STATE OF MONTANA AIR QUALITY CONTROL IMPLEMENTATION PLAN	Subject: Lewis and Clark Co. Air Pollution Control Program

ATTACHMENT #7

Baghouse Inspection and Maintenance Program

Prepared by
ASARCO, Inc.

January 1996

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STATE OF MONTANA AIR QUALITY CONTROL IMPLEMENTATION PLAN	Subject: Lewis and Clark Co. Air Pollution Control Program

ASARCO, INCORPORATED

EAST HELENA, MONTANA PLANT

BAGHOUSE

INSPECTION & MAINTENANCE

PROGRAM

JANUARY 1996

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I. INTRODUCTION

On August 4, 1995, the Montana Board of Review approved the Department of Environmental Quality (DEQ) Air Quality Division (AQD) State Implementation Plan (SIP) for Lead in the East Helena Area. The control strategy described in the East Helena Lead SIP has been designed to reduce lead emissions from Asarco's East Helena plant and from areas in and around the city of East Helena. A component of the control strategy involves a baghouse inspection and maintenance program to be developed as Attachment #7 in the lead SIP, as required under Section 11 (C).

This program meets all of the requirements of Section II (C) of the SIP, signed August 4, 1995. These requirements include:

1. Procedures for handling bag removal and disposal;
2. Procedures for documenting broken bags by location in order to identify installation or equipment problems and to determine the type of failure (i.e., abrasion or chemical);
3. Requirements for investigating, addressing, and correcting problems in baghouses after the activation of a bag break detector or, for those stacks equipped with COMS, a substantial increase of opacity above normal baseline measurements; and
4. Requirements for inspection and maintenance of the following on a routine basis:
   - (a) Damaged bags;
   - (b) Air leaks;
   - (c) Caking and blinding of bags
   - (d) Proper bag cleaner functioning and cycling;
   - (e) Bag break detectors
   - (f) All moving parts for loose parts and unusual wear; and
   - (g) Fans for wear, material buildup, and corrosion.

Asarco has had a baghouse inspection and maintenance program in place for many years. This inspection and maintenance program has ensured that the numerous baghouses are operating at optimal levels.

As part of the control strategy described above, Asarco will upgrade its existing baghouse inspection and maintenance program through better documentation. This written program has been prepared to address baghouse inspection and maintenance. The program will additionally delineate the necessary procedures, frequencies, responsibilities, and record keeping.

II. BAGHOUSE TYPE and DESCRIPTION

ASARCO currently operates numerous baghouse units throughout the East Helena facility. These baghouses provide ventilation to various processes and material handling operations. There are two distinct baghouse styles used in East Helena: 1) the Pulse-Jet System and 2) the Mechanical Shaker System. The following narrative discusses the characterization of the two baghouse styles.

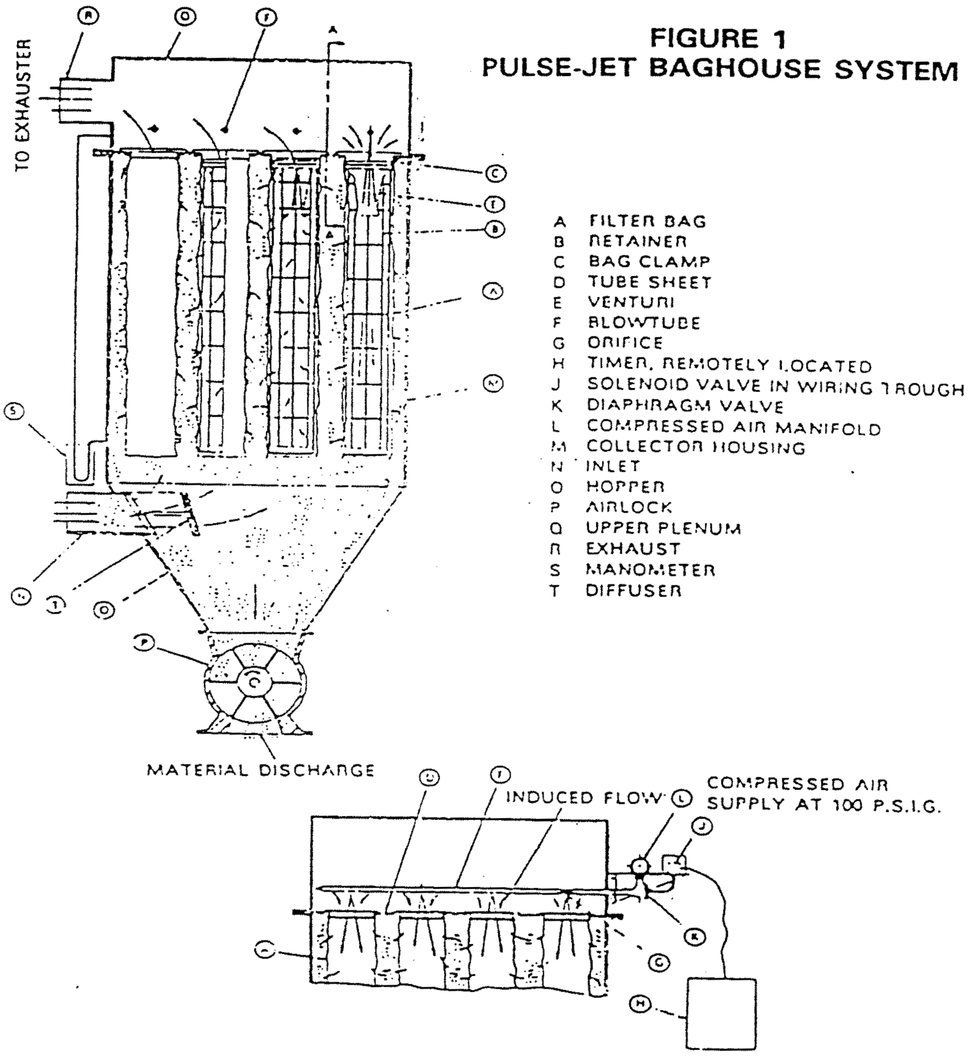
A. PULSE JET SYSTEM

The Pulse-Jet baghouses receive dust laden air that has been vented from specific ventilation systems. This air, under suction or pressure, enters the lower section of the collector (Figure 1). Most of the Pulse-Jet baghouses have a baffle (which works on the same principle as a diffuser) located in the hopper area of the collector, which distributes the air flow as it enters the baghouse. This system decreases the gases velocity and assists in uniform particle dispersion. Basic air flow in this type of baghouse is from the bottom outside of the bag to the inside top of the bag. Particulate remains on the outside of the fabric filter and air, cleaned of particulate, is vented to an exhaust stack. As dust collects on the filter bags, it reduces the bag porosity, resulting in an increase pressure differential across the collector.

Dust remains on the bags exterior until a preset pressure differential is reached thereby triggering a pulse jet cleaning system. At preset intervals, governed by the differential pressure gauge settings, a timer actuates a series of normally closed solenoid valves causing them to open. Diaphragm valves open as a result allowing a momentary in rush of high pressure air (90-110 PSI). The air flows from a compressed air manifold, through a diaphragm valve into a blow-tube, from which it is expelled at a high velocity through a number of strategically placed blow-tube orifices. Air from each orifice induces a secondary airflow, counter to the primary, several times the volume of the cleaning air. The air pulse causes an instantaneous pressure rise on the clean side (inside of the filter bags) which flexes the fabric and causes a momentary reverse flow of air through the filter bags sufficient for cleaning. Since only a fraction of the total filter area of the collector is cleaned at any one instant, continuous flow through the collector at rated capacities is assured.

Through this mechanism, the collected dust is discharged from the bags and falls into the collection hopper. The dust is then

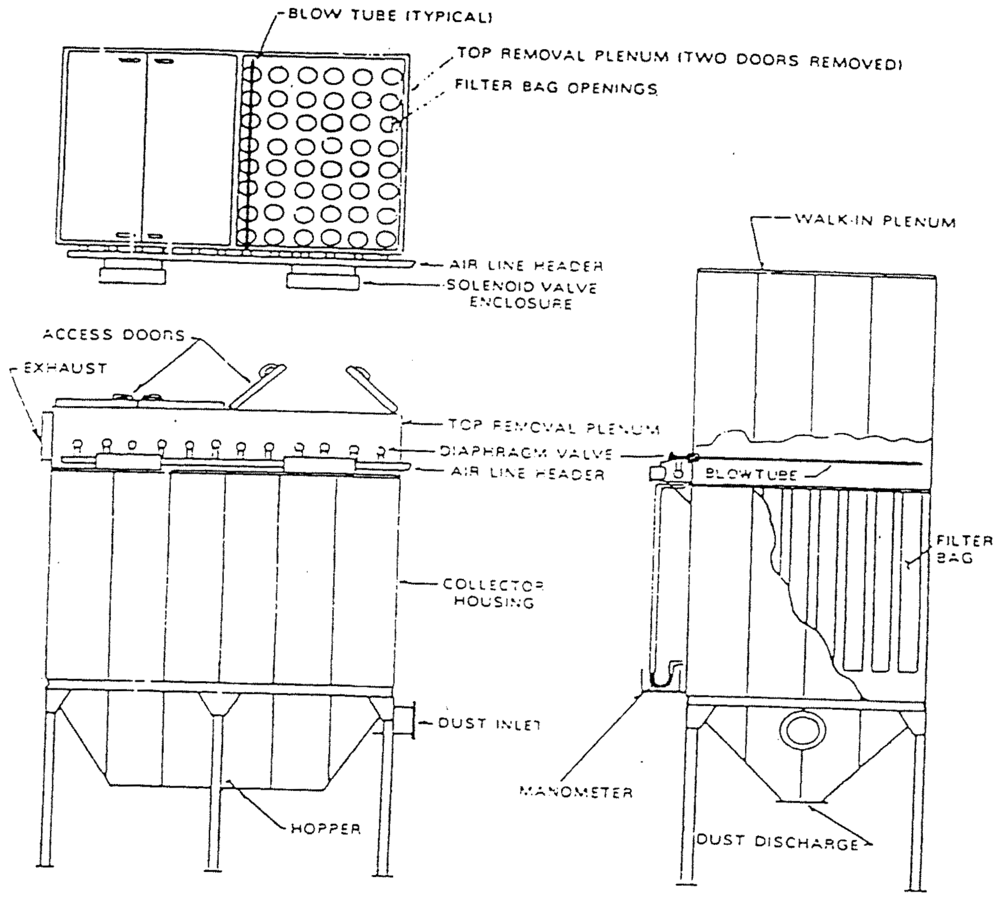
FIGURE 1
PULSE-JET BAGHOUSE SYSTEM



A FILTER BAG
B RETAINER
C BAG CLAMP
D TUBE SHEET
E VENTURI
F BLOWTUBE
G ORIFICE
H TIMER, REMOTELY LOCATED
J SOLENOID VALVE IN WIRING TROUGH
K DIAPHRAGM VALVE
L COMPRESSED AIR MANIFOLD
M COLLECTOR HOUSING
N INLET
O HOPPER
P AIRLOCK
Q UPPER PLENUM
R EXHAUST
S MANOMETER
T DIFFUSER

3

FIGURE 1 (CONTINUED)
PULSE-JET BAGHOUSE SYSTEM



periodically removed from the hopper via screw conveyor, or other reclaiming device for recovery of valuable metals.

Although most of the pulse Jet baghouses utilized at Asarco are manufactured by the MikroPul Company, (now known as the Hasokawa MicroPul Environmental Systems), there are characteristics unique to individual baghouse systems. Characterized below are the Pulse-Jet baghouses utilized at Asarco's East Helena facility.

1. Concentrate Storage and Handling Building (CSHB) (North), general building ventilation
2. Concentrate Storage and Handling Building (CSHB) (Middle), general building ventilation
3. Concentrate Storage and Handling Building (CSHB) (south), ventilates the feeder area.
4. Sinter Plant Ventilation System (SPVS), #6 Ventilation Baghouse System.
5. Crushing Mill/Sinter Plant #1
6. Sinter Storage
7. Acid Dust Handling

CSHB North

Manufacturer	MikroPul
Style	Pulse-Jet
Serial Number	North 890326 H1
Model	1700J-10-20 TRH "C"
Design Flow Rate	107,500 ACFM
Air to Cloth Ratio	5.4:1
Filter Cloth Area	20,018 ft^2
Number of Bags	1,700
Bag Size	4½" X 10'

CSHB Middle

Manufacturer	MikroPul
Style	Pulse-Jet
Serial Number	Middle 890326 H2
Model	1700J-10-20 TRH "C"
Design Flow Rate	107,500 ACFM
Air to Cloth Ratio	5.4:1
Filter Cloth Area	20,018 ft^2
Number of Bags	1,700
Bag Size	4½" X 10'

CSHB Feeder Area South

Manufacturer	Mikro-Pul
Style	Pulse-Jet
Serial Number	890326H3
Model	360S-10-TRH
Design Flow Rate	25,400 ACFM
Air to Cloth Ratio	6:1
Filter Cloth Area	4,241 ft^2
Number of Bags	360
Bag Size	4½" X 10'

#6 VENTILATION FAN (SPVS)

Manufacturer	Mikro-Pul
Style	Pulse-Jet
Serial Number	#1 North 930172H4 #2 930172H3 #3 930172H2 #4 South 930172H1
Model	289S-10-TRH
Design Flow Rate	52,000 ACFM
Air to Cloth Ratio	3.8:1
Filter Cloth Area	13,616 ft^2
Number of Bags	1,156
Bag Size	4½" X 10'

Crushing Mill/Sinter Plant #1 [1]

Manufacturer	Mikro-Pul
Style	Pulse-Jet
Serial Number	845172H1
Model	380S-10-20-TRH
Design Flow Rate	20,000 ACFM
Air to Cloth Ratio	4.47:1
Filter Cloth Area	4,476 ft^2
Number of Bags	380
Bag Size	4½" X 10'

Sinter Storage Area

Manufacturer	Mikro-Pul
Style	Pulse-Jet
Serial Number	845209H1
Model	720K-10-20 TRH
Design Flow Rate	40,000 ACFM
Air to Cloth Ratio	4.7:1
Filter Cloth Area	8,482 ft^2
Number of Bags	720
Bag Size	4½" X 10'

[1] This system will be dedicated full-time to Sinter Plant Ventilation by October 4, 1996 (Lead SIP).

Acid Dust[2]

Manufacturer	C P Environmental Filters
Style	Pulse-Jet
Serial Number	3292
Model	843F064C
Design Flow Rate	2000 ACFM
Air to Cloth Ratio	3.1:1
Filter Cloth Area	641 ft^2
Number of Bags	64
Bag Size	4½" X 8½'

[2] This baghouse is part of the new dust pneumatic conveying system which transports dust from the D&L baghouse and Cottrell dust capture system to the Concentrate Storage and Handling Building (CSHB).

B. MECHANICAL/SHAKER SYSTEM

A mechanical shaker system is used on some of Asarco's baghouses. Air flow dynamics are subject to the same behavior patterns as the Pulse-Jet system (previously described). Gaseous and/or particulate laden air is vented into the lower section of the dust collector and travels upward through the collection bags (which retains the particulate). Basic airflow is from the bottom inside of the bag to the top outside of the bag. Accordingly, the mechanical "shaker" system is designed to collect dust on the inside of the filter bags (unlike the Pulse-Jet system where particulate is collected on the bags exterior). The air, cleaned of particulate is vented to an exhaust stack. Dust remains on the bags interior until a predetermined differential pressure, or preset time (where applicable) is reached. Filter bags are affixed to thimbles, at the bottom of the bag section of the baghouse, and the top of the bags are fastened to a shaker bar. Movement of the "shaker bar" is produced by a number of different methods. Two of the types are illustrated in Figure 2. One is a pneumatic cylinder system, the other an electric driven crankshaft design. Since the tops of the bags are fastened to the shaker bars, movement of the bars shake the bags and causes the collected particulate to fall off of the bags into a collection hopper. The particulate "dust" is then periodically removed from the hopper for recovery of valuable metals.

Characterized below are the mechanical shaker type baghouses utilized at Asarco's East Helena facility.

1. Crushing Mill/Sinter Plant #2
2. Crushing Mill #3
3. Sample Mill (Bucking Room)
4. Sinter Plant (D&L)
5. Blast Furnace

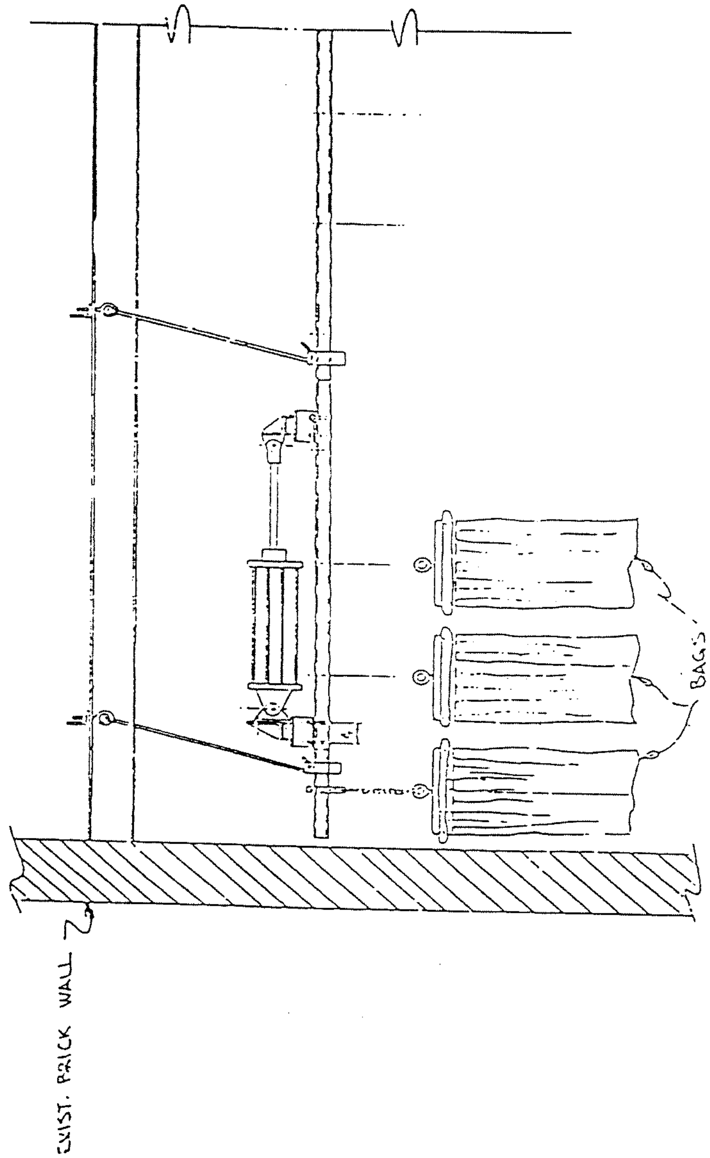
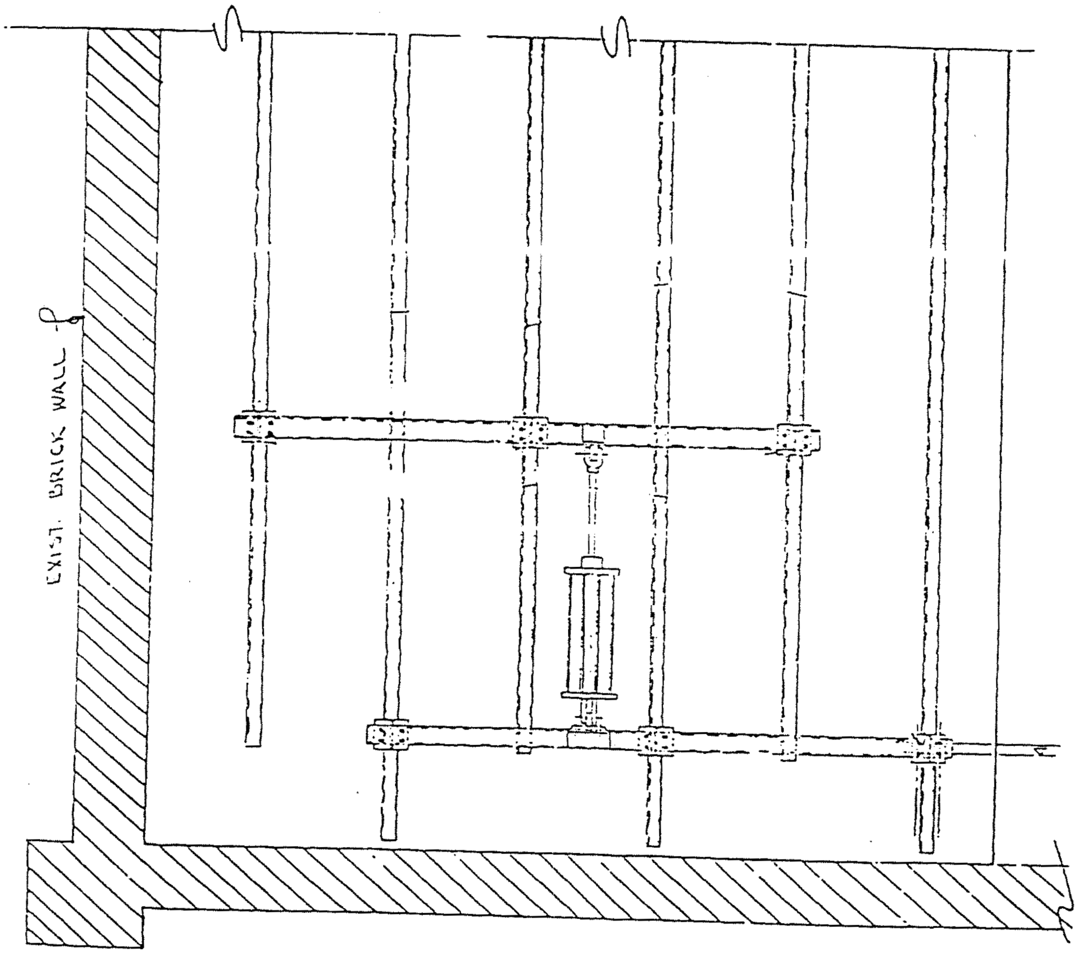


FIGURE 2
MECHANICAL "SHAKER" SYSTEM (pneumatic type)

STATE OF MONTANA AIR QUALITY CONTROL IMPLEMENTATION PLAN	Subject: Lewis and Clark Co. Air Pollution Control Program

FIGURE 2 (CONTINUED)
MECHANICAL "SHAKER" SYSTEM (pneumatic type)



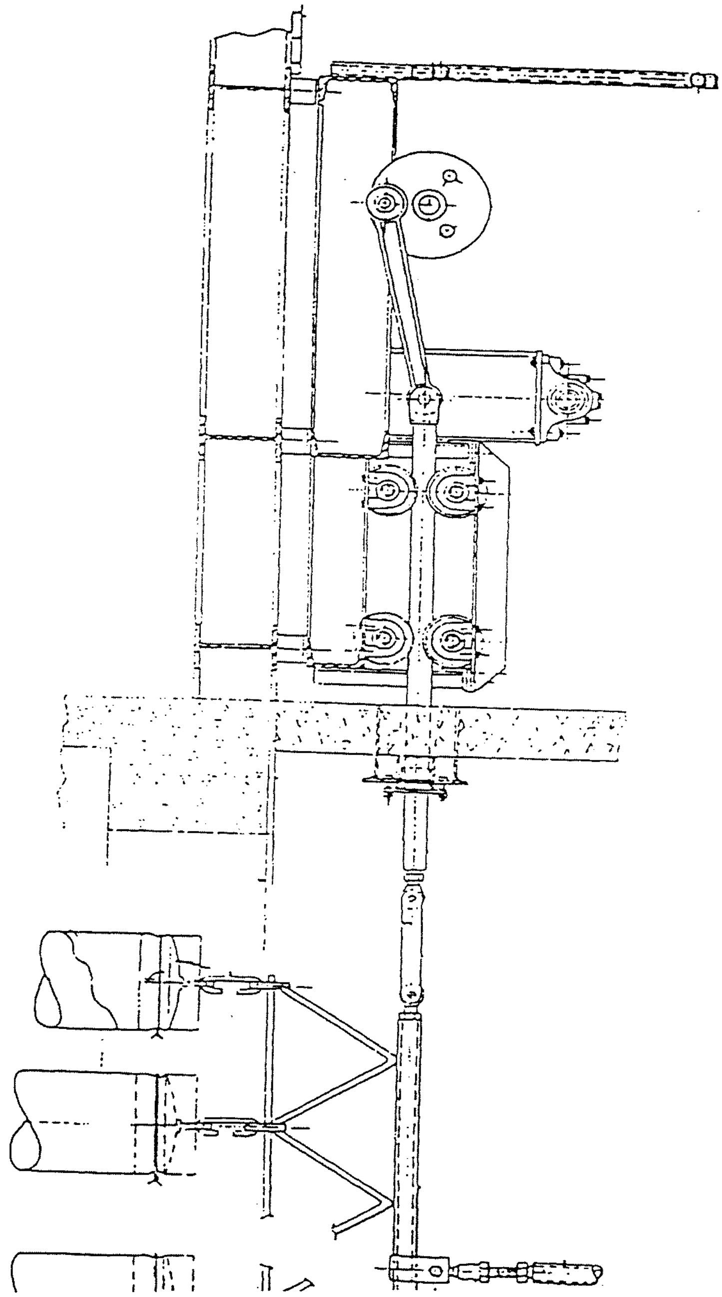


FIGURE 2 (CONTINUED)
MECHANICAL "SHAKER" SYSTEM (crankshaft type)

Crushing Mill/Sinter Plant #2[3]

Manufacturer	Rees
Style	Shaker
Serial Number	#48
Model	Dust Arrester
Design Flow Rate	21,500 ACFM
Air to Cloth Ratio	3.8:1
Filter Cloth Area	5,702 ft^2
Number of Bags	480
Bag Size	5½" X 99"

[3] This system will be dedicated full-time to Sinter Plant Ventilation by October 4, 1996 (Lead SIP).

Crushing Mill #3[4]

Manufacturer	Rees
Style	Shaker
Serial Number	#16
Model	Dust Arrester
Design Flow Rate	8,000 ACFM
Air to Cloth Ratio	4.5:1
Filter Cloth Area	1,759 ft^2
Number of Bags	160
Bag Size	5¼" X 8'

Sample Mill (bucking room)

Manufacturer	American
Style	Shaker
Serial Number	A79089
Model	185
Design Flow Rate	12,500 ACFM
Air to Cloth Ratio	3:1
Filter Cloth Area	4,145 ft^2
Number of Bags	432
Bag Size	5" X 88"

[4] This system will not be used to ventilate the Crushing Mill while crushing material after October 4, 1996 (Lead SIP).

Blast Furnace

Manufacturer	ASARCO Incorporated
Style	Shaker
Serial Number	N/A
Model	N/A
Design Flow Rate	350,000 ACFM
Air to Cloth Ratio	87:1
Filter Cloth Area	400,930 ft^2
Number of Bags	2,836
Bag Size	18" X 30'

D&L

Manufacturer	ASARCO Incorporated
Style	Shaker
Serial Number	N/A
Model	N/A
Design Flow Rate	124,800 ACFM
Air to Cloth Ratio	97:1
Filter Cloth Area	128,177 ft^2
Number of Bags	1,632
Bag Size	12½" X 24'

III. EQUIPMENT USED

A. DIFFERENTIAL PRESSURE INDICATOR/CONTROLLER

The differential pressure indicator/controller is an instrument which registers the pressure differential across the baghouse collector or individual baghouse modules. The device is an effective tool for monitoring the efficiency of the Pulse-Jet cleaning system. The device monitors differential pressures, and maintains a manually set differential pressure range in the baghouse by controlling the frequency of cleaning. A typical differential pressure indicator/controller is illustrated in figure 3.

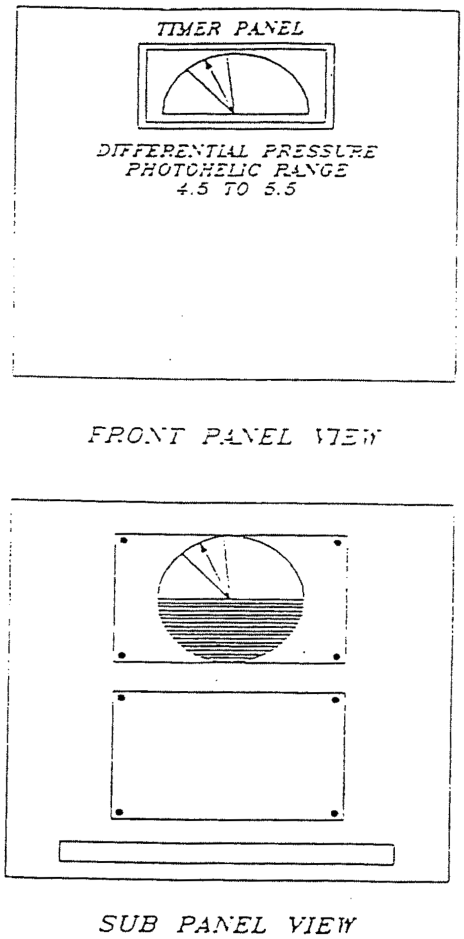
B. HOURLY OPERATING METERS

Asarco will install hour meters on baghouse fans that are not already connected and monitored by the plant computer tracking system. The hour meters and the computer tracking system records the hours of operation of the baghouse fans. The meter readings will be documented for submittal in the quarterly Lead SIP report, as required in Section 9 (B), of the Lead SIP.

C. Bag Break Detectors

Asarco shall install, operate, and maintain bag break detectors on all baghouses except those that have

FIGURE 3
DIFFERENTIAL PRESSURE INDICATOR/SWITCH
(EXAMPLE ONLY)



Continuous Opacity Monitoring Systems (COMS) on their stacks as outlined in Section 11 (B) of the lead SIP. These detectors shall be installed by August 4, 1996 except that unfinished baghouses (under construction) must have detectors installed were applicable by January 6, 1997.

The broken bag detectors are designed to determine changes in particulate, which pass by a sensor that is located in the baghouse exhaust flue. The rise in particulate as measured by the sensor could indicate various things, such as a shake or pulse cycle to clean the bags, as well as, a broken bag or damaged tube sheet. For this reason, it will take time after installation of the broken bag detectors located at each baghouse to build up a profile of each unit. This profile will help in setting the early detection alarm levels. The alarm levels are manually set, and will be used to help in detection of failed or broken bags. The bag break detectors will also be equipped with data loggers which will record variations of particulate as measured by the bag break detectors. The early alarm levels will be set on an individual basis, as determined by the baghouse maintenance person. These levels will be set after installation and shake down of the bag break detectors, and a profile of each baghouse has been determined.

D. CONTINUOUS OPACITY MONITORING SYSTEM (COMS)

There is an opacity monitor currently located on the blast furnace baghouse stack. Another opacity monitor will be installed on the new dross plant baghouse stack by January 6, 1997. These COMS will be used to demonstrate compliance with opacity limits on the individual stacks, as well as to provide detection of increased opacity which may indicate baghouse malfunctions. The COMS will have an alarm setting of less than 20% opacity, which will be used to trigger inspection of a baghouse for abnormal operation.

IV. PROCEDURE FOR ENSURING GOOD OPERATION

Routine inspections and preventive maintenance activities are the core to continued proper operating status of any piece of equipment. Baghouses are no exception. Asarco has successfully maintained its baghouses for years, and fully intends to continue this practice. In order to document future maintenance activities, ASARCO will utilize a series of baghouse inspection forms for the inspections, (see Appendix A, for form samples). Frequency of inspections will be as provided on the forms. These inspection forms are designed to document the following:

a. Damaged bags;
b. Air leaks;
c. Caking and blinding of bags;
d. Proper bag cleaner functioning and cycling;
e. Bag break detectors;
f. All moving parts or loose parts and unusual wear; and
g. Fans for wear, material buildup, and corrosion.

Completed inspection forms will be maintained in the Environmental Sciences Department.

A. DAILY INSPECTIONS

The Differential pressure of the baghouses, which reflect caking and blinding of the bags and the effectiveness of the cleaning system, will be measured on a daily basis. Some baghouses have more than one unit, such as the Sinter Plant baghouse. This particular baghouse has 8 units. The daily inspection form includes enough differential pressure boxes for documenting each unit of any operating baghouse. One of the requirements in the lead SIP is determinations of air leaks and baghouse fan operating hours. A space has also been provided so these can be inspected and documented on a daily basis. In order to test for broken bags, or other malfunctions of the baghouse which could allow more particulate to pass through the baghouse, broken bag detectors are being installed on all baghouses which don't already have a COMS. The daily inspections will also require that the broken bag detectors or COMS readings be documented on a daily basis. A column is included for any abnormalities or maintenance items needed to insure proper operation of the baghouses. Once a maintenance item has been identified, it is the responsibility of the inspector to notify his supervisor who will take appropriate action to insure that the situation is reported and repaired. At the bottom of the form is a location for the zero test of all of the differential pressure indicators/controls on each baghouse unit on a monthly basis.

B. ANNUAL BAGHOUSE INSPECTIONS

Annual baghouse inspections serve as an extension to the daily baghouse inspections. The annual baghouse inspection will be performed to check items which are not generally covered by the daily inspections. These include: 1) checking the differential pressure indicator/controller high and low set points where applicable; 2) checking the cleaning cycle of the Pulse-Jet baghouse; 3) checking the cleaning cycle of the Mechanical shaker type baghouse; 4) checking shakers, seals and suspension mechanisms, to insure all moving parts are operating properly; 5) black light tests to check for damaged bags, or tube sheets holes; 6) check door gaskets; 7) check tube sheets for structural damage; 8) check hopper baffles where applicable; 9) check that bags are hanging properly; 10) check screw conveyor where applicable; 11) check fan housing for corrosion; 12) inspect fan wheel for wear or buildup; and 13) inspect the broken bag detector probe for abnormal wear or build-up. This annual inspection process, along with the daily inspections will help insure that all of the ASARCO baghouses are checked for proper operation on a regular basis. A copy of this inspection form can be found in Appendix A.

1. FLUORESCENT-TRACER INSPECTION (BLACK LIGHT TEST)

The increasing attention placed on baghouse performance and efficiencies has made it more apparent that an effective method for checking the integrity of baghouse bags is required to meet expected baghouse performance. To accomplish this, ASARCO will utilize a visilight system for conducting annual baghouse inspections. The visilight process is a method used to check the condition of bags, as well as tube sheets and thimble floors. The procedure utilizes a incandescent tracer compound and a monochromatic or blacklight detector to locate dust leaks in the filter bags and/or tube sheet.

The visilight inspection procedure begins by introducing fluorescent powder into the "upstream flue" air stream of the baghouse. Powder size is critical and should be 2 to 4 microns aerodynamic diameter. Due to the nature of the powder, it stays dispersed in the air stream and distributes itself throughout the baghouse. Approximately 30 seconds after introduction of the fluorescent powder, the baghouse fan should be shut down, and the clean side of the baghouse inspected. All avenues where light may enter this area are covered giving the inspector an atmosphere void of natural light. A blacklight is then used to inspect the bags, tube sheet or thimble floor.

This particular procedure can supply valuable information by helping to spotlight problem areas. Information gained may help identify: 1) broken, leaking, or misaligned bag gaskets; 2) cracks, breaks, or loose caulking in the tube sheet; 3) ripped, torn, or worn filter bags, 4) cracks in seams, 5) leaks in seals, or any other issue which would allow materials to penetrate the barrier between the dirty and clean side of the baghouse. Each issue mentioned above is made visible by the fluorescent powder when viewed under blacklight. The problem area is then pinpointed and corrective action initiated.

C. BAGHOUSE MAINTENANCE

While the above mentioned inspections are necessary to insure that any abnormalities or malfunctions of a baghouse are documented, the following will list how the maintenance or repair of any baghouse related equipment will be documented. A Baghouse Maintenance Form, (found in Appendix A) will be used to document all repairs to baghouse equipment. Once a problem has been encountered with a piece of baghouse equipment, the baghouse supervisor will notify the proper maintenance supervisor (i.e., welding, pipe fitter, etc...), of the need to have the item repaired. Obviously this will only happen when repairs are needed other than that which will be done by the baghouse maintenance personnel. When repairs are necessary by the baghouse personnel, they will perform the required maintenance and document it on the attached maintenance form. Maintenance of the baghouses by the maintenance and baghouse personnel will be documented on the Baghouse Maintenance Inspection form. Completed forms will be kept on file at the environmental office.

1. Broken Bag Detector Maintenance.

ASARCO has not yet ordered these items, and can not finalize this section until seeing the units operation and maintenance manual.

2. BROKEN BAG DETECTOR/COMS ALARMS.

Since the broken bag detectors and the COMS will be used as a detection device for abnormal operations of a baghouse, the response to these alarms is very critical. ASARCO intends to have the alarms for each of the units placed in a central location, were they can be monitored 24 hours a day. This system is currently being used for the sulfur dioxide CEMS on the stacks. After a bag break detector alarm setting has been determined, and an alarm is activated, the baghouse maintenance crew will be called to investigate the alarm. They will determine the cause of the alarm, and perform maintenance to repair the condition which caused the alarm. These actions will be documented and submitted with the normal maintenance forms.

D. BAGHOUSE BAG IDENTIFICATION FORM

The Baghouse Bag Identification form will be used as a tracking device to record filter bag problems and repairs. Each incident in which maintenance is performed on a bag will be documented on this form. This particular information may be used in determining the typical life of the filter bags or reoccurrence of similar problems in the same area. Since each baghouse is different, a Baghouse Bag Identification form will be developed for each individual baghouse. See Appendix A for Baghouse Bag Identification form sample.

V. DISPOSAL OF USED BAGHOUSE BAGS.

ASARCO will dispose of exposed or used baghouse bags by smelting them in the blast furnace. This method will insure recovery of valuable metals found in the exposed bags, and reduce the risk of baghouse dust being distributed outside of the plant. The bags will be rolled up, and placed in a portable container for disposal. The bags will be directly charged to the furnace charge car by appropriate means, (payloader or forklift). After the bags have been loaded on to the charge car they are automatically conveyed to the blast furnace for smelting.

VI. RECORD KEEPING

All completed data collection records are kept at Asarco's East Helena Plant Environmental Sciences Department. All records will be retained for at least five years and are made available for review and inspection.

APPENDIX A

DAILY BAGHOUSE INSPECTION FORM

BAGHOUSE NAME: ______________ MONTH AND YEAR: ______________

DATE	ΔP FOR EACH APPLICABLE BAGHOUSE SECTION								ARE ANY AIR LEAKS PRESENT? "Y" OR "N"	BAGHOUSE FAN METER READING (HRS)	BAG BREAK DETECTOR (OCMS) READING	LIST ANY ACTION REQUIRED, INCLUDING MAINTENANCE ITEMS NEEDED	INSPECTED BY:
	#1	#2	#3	#4	#5	#6	#7	#8					
1													
2													
3													
4													
5													
6													
7													
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31													

MONTHLY ZERO CHECK PERFORMED BY: ______ ZERO READINGS FOR EACH DIFFERENTIAL PRESSURE INDICATOR/CONTROLLER: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___ 8 ___

EAST HELENA PLANT
ANNUAL BAGHOUSE INSPECTION FORM

BAGHOUSE INSPECTED	
DATE INSPECTED	
INSPECTOR(S)	

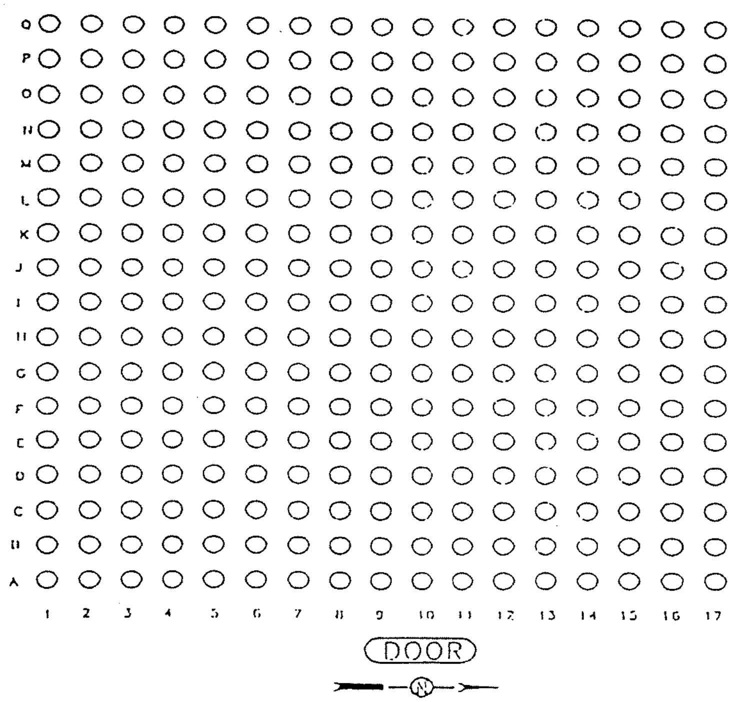
	ITEM INSPECTED	ANSWERS / COMMENTS	ACTION REQUIRED
1.	What is the Differential Pressure Indicator Range and Set Points (where applicable)		
2.	Cleaning Cycle Inspections for Pulse-Jet Systems		
a.	Check that all Solenoid/Diaphragm Valves are Operating Correctly (where applicable)		
b.	Check Unit Pulsing (e.g., every 1/10 second when activated)		
c.	Estimate Length Between Pulses (i.e., 5-10 seconds)		
3.	Cleaning Cycle Inspections for Shaker Systems		
a.	Length of Time Between Shakes (i.e., 55 Minutes)		
b.	Time Allowed for Damper to Close (where applicable) in seconds		
c.	Initial Null (time between damper being closed and initiation of shaking) in seconds		
d.	What is the Length of the Shaking Period (in seconds)		
e.	Final Null (time between termination of shaking and initiation of damper opening) in seconds		
f.	Do Dampers Close Tightly During Shaking Cycle? "Y"/"N"		
4.	Check all Shakers, Shaker Rod Seals, and Suspension Mechanism are Operating correctly		
5.	Blacklight: Check all Bags, Gaskets, etc...		
6.	Check Door Gasket in Good Condition (where applicable)		
7.	Check that Tube Sheet is Straight		
8.	Check that the Hopper Baffle is Clean and Straight (where applicable)		
9.	Check to see that Bags are Hanging Straight		
10.	Check Screw Conveyor, to see if it is Operating Properly		
11.	Check Fan Housing for Corrosion		
12.	Inspect Fan Wheel for Wear and Material Build-up		
13.	Inspect Broken Bag Detector Probe for Abnormal Wear		

EAST HELENA PLANT
BAGHOUSE MAINTENANCE FORM

BAGHOUSE NAME: ____________

DATE	TIME	PERSON RESPONSIBLE FOR REPAIR	DATE PROBLEM REFERRED TO MAINTENANCE DEPARTMENT	NATURE OF PROBLEM	ACTION TAKEN TO REPAIR THE PROBLEM	DATE OF REPAIR

BAGHOUSE BAG IDENTIFICATION FORM (SAMPLE)



MIKRO PULSAIRE D & L NO.6 VENT. BAGHOUSE NO. 1 (NORTH)
NO. 2
NO. 3
NO. 4 (SOUTH)

Date of Inspection ____________________

Name of Inspector ____________________

LOCATION OF FAILURE

1. Top of bag

2. Middle of bag

3. Bottom of bag

TYPE OF FAILURE

a. Vertical rip
b. Hole
c. Installation damage
d. Ring
e. Seam
f. Crease
g. Secondary

ACTION TAKEN

N-New bag installed
P-Plugged