculations. The specific data shall include the actual size of each pile and a new silt content annual value for each pile.

For those piles identified as greater than 4 percent, use either the default of 35.4 percent silt content or specific data for the year, for emission calculations. The specific data shall include the actual size of each pile and a new silt content annual value for each pile.

e. Square feet of storage piles shall be determined by Rhône-Poulenc by measurement at least once a year. The value to be used in the annual emission inventory will be a measurement which occurs between October 1 and November 1 of each year.

2. The report submitted shall contain at a minimum the following information:

   a. A listing of all emission factors used.

   b. A listing of all variables used in the calculation of the emission factors identified with ** in Section II.C.

   c. The annual production numbers used to calculate the annual emissions.

   d. The total tons/year of TSP emissions.

   e. The total tons/year of PM-10 emissions.

3. The reports and data shall be made available to the department upon request (paper copy and computer file).

4. Data shall be kept a minimum of 5 years.

5. This data may be used to meet the requirements of Section II.F. if all requested information is included.

I. Notification

Rhône-Poulenc shall provide the department with written notification of the following dates within the specified time periods (ARM 16.8.1109):

1. Commencement of construction of the Coke and Silica Handling System within 30 days after commencement of construction.

2. Anticipated start-up of the Coke and Silica Handling System between 30 and 60 days prior to anticipated start-up date.

3. Actual start-up date of the Coke and Silica Handling System within 15 days after the actual start-up date.

4. CEMS performance tests at least 30 days prior to the scheduled CEMS performance tests.

5. All compliance stack tests in accordance with the Montana Source Testing Protocol and Procedures Manual (ARM 16.8.709).

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 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 - Nothing in this permit shall be construed as relieving the permittee of the responsibility for complying with any applicable federal or Montana statute, rule or standard, except as specifically provided in ARM 16.8.1101, *et seq.* (ARM 16.8.1117).

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 therefor, a hearing before the Board of Environmental Review. 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. 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.

G. Construction Commencement - Construction must begin within three years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked.

H. Permit Fees - Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay by the permittee of an annual operation fee may be grounds for revocation of this permit, as required by that Section and rules adopted thereunder by the Board of Environmental Review.

ATTACHMENT 1
AMBIENT MONITORING PLAN
Rhône-Poulenc
Permit #1636-06

1. This ambient air monitoring plan is required by air quality permit #1636-06 which applies to the Rhône-Poulenc elemental phosphorus plant near Ramsay, Montana. This monitoring plan may be changed from time to time by the department, but all current requirements of this plan are also considered conditions of the permit.

2. Rhône-Poulenc shall collect vegetation samples for fluoride-in-forage analysis at nine monitoring sites in the vicinity of their plant. The exact locations of the monitoring sites must be approved by the department and meet all the requirements contained in the Montana Quality Assurance Manual including revisions, the EPA Quality Assurance Manual including revisions, Parts 53 and 58 of the Code of Federal Regulations, and ARM 16.8.813, or any other requirements specified by the department.

3. Rhône-Poulenc shall continue vegetation sampling through the construction phase and for a minimum of one year after completion of construction and commencement of operation. At that time the 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 vegetation sampling to track long-term impacts of emissions from the facility or require additional vegetation sampling or ambient air monitoring if any changes take place in regard to quality and/or quantity of emissions or the area of impact from the emissions.

4. Rhône-Poulenc shall collect vegetation samples for fluoride-in-forage analysis, following the requirements of ARM 16.8.813, at the following locations:

Site #	Landowner/ Lessee	Location	Description
1	Ueland	NW¼ Section 25 T3N R9W	Plot extending W and S from present Rhône-Poulenc monitoring station. Land is flat with native grasses and some sagebrush.
2	Ueland	NE¼ Section 36 T3N R9W	Plot extends just S of section line fence and E from gate, which is on an abandoned haul road. Grasses are as in #1 except those planted on the abandoned roadway.
3	Ueland	SE¼ Section 22 T3N R9W	Plot is approximately ½ mile from county road heading south from main German Gulch Road. Plot extends SW from Bonneville power lines toward facility. Land slopes SW and has native grasses with sagebrush.
6	Hilderman	SE¼ Section 15 T3N R9W	The plot, centered in pasture, is S of I-90 and SW of large blue shed. Plot extends SW from gate on property fence south of frontage road. Land is flat, sub-irrigated with native grasses.

Site #	Landowner/ Lessee	Location	Description
7	Tamietti	NE¼ Section 15 T3N R9W	The plot is centered in a hay meadow E of the Tamietti residence. Plot extends NW from SW corner of property fence line north of frontage road. In hay field, irrigated and native grasses, and the land is flat.
13	Ueland	NE¼ Section 36 T3N R9W	Plot is located E of Interstate 15 extending E from frontage road fence line. Sub-irrigated with native grasses and swamp grasses in semi-flat ground.
15	Peterson	SW¼ Section 35 T4N R10W	Plot is in alfalfa hay field across the road W from the Fairmont Hot Springs sewage lagoons. Plot extends SW from gate on property fence line. The land is flat with alfalfa.
16	Craddock	NW¼ Section 32 T4N R9W	Plot is in alfalfa hay field just E of Terry and Judy Archer's house. Plot extends NE from the SW corner of the hay field. It is irrigated flat land with alfalfa.
17	Erickson	SE¼ Section 21 T3N R9W	Plot is in alfalfa field approximately ½ mile N from county road leading to Erickson's house. Plot is in the middle of an alfalfa field extending E. It is irrigated flat land.

5. Any vegetation sampling or ambient air monitoring changes proposed by Rhône-Poulenc must be approved in writing by the department.

6. Rhône-Poulenc 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 ARM 16.8.813, or any other requirements specified by the department.

7. Rhône-Poulenc shall submit an annual data report by February 1 of each year. The annual 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 vegetation sampling site locations in relation to the plant, and the general area;

   b. A hard copy of the individual data points;

   c. The monthly means for fluoride-in-forage, per site;

   d. The grazing season average for fluoride-in-forage, per site;

   e. A pollution trend analysis;

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.

8. The department may audit, or may require Rhône-Poulenc to contract with an independent firm to audit, the vegetation sampling 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 vegetation sampling network and associated activities in order to improve precision, accuracy and data completeness.

ATTACHMENT 2

INSTRUCTIONS FOR COMPLETING EXCESS EMISSIONS
AND MONITORING SYSTEMS REPORTS (EER)

PART 1 — Complete as shown.

PART 2 — Complete as shown. Report total time the point source operated during the reporting period in hours. The determination of point source operating time includes time during unit start-up, shutdown, malfunctions, or whenever pollutants (of any magnitude) are generated, regardless of unit condition or operating load.

Normal calibrations and maintenance as prescribed by the CEMS manufacturer need not be listed in subpart i or counted as CEMS downtime.

Percent of time CEMS was available during point source operation is to be determined as:

$$1 - \frac{\text{(CEMS downtime in hours during point source operation)}}{\text{(total hours of point source operation during reporting period)}} \times 100$$

Excess emissions include all time periods when emissions as measured by the CEMS exceed any applicable emission standard for any applicable time period.

Percent of time in compliance is to be determined as:

$$1 - \frac{\text{(total hours of excess emissions during point source operation)}}{\text{(total hours of point source operation during reporting period)}} \times 100$$

PART 3 — Complete a separate sheet for each pollutant control device associated with a CEMS. Be specific when identifying control equipment operating parameters. For example: primary and secondary amps and spark rate for ESPs; pressure drop and effluent temperature for baghouses; and liquid flow rate and pH levels for scrubbers. For the initial EER, include a diagram or schematic for each piece of control equipment.

TABLE I — Use Table I as a guideline to report all excess emissions. Complete a separate sheet for each CEMS. Sequential numbering of each excess emission is recommended. For each excess emission, indicate: 1) time, duration and magnitude, 2) nature and cause, and 3) the action taken to correct the condition of excess emissions. Do not use computer reason codes for corrective actions or nature and cause, rather be specific in the explanation. If no excess emissions occur during the reporting period, it must be stated so.

TABLE II

Use Table II as a guideline to report all CEMS upsets or malfunctions. Complete a separate sheet for each CEMS. List the time, duration, nature and extent of problems, as well as the action taken to return the CEMS to proper operation. Do not use reason codes for nature, extent or corrective actions. Include normal calibrations and maintenance as prescribed by the CEMS manufacturer. Do not include zero and span checks.

TABLE III

Complete a separate sheet for each pollutant control device associated with a CEMS. Use Table III as a guideline to report operating status of control equipment during the excess emission. Follow the number sequence as recommended for excess emissions reporting. Report operating parameters consistent with Part 3, subpart f.

EXCESS EMISSIONS AND MONITORING SYSTEMS REPORT

PART 1

a. Emission Reporting Period _____

b. Report Date _____

c. Person Completing Report _____

d. Plant Name _____

e. Plant Location _____

f. Person Responsible for Review and Integrity of Report _____

g. Mailing Address for 1.f. _____
Street Address or P.O. Box

_____
City State Zip Code

h. Phone Number of 1.f. _____

i. Certification for Report Integrity, by person in 1.f.

THIS IS TO CERTIFY THAT THE INFORMATION PROVIDED IN THIS REPORT IS COMPLETE AND ACCURATE.

SIGNATURE _____

NAME _____

TITLE _____

DATE _____

j. Comments _____

_____

_____

_____

PART 2 - CEMS Information: Complete for each CEMS.

a. Point Source _____

b. CEMS Type (circle one)

Opacity SO_2 NOx O_2 CO CO_2 TRS

c. Manufacturer _____

d. Model No. _____ e. Serial No. _____

f. Automatic Calibration Value: Zero _____ Span _____

g. Date of Last CEMS Performance Test _____

h. Total Time Point Source Operated During Reporting Period _____

i. Percent of Time CEMS Was Available During Point Source Operation: _____

Show calculations _____

_____

j. Allowable Emission Rate _____

k. Percent of Time in Compliance _____

Show calculations _____

_____

l. CEMS Repairs or Replaced Components Which Affected or Altered Calibration Values

_____

_____

_____

_____

_____

_____

_____

_____

PART 3 - Pollution Control Equipment Operating Parameter Monitor. (Complete one sheet for each pollutant control device associated with a CEMS.)

a. Point source _____

b. Pollutant (circle one):

Opacity Particulate SO_2 NOx TRS

c. Type of Control Equipment _____

d. Control Equipment Description and Identification (Model # and Serial #)

_____

_____

_____

e. Control Equipment Operating Parameters (i.e., pressure drop [delta P], effluent temperature, scrubber water flow rate and pH levels, primary and secondary amps, spark rate) _____

_____

_____

_____

_____

f. Date of Control Equipment Performance Test _____

g. Control Equipment Operating Parameter During Performance Test _____

_____

_____

_____

_____

h. Type and Amount of Material Produced or Processed During the Reporting Period

_____

i. Type and Amount of Fuel Used During the Reporting Period _____

_____

TABLE I

EXCESS EMISSIONS

Date	Time From	To	Duration	Magnitude	Explanation/ Corrective Action

TABLE II

CONTINUOUS MONITORING SYSTEM OPERATION FAILURES

Date	Time From	To	Duration	Problem/ Corrective Action

TABLE III

CONTROL EQUIPMENT OPERATION DURING EXCESS EMISSIONS

Date	Time From	To	Duration	Operating Parameters	Corrective Action

ANALYSIS
Rhône-Poulenc Basic Chemicals Co.
Permit #1636-06

I. Introduction

A. Site location

Rhône-Poulenc's elemental phosphorus plant was originally constructed prior to 1968 and is located 7 miles west of Butte, near Ramsay, Montana in the SW¼, Section 23, Township 3 North, Range 9 West, Silver Bow County. The nearest PSD Class I area is the Anaconda Pintler Wilderness Area 23 miles west of Rhône-Poulenc's existing plant. Other nearby PSD Class II areas which may be of concern are the Deer Lodge National Forest, 3 miles to the southwest, and the Humbug Spires primitive area, 16 miles to the southwest. The Butte PM-10 non-attainment area is located 7 miles east of Rhône-Poulenc.

B. Source Description

Rhône-Poulenc currently operates an existing elemental phosphorus plant. Phosphate rock ore is delivered by rail car. The ore is then charged to one of two large 12-story nodulizing kilns. Kiln No. 1 is fired on natural gas and CO. Kiln No. 2 is fired on coal, natural gas, and CO. The nodules are cooled, crushed and sized, and stored in silos. From the silos, the nodules, along with coke and silica are fed into one of two electric furnaces. In the furnaces, phosphorus is vaporized then passed through Adams filters to remove dust. The phosphorus is then condensed and filtered. Used filter coke is run through a roaster and vaporized phosphorus is sent back through the condenser. After filtering, the phosphorus is stored under water and shipped out in tank cars.

C. Permit History

The elemental phosphorus plant was constructed prior to 1968 and has been operated as an existing source since that time. The first permit issued to the facility was **permit #1312**, issued to Stauffer Chemical Company for a slag granulation system on December 28, 1978.

The next permit was **permit #1329** issued on February 21, 1979 for a secondary scrubber for the slag granulation system and replaced permit #1312.

Permit #1636 was issued on February 5, 1982 to Stauffer Chemical Company for a coal unloading and handling system for the No. 2 Kiln. Permit #1636 was considered a major modification and was required to go through a Prevention of Significant Deterioration (PSD) review.

The first alteration to permit #1636 was given **permit #1636A** and was issued to Rhône-Poulenc on November 4, 1991. This permit expanded permit #1636 to cover all existing permitted sources and non-permitted sources and replaced the previously existing permits. This permit, also, covered the installation of controls on

the No. 1 and No. 2 kilns and the replacement of control equipment on the kiln feed/fugitive dust system.

All sources were required to be covered by a permit since a source apportionment study, conducted for the Butte PM-10 State Implementation Plan, identified Rhône-Poulenc's having an 11% contribution to the PM-10 levels in the Butte PM-10 nonattainment area based on the existing allowable emission limitations at the time. The department, as part of its control strategy development, determined it was necessary to establish reduced allowable emission limitations for all existing sources at Rhône-Poulenc. This permit established new allowable emission limitations for the plant.

The second modification to the permit was given **permit #1636-02** and was issued on October 29, 1992. The permit was modified for the following two reasons:

1. The rebuild of the No. 1 Furnace. Normal operations of the furnaces require Rhône-Poulenc to rebuild the furnaces from the ground up after a number of years. The last time the No. 1 Furnace was rebuilt was 26 years ago. The rebuild of the furnace involved removing the carbon block liner, digging out the contents of the furnace, and the complete demolition and rebuild of the furnace.

2. The addition of an experimental program to allow Rhône-Poulenc to conduct a series of experiments on the #2 Kiln Scrubbing System to try to determine a way of meeting the 20% opacity limitation by December 10, 1993. The experiments involved changing the fuel ratio to the #2 Kiln and the use of the emergency flare to burn the extra CO gas generated by the process. During normal operations, the kilns are fired with CO gas and natural gas. During the experiments, the amount of CO gas allowed to enter the #2 Kiln will be monitored and controlled.

The third alteration was given **permit #1636-03** and was issued on September 27, 1993. The permit alteration allowed Rhône-Poulenc to construct, install, and operate new Calvert Collision Scrubbers on the No. 1 and No. 2 Kilns. These scrubbers replaced the existing Fluid Ionics Hydroprecipitals and increased the scrubbing efficiency of the kiln off gases. The new scrubbers have a control efficiency of greater than 99.5% for particulate, approximately 99.88% for hydrogen fluoride, and approximately 79% for SO_2. The purpose of the change was to comply with the December 10, 1993 change in opacity standard from 30% to 20%.

Permit #1636-04 was issued October 31, 1995 and incorporated two changes. It included the proposed construction of a new Coke and Silica Handling System and also contained the compliance plan as required by Section II.C. of permit #1636-03.

The proposed Coke and Silica Handling System includes the addition of the following equipment:

1. T-100 Loadout Hopper
2. C-100 Loadout Conveyor (Covered)

3. B-120 Bucket Elevator (Enclosed design)
4. S-130 Coke Screen (Enclosed design)
5. T-140 Coke Fines Bin
6. D-200 Baghouse (22,200 SCFM) and associated hoods and ducting
7. H-200 Pugmill (Enclosed design)
8. C-150 Silo Transfer Conveyor (24" flat belt, 253' long - enclosed)

The new system will allow Rhône-Poulenc to receive dry coke. Currently the facility receives coke with a higher moisture content which is dried in the coke dryers prior to being used in the facility. Rhône-Poulenc plans to demonstrate the reliability of the proposed new system and then work on removing the existing silica and wet coke handling systems and the coke dryers. It is estimated that the removal of the coke dryers could occur within the next 6 to 12 months. This permit only considers the increase in emissions from the new system and does not consider any possible decreases in fugitive emissions from outdoor handling of coke and silica or coke dryer emissions once the new system is fully operational. Rhône-Poulenc is allowed by this permit to receive and handle both dry and wet coke.

This alteration changed the method of estimating actual base-year emissions from various sources. This resulted in a decrease in the plant-wide allowable particulate emissions from the facility.

This alteration also incorporated a required compliance plan for fugitive emissions. The compliance plan included emission factors to identify how emissions shall be calculated and daily reporting requirements. Rhône-Poulenc shall provide a spreadsheet using the emission factors (exactly as identified) and production values to calculate the emissions from the fugitive sources for demonstrating compliance with the daily and yearly limitations.

Additional details of this alteration are discussed in the analysis of permit #1636-04.

Permit alteration **#1636-05** was issued on April 4, 1996 to allow the installation of the P_4 Clermont Safety Ventilation System and the Roaster Fines Transportation system.

The P_4 Clermont Safety Ventilation system consists of a fan and discharge stack connected to the existing duct upstream of the P_4 Clermont scrubber. This allows Rhône-Poulenc to isolate the scrubber and existing fan for maintenance, while the furnace is shut down, and still provide ventilation to the furnace building and condenser area. There is not expected to be an increase in emissions from the use of this system.

The Roaster Fines Transportation system will transfer nodule fines from the existing silos to the roaster. This system will be needed while the kilns are shut down. The system will consist of a new conveyor belt to transfer material from the existing #5 belt to the existing #1 belt which will then transfer the material to the kiln feed building.

Potential emissions from this additional belt is estimated to be 11.2 tons/year of total particulate and 5.6 tons/year of PM-10. However, this system is needed only when the kilns are shut down and there will be no increase in the allowable daily or yearly particulate emissions from the facility.

D. Current Permit Alteration

The current permit alteration will change the emission limits for the coke dryers and the silo scrubber. Limits for these sources were originally established as a result of the Butte PM-10 SIP. The department has determined that the limits for the scrubbers controlling the #1 and #2 coke dryers, which also control emissions from nodule sizing, crushing and handling activities, were established incorrectly. The Butte SIP outlines a control strategy which sets Rhône-Poulenc's allowable emissions at 120% of the actual levels during the SIP base year of 1987-88. The previous calculation of the actual base year emissions for the scrubbers controlling the coke dryers/nodule crushing and the scrubber controlling the silos was based on a source test performed by Rhône-Poulenc personnel in 1979. The department has determined that the use of data from these stack tests for establishing base-year emissions was not appropriate for the following reasons:

- The stack testing in 1979 was done for Rhône-Poulenc's internal use in plant operations. There is no record of source production levels or control equipment inlet loading levels at the time of the tests. Because outlet particulate loading is dependant on inlet loading, a low production rate at the time of the test would result in an abnormally low mass emission rate. Also, because the tests were not compliance tests, QA/QC procedures and documentation from the 1979 tests were essentially non-existent;

- Emission rate calculations for the scrubbers during the 1979 testing was based on scrubber outlet particulate concentration and inlet air flow rate rather than outlet air flow rate. The inlet flow rate has been shown to be different than the outlet flow rate which affects the calculation of the mass flow rate from the scrubber;

- The stack test for the #2 coke dryer was used to set emissions limits for the #1 coke dryer. The #1 coke dryer/nodule crushing control system controls emissions from different sources than the #2 coke dryer/nodule crushing control system. Emission limits for these two systems should have been set separately;

- The PM-10 emission limits were set assuming that 50% of the particulate was PM-10. This information was based on emission factor data from the AIRS Facility Subsystem Source Classification Codes and Emission Factor Listing for Criteria Pollutants, EPA/450/4-90-003, March 1990. This information is based on uncontrolled emissions. Emissions from the scrubber outlet would have a much higher concentration of PM-10. The department now assumes that the PM-10 fraction is approximately 85% of the total particulate loading out of the scrubbers;

Because the calculations of base year emissions used inappropriate data, the limits established for the #1 and #2 coke dryer scrubbers and the silo scrubber were set at abnormally low levels. Rhône-Poulenc has demonstrated that these emission limits are not achievable even after completely rebuilding the scrubber internals.

This permit alteration will set limits for these sources based on source testing performed in 1992. The department feels that, because of more stringent QA/QC procedures and documentation of production levels as well as inlet particulate loadings to the control device, the testing performed in 1992 is a better source of data to use in estimating base year actual emissions. The calculations in Section IV.B of this analysis outline the method used in calculating the new emission limits for the coke dryers and the silo scrubber.

Rhône-Poulenc has also requested that the facility-wide particulate emission limit be revised. The facility-wide limits were also established during the development of the Butte SIP and were to be set at 120% of the actual emissions during the base year. Rhône-Poulenc has demonstrated to the department's satisfaction that two sources of emissions which were present during the base year were not accounted for by the SIP. The first source is the handling of kiln nodules which are sometimes stockpiled because of process fluctuations. The particulate emissions from this source have been estimated at 1.0 ton during the base year. The second source is the pond tailings storage. This source was not thought to be present during the base year; however, Rhône-Poulenc has shown through facility drawings and aerial photographs that the source was indeed in operation during the base year. Base year emissions from this source have been estimated at 50.7 tons.

The overall increase in the facility-wide allowable emissions authorized by this permitting action are: 789.7 lbs/day of particulate ; 607.9 lbs/day of PM-10 ; 147.8 tons/year of particulate and 113.0 tons/year of PM-10. Rhône-Poulenc has not been able to meet the artificially low emission limits during normal plant operation. Actual emissions from the facility are not expected to increase because of this permitting action. Permit #1636-06 will replace permit #1636-05.

E. Additional Information

Additional information, such as applicable rules and regulation, BACT determinations, air quality impacts, and environmental assessments are included in the analysis associated with each change to the permit identified above.

II. Applicable Rules and Regulations

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

A. ARM 16.8, Subchapter 7, General Provisions, including but not limited to:

1. ARM 16.8.704, Testing Requirements. Any person or persons responsible for the emissions of any air contaminant into the outdoor atmosphere shall, upon written request of the department, provide the facilities and necessary equipment, including instruments and sensing devices, and shall conduct

tests, emission or ambient, for such periods of time as may be necessary using methods approved by the department.

2. ARM 16.8.705, Malfunctions. (2) The Permitting and Compliance Division of the department must be notified promptly by phone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than 4 hours.

3. ARM 16.8.707, Circumvention. (1) No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant which would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner that a public nuisance is created.

4. ARM 16.8.709, Source Testing Protocol. Rhône-Poulenc shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual.

B. 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 Rhône-Poulenc 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 and any other monitoring guidelines issued by the department. Specific ambient monitoring requirements are contained in Attachment 1 of the permit.

2. 16.8.821 Ambient Standards for PM-10. Rhône-Poulenc must maintain compliance with the applicable ambient air quality standards. The projects authorized by this permit will not increase allowable emissions from the plant. Therefore, the department believes that it will not cause or contribute to a violation of the ambient standards.

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

ARM 16.8.945 Definitions. Rhône-Poulenc's elemental phosphorus plant is defined as a "major stationary source" because it has the potential to emit more than 250 tons of SO_2.

The emission limits on the coke dryers and the silo scrubber, as well as the facility-wide emission limits, were incorrectly established at artificially low levels. The limits should have been established at the levels proposed by this permitting action during the development of the Butte PM-10 SIP. Because the limits were incorrectly established, the source is not required to undergo the additional burden of PSD review to rectify the problem.

D. 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, Exclusions. This section requires a source to obtain an air quality permit if they construct, alter, or use an air contaminant source.

2. ARM 16.8.1105 New of Altered Sources and Stacks - Permit Application Requirements. This section requires that a permit application be submitted prior to installation, alteration or use of a source. Rhône-Poulenc has submitted the required permit application.

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

4. ARM 16.8.1109 Conditions for Issuance of Permit. This section requires that Rhône-Poulenc demonstrate compliance with applicable rules and standards before a permit can be issued. Rhône-Poulenc 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.

8. ARM 16.8.1119 General Procedures for Air Quality Preconstruction Permitting. This air quality preconstruction permit contains requirements and conditions applicable to both construction and subsequent use of the permitted equipment.

E. 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 emission sources and Reasonably Available Control Technology (RACT) for existing fugitive sources located in a nonattainment area.

2. ARM 16.8.1402 Particulate Matter, Fuel Burning Equipment. This section requires that no person shall cause, allow, or permit to be discharged into the

atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this section.

3. ARM 16.8.1403 Particulate Matter, Industrial Process. This section requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this section.

4. ARM 16.8.1404 Visible Air Contaminants. This section requires an opacity limitation of 20% from all sources installed since November 23, 1968.

5. ARM 16.8.1423 Standard of Performance for New Stationary Sources. This section incorporates by reference 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). The modifications authorized by this permitting action are not considered modifications warranting the imposition of NSPS requirements.

F. ARM 16.8.1801, *et seq.* (Subchapter 18), Preconstruction Permit Requirements for Major Stationary Sources or Major Modifications Located Within Attainment or Unclassified Areas, including but not limited to:

ARM 16.8.1803 When Air Quality Preconstruction Permit Required. This section requires that any major stationary source or major modification must meet the preconstruction permitting requirements of this subchapter. This permitting action is not considered a major modification because the purpose is to rectify emission limits which were established artificially low during the development of the Butte PM-10 SIP. Therefore, the requirements of this subchapter do not apply.

G. ARM 16.8.1901, *et seq.* (Subchapter 19), Air Quality Permit Application, Operation and Open Burning Fees, including but not limited to:

1. ARM 16.8.1903 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the department; and the air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

   The annual assessment and collection of the air quality operation fee, as described above, shall take place on a calendar year basis. The department may insert into any final permit issued after the effective date of these rules such conditions as may be necessary to require the payment of an air quality operation fee on a calendar year basis, including provisions which prorate the required fee amount.

2. ARM 16.8.1905 Air Quality Permit Application Fees. This section requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is

incomplete until the proper application fee is paid to the department. Rhône-Poulenc has submitted the appropriate permit application fee.

III. Best Available Control Technology (BACT) Analysis

A BACT analysis is not required for this permitting action because the sole purpose is to rectify emission limits which were established artificially low during the development of the Butte SIP.

IV. Emission Inventory

A. Facility-wide emissions

A more complete description of the calculations of the facility-wide emissions is included in the analysis for Permit #1636-04. Detailed calculations for the estimation of emissions from individual permit alterations are included in the analysis for that alteration.

1. Total Particulate[4]

	SOURCE	EXISTING ALLOWABLE EMISSIONS (TONS/YR)	PROPOSED ALLOWABLE EMISSIONS (TONS/YR)
A.	No. 1 Nodule Cooler	10.3	10.3
B.	**No. 1 Coke Dryer**	**9.1**	**65.0**
C.	No. 2 Nodule Cooler	11.4	11.4
D.	**No. 2 Coke Dryer**	**9.1**	**37.1**
E.	No. 1 Kiln	18.7	18.7
F.	No. 2 Kiln	11.5	11.5
G.	No. 1 and No. 2 Furnaces	17.6	17.6
H.	P_4 Handling	1.3	1.3
I.	Kiln Feed System	2.0	2.0
J.	**Silos**	**4.5**	**16.3**
K.	Coal Storage - Outdoor	7.5	7.5
L.	Coke Storage - Outdoor	6.1	6.1
M.	Ore Storage - Outdoor	10.7	10.7
N.	Silica Storage - Outdoor	0.2	0.2
O.	Coal Unloading	0.3	0.3
P.	Coke Unloading	1.2	1.2
Q.	Ore Unloading	7.7	7.7
R.	Silica Unloading	0.9	0.9
S.	Coal Handling	0.1	0.1
T.	Coke Handling	0.4	0.4
U.	Ore Handling	2.5	2.5
V.	Silica Handling	3.6	3.6
W.	Roaster Residue Hand(stockpile)	0.1	0.1
X.	Slag Handling(to stockpile)	2.0	2.0
Y.	Ferrophos Handling(to stockpile)	0.1	0.1
W.	Diesel for backup generator	0.2	0.2
X.	No. 3 Boiler	0.9	0.9

[4] Differences between totaling columns and totals identified below are due to rounding errors.

Y.	Roaster	0.1	0.1
Z.	CO Flare	0.0	0.0
AA.	Roaster Residue Storage	0.16	0.2
BB.	Coke Dust Storage	0.9	0.9
CC.	Slag Storage	0.3	0.3
DD.	Kiln Feed Clean Up Storage	10.9	10.9
EE.	Ferrophos Storage	0.01	0.01
FF.	Kiln Nodules Storage	0.1	0.1
GG.	**Pond Tailing Storage**	**0.0**	**50.7**
HH.	Fugitive Dust (roads)	52.1	52.1
II.	**kiln nodule handling**	**N/A**	**1.0**
Total Plant-wide (tons/year)		**205.4**	**352.0**

The following are sources which were not in existence at the time of the Butte SIP and do not increase the plant-wide emission limits

		(tons/.year)
JJ.	Coke and Silica Handling System	3.8
kk.	Roaster Fines Transportation System	11.2

2. Non-particulate (tons/year)

SOURCE		FLUORIDE	SO_2	VOC	NOx	CO
A.	No. 1 Coke Dryer	14	40	0	0	0
B.	No. 2 Coke Dryer	1	0	0	0	0
C.	No. 1 Kiln	1	398	0	0	0
D.	No. 2 Kiln	0	489	0	0	0
E.	No. 1 and No. 2 Furnaces	0	442	0	0	0
F.	No. 3 Boiler	0	0	1	33	8
Plant-wide		**16**	**1389**	**1**	**33**	**8**

B. Current Permit Alteration

This section outlines the method used to develop emission limits for the coke dryers and the silo scrubber. The following steps were used:

1. Calculate total particulate and PM-10 emission factor from 1992 source testing and production rates during the tests.

2. Determine estimated actual emissions from each source during the days on which the chemical mass balance (CMB) was performed for the Butte SIP. The CMB studies identified Rhône-Poulenc as a contributor to the nonattainment area.

3. Calculate allowable emissions from the individual sources. As detailed in the Butte SIP, emission limits were to be set at 120% of base year actuals. The 1.1 multiplier is used to compensate for additional control equipment installed on the furnaces prior to estimating base year actuals.

4. Calculate the net change in daily and annual limits and the new plant-wide allowable emissions based on changes to individual source allowables and inclusion of the sources previously neglected (nodule handling and pond tailings storage).

#1 Coke Dryer

Emission Factor Calculation

Test Date	Emission Rates (lbs/hr)	Emission Rates (lbs/day)	Production Rates During Test[5] (tons/day) Coke	Nodules	Total	PM Emission Factor (lbs/ton)	PM-10[6] Emission Factor (lbs/ton)
8/13/92	15.4	369.6	65.5	680.5	746	0.4954	0.4211
8/13/92	24.1	578.4	65.5	680.5	746	0.7753	0.659
8/13/92	22.3	535.2	65.5	680.5	746	0.7174	0.6098
Average	20.6	494.4	65.5	680.5	746	**0.6627**	**0.5633**

Actual Emissions during "CMB" days

Date[7]	Production Rates[1] (tons/day) Coke	Nodules	Total	PM Emission Factor (lbs/ton)	Actual PM Emissions (lbs/day)	PM-10 Emission Factor (lbs/ton)	Actual PM-10 Emissions (lbs/day)
11/27/87	33.6	377.0	410.6	0.6627	272.1	0.5633	231.3
12/28/87	35.5	407.5	443.0	0.6627	293.6	0.5633	249.5
1/4/88	47.1	348.0	395.1	0.6627	261.8	0.5633	222.6
1/7/88	34.3	348.0	382.3	0.6627	253.4	0.5633	215.3
1/19/88	49.4	348.0	397.4	0.6627	263.4	0.5633	223.9
1/28/88	66.7	348.0	414.7	0.6627	274.8	0.5633	233.6
Average					**269.8**		**229.4**

[5]From Rhône-Poulenc monthly production records. Daily throughput assumed to be equally divided between #1 and #2 dryer.

[6]Assumed to be 85% of PM

[7]From Butte CMB study.

Calculation of Allowable Emissions

	Actual "CMB" Day Emissions (lbs/day)	Increase by 1.1[8]	Increase by 1.2[9]	Allowable Emissions (lbs/day)	(lbs/hour)	(tons/yr)
PM	269.8	296.8	356.1	**356.1**	**14.8**	**65.0**
PM_{10}	229.4	252.3	302.8	**302.8**	**12.6**	**55.3**

#2 Coke Dryer

Calculate Emission Factor From 1992 Stack Test

Test Date	Emission Rates (lbs/hr)	(lbs/day)	Production Rates[1] (tons/day) Coke	Nodules	Total	PM Emission Factor (lbs/ton)	PM-10[2] Emission Factor (lbs/ton)
8/3/92	7.8	187.2	65.5	626	691.5	0.2707	0.2301
8/4/92	11.6	278.4	65.5	402	467.5	0.5955	0.5062
8/5/92	9.5	228	65.5	778.5	844	0.2701	0.2296
Average	9.6333	231.2	65.5	602.17	667.67	**0.3788**	**0.322**

Calculate Estimated Actual Emissions during "CMB" days

Date[3]	Production Rates (tons/day) Coke	Nodules	Total	PM Emission Factor (lbs/ton)	Actual PM Emissions (lbs/day)	PM-10 Emission Factor (lbs/ton)	Actual PM-10 Emissions (lbs/day)
11/27/87	33.6	377.0	410.6	0.3788	155.5	0.3220	132.2
12/28/87	35.5	407.5	443.0	0.3788	167.8	0.3220	142.6
1/4/88	47.1	348.0	395.1	0.3788	149.7	0.3220	127.2
1/7/88	34.3	348.0	382.3	0.3788	144.8	0.3220	123.1
1/19/88	49.4	348.0	397.4	0.3788	150.5	0.3220	128.0
1/28/88	66.7	348.0	414.7	0.3788	157.1	0.3220	133.5
Average					**154.2**		**131.1**

Calculate Allowable Emissions In Accordance With Butte SIP

	Actual "CMB" Emissions (lbs/day)	Increase by 1.1[4]	Increase by 1.2[5]	Allowable Emissions (lbs/day)	(lbs/hour)	(tons/yr)
PM	154.2	169.6	203.5	**203.5**	**8.5**	**37.1**
PM_{10}	131.1	144.2	173.1	**173.1**	**7.2**	**31.6**

[8]Accounts for additional controls installed on kilns.

[9]In accordance with Butte PM-10 SIP, allowable emissions from Rhône-Poulenc shall be limited to 120% of the actual emissions during the base year.

Silo Scrubber

Emission Factor Calculation

Test Date	Emission Rates (lbs/hr)	Emission Rates (lbs/day)	Production Rates[1] (tons/day) Coke	Silica	Nodules	Total	PM Emission Factor (lbs/ton)	PM-10[2] Emission Factor (lbs/ton)
8/26/92	1.83	43.92	131	209	296	636	0.0691	0.0587
8/26/92	2.21	53.04	131	209	296	636	0.0834	0.0709
8/27/92	3.37	80.88	131	209	843	1183	0.0684	0.0581
Average	2.47	59.28	131	209	478.33	818	**0.0736**	**0.0626**

Actual Emissions during "CMB" days

Date[3]	Production Rates (tons/day) Coke	Silica	Nodules	Total	PM Emission Factor (lbs/ton)	Actual PM Emissions (lbs/day)	PM-10 Emission Factor (lbs/ton)	Actual PM-10 Emissions (lbs/day)
11/27/87	67.3	133.0	754.0	954.3	0.0736	70.2	0.0626	59.7
12/28/87	71.1	77.0	815.0	963.1	0.0736	70.9	0.0626	60.3
1/4/88	94.2	99.3	696.0	889.5	0.0736	65.5	0.0626	55.7
1/7/88	68.7	73.2	696.0	837.9	0.0736	61.7	0.0626	52.5
1/19/88	98.9	99.7	696.0	894.6	0.0736	65.8	0.0626	56.0
1/28/88	133.5	139.0	696.0	968.5	0.0736	71.3	0.0626	60.6
Average						**67.6**		**57.5**

Calculation of Allowable Emissions

	Actual "CMB" Emissions (lbs/day)	Increase by 1.1[4]	Increase by 1.2[5]	**Allowable Emissions** (lbs/day)	(lbs/hour)	(tons/yr)
PM	67.6	74.4	89.2	**89.2**	**3.7**	**16.3**
PM_{10}	57.5	63.3	75.9	**75.9**	**3.2**	**13.9**

Nodule Handling

Nodules Produced in Baseline Year 285,685 tons
Nodules transferred to/from stockpile 202,836 tons
{assumed from production records to be 71% of total production}

Particulate Matter
Emission Factor 0.01 lbs/ton {Fire SCC# 30302408}
Base Year PM = 0.01 lbs/ton * 202836 tons * 0.0005 tons/lb = 1.0 tons/year

In accordance with the Butte PM-10 SIP, allowable emissions are determined by multiplying baseline year emissions by 1.1 and then by 1.2
Allowable PM = 1.0 tons/year * 1.1 * 1.2 = 1.3 tons/year

PM-10
Emission Factor 0.005 lbs/ton {Assumed to be 50% of PM}
Base Year PM-10 = 0.01 lbs/ton * 202836 tons * 0.0005 tons/lb = 0.5 tons/year

In accordance with the Butte PM-10 SIP, allowable emissions are determined by multiplying baseline year emissions by 1.1 and then by 1.2

Allowable PM-10 = 0.5 tons/year * 1.1 * 1.2 = 0.7 tons/year

Pond Tailings Storage

Baseline year area = 17.77 acres

Particulate Matter
E (emission factor) = 1.7(s/1.5)*((365-p)/235)*f/15 {EPA-450/3-88-008, Sept. 1988}
where
s (silt content) = 16 %
p (# of days with > 0.01" precip.) = 120 days
f (% of time wind speed > 12 mph) = 18.8 %

Emission Factor = 23.7 lbs/day/acre
Control Efficiency= 50% {Assume 50 % of area was wetted during base year}
Base Year PM = 17.77 acres * 23.7 lbs/day/acre * (1-0.5 eff) * 365 days/yr * 0.0005 tons/lb =
= 38.4 tons/year

Allowable PM = 38.4 tons/year * 1.1 * 1.2 = 50.7 tons/year

PM-10
Emission Factor = 11.8 lbs/day/acre {Assumed to be 50% of PM}
Control Efficiency= 50% {Assume 50 % of area was wetted during base year}
Base Year PM-10 = 17.77 acres * 11.8 lbs/day/acre * (1-.5 eff) * 365 days/yr * 0.0005 ton/lb
= 19.2 tons/year
Allowable PM-10 = 19.2 tons/year * 1.1 * 1.2 = 25.4 tons/year

Net Change in Daily and Annual Facility-Wide Emission Limits

Source	Pollutant	Existing Allowable		Proposed Allowable		Net Increase	
		lbs/day	tons/yr	lbs/day	tons/yr	lbs/day	tons/yr
#1 Coke Dryer	PM	57.6	9.1	356.1	65.0	298.5	55.9
	PM-10	28.8	4.7	302.8	55.3	274.0	50.6
#2 Coke Dryer	PM	57.6	9.1	203.5	37.2	145.9	28.1
	PM-10	28.8	4.7	173.1	31.6	144.3	26.9
Silo Scrubber	PM	28.8	4.5	89.2	16.3	60.4	11.8
	PM-10	28.8	4.5	75.9	13.9	47.1	9.4
Nodule Handling	PM	NA	NA	7.1	1.3	7.1	1.3
	PM-10	NA	NA	3.6	0.7	3.6	0.7

Pond Tailings Storage	PM	NA	NA	11.6	50.7	277.8	50.7
	PM-10	NA	NA	5.8	25.4	138.9	25.4
Facility-Wide	PM					789.7	147.8
	PM-10					607.9	113.0

New Facility-Wide Emission limits

Pollutant	Existing Facility-Wide Allowable (lbs/day)	(tons/yr)	Proposed Increase (lbs/day)	(tons/yr)	**New Facility-Wide Allowable (lbs/day)**	**(tons/yr)**
PM	1471.93	205.47	789.7	147.8	**2260.2**	**353.3**
PM-10	983.97	129.11	607.9	113.0	**1593.9**	**242.0**

V. Air Quality Impacts

This permitting action will increase the allowable particulate emissions from various sources as well as from the entire facility. The change however, was facilitated because the department has determined that the emissions limits for the #1 and #2 coke dryers and the silo scrubber were incorrectly established during the establishment of the Butte PM-10 SIP. Rhône-Poulenc has not been able to meet these abnormally low emission limits during normal operation. This permitting action will not increase actual emissions from the facility.

The control strategy for the Butte SIP has determined that the local air quality can be maintained within the ambient standards by limiting the emissions from Rhône-Poulenc to 120 percent of the actual base year emissions. The department feels that this permitting action more correctly estimates the base year emissions from the facility. Therefore, the department does not feel that the proposed changes will cause or contribute to any additional violations of the ambient air quality standards.

VI. Existing Air Quality

The department has previously monitored TSP in the Ramsay area and not found violations. Rhône-Poulenc is currently monitoring fluoride-in-forage through vegetation sampling. This sampling will continue.

Rhône-Poulenc is located outside of the Butte PM-10 nonattainment area and has been identified as contributing to the PM-10 problem. The department has used EPA-approved CMB models and analysis to demonstrate that control strategies at Rhône-Poulenc and other sources will bring the area into compliance with the ambient PM-10 standards. Complete results are contained in the Butte PM-10 SIP.

VII. Taking or Damaging Implication Analysis

As required by 2-10-101 through 105, MCA, the department has conducted a private property taking and damaging assessment and has determined there are no taking or damaging implications. The analysis was completed October 11, 1995.

VIII. Environmental Assessment

The Montana Environmental Policy Act (MEPA) requires completion of an Environmental Assessment (EA) on any permitting action by the State of Montana. The EA completed by the department is attached.

Department of Environmental Quality
Permitting and Compliance Division
1520 E. Sixth Ave, P.O. Box 200901
Helena, Montana 59620
(406) 444-3454 FAX (406) 444-5275

FINAL ENVIRONMENTAL ASSESSMENT

ISSUED TO: Rhône-Poulenc
P.O. Box 3146
Butte, MT 59702

PERMIT NUMBER: 1636-06

PRELIMINARY DETERMINATION ON PERMIT ISSUED: 7/19/96
DEPARTMENT'S DECISION ON PERMIT ISSUED: 8/6/96

MONTANA ENVIRONMENTAL POLICY ACT (MEPA) COMPLIANCE: An environmental assessment required by the Montana Environmental Policy Act, was completed for this project as follows:

LEGAL DESCRIPTION OF SITE: SW¼, Section 23, Township 3 North, Range 9 West, Silver Bow County

DESCRIPTION OF PROJECT: Rhône-Poulenc proposes to alter their permit to increase the emission limits for the #1 and #2 coke dryers and the silo scrubber. The department feels that these limits were incorrectly established during the development of the Butte PM-10 SIP. The recalculation of these limits will increase the facility-wide emission limits. The permit also includes the base year emissions from the kiln nodule handling and the pond tailings storage, two sources which were unintentionally omitted during the development of the Butte SIP. This permitting action increases the allowable emissions from the facility because Rhône-Poulenc has not been able to comply with the abnormally low limits during normal operations and actual emissions are not expected to change.

BENEFITS AND PURPOSE OF PROPOSAL: This proposal will allow Rhône-Poulenc to operate the Silver Bow facility in compliance with their air quality permit without the installation of additional control equipment.

DESCRIPTION AND ANALYSIS OF REASONABLE ALTERNATIVES WHENEVER ALTERNATIVES ARE REASONABLY AVAILABLE AND PRUDENT TO CONSIDER: No reasonable alternatives are 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 complete permit analysis are contained in Air Quality Permit #1636-06.

DESCRIPTION AND ANALYSIS OF REGULATORY IMPACTS ON PRIVATE PROPERTY RIGHTS: The department has considered alternatives to the conditions imposed in this permit as part of the permit development. The department has determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and to demonstrate compliance with those requirements and do not unduly restrict private property rights.

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						

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			

Comments on Potential Impacts: None.

RECOMMENDATION: An EIS is not 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 emission limits being modified by this permitting action were established abnormally low because of the incorrect calculation of base-year actual emissions from the facility. The analysis performed during the development of the Butte SIP indicated that these new emission limits (based on the best estimation of base-year actual emissions) will be sufficient to bring the Butte area into compliance with the ambient air quality standards.

OTHER GROUPS OR AGENCIES CONTACTED OR WHICH MAY HAVE OVERLAPPING JURISDICTION: None.

INDIVIDUALS OR GROUPS CONTRIBUTING TO THIS EA: Department of Environmental Quality, Permitting and Compliance Division.

EA PREPARED BY: Jeff Briggs

DATE: June 28, 1996

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	88%
3)	Support Vehicles	Watering & Chemical Stabilization	88%
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

[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	26.0	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	15[illegible].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[4]	66.2[4]
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 295.6 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	35%
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 31.8% 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
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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			