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. <u>Emission Monitoring and Reporting</u>

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	Time To	Time Duration	Magnitude	Explanation/ Corrective Action

TABLE II

CONTINUOUS MONITORING SYSTEM OPERATION FAILURES

Date	Time From	Time To	Time Duration	Problem/ Corrective Action

TABLE III

CONTROL EQUIPMENT OPERATION DURING EXCESS EMISSIONS

Date	Time From	Time To	Time 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 <u>inlet</u> air flow rate rather than <u>outlet</u> 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 <u>AIRS Facility Subsystem Source Classification Codes and Emission Factor Listing for Criteria Pollutants</u>, 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)	Existing Facility-Wide Allowable (tons/yr)	Proposed Increase (lbs/day)	Proposed Increase (tons/yr)	**New Facility-Wide Allowable (lbs/day)**	**New Facility-Wide Allowable (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