APPENDIX A

SETTLEMENT AGREEMENT

SETTLEMENT AGREEMENT

This Settlement Agreement is made by and among the Missouri Department of Natural Resources ("MDNR"), the Missouri Air Conservation Commission ("MACC"), and the Doe Run Company. This Settlement Agreement is made on the date this document is executed by MDNR.

WHEREAS, the State of Missouri is preparing a request to the Environmental Protection Agency to redesignate the Arcadia and Liberty Townships in Iron County, Missouri (Glover Nonattainment Area), as attainment for lead (Pb). This request is being developed in accordance with the requirements established in Section 107 (d) (2) of the 1990 Clean Air Act Amendments. As part of the submittal to the Environmental Protection Agency, the State of Missouri is preparing a Maintenance Plan.

WHEREAS, ambient air monitors located in the Glover Nonattainment Area have shown continuous compliance with the National Ambient Air Quality Standard for lead (Pb) beginning in the first calendar quarter of 1997.

WHEREAS, the Doe Run Company has agreed to continue operating the lead (Pb) emission control equipment and processes at the Glover Lead Smelting Facility as established in this Settlement Agreement. This program of lead (Pb) emission controls are required as part of the Maintenance Plan. The Maintenance Plan includes a technical demonstration that the National Ambient Air Quality Standard for lead (Pb) shall continue to be met.

NOW THEREFORE, in consideration of the mutual promises contained herein, the parties agree as follows:

1. The provisions of this Settlement Agreement shall apply to and be binding upon the parties executing this Settlement Agreement, their heirs, assignees, successors, agents,

subsidiaries, affiliates, and lessees, including the officers, agents, servants, corporations and any persons acting under, through, or for the parties agreeing hereto. The parties, by their signatures hereto, acknowledge that they have read and understand the terms of this Settlement Agreement and agree to be bound thereby.

This Settlement Agreement may be modified upon the mutual written agreement of Doe Run, MDNR, and the MACC. It is recognized that from time to time Doe Run or any subsequent operator of the Glover Smelter may change its operating processes and procedures. The parties further agree that this Settlement Agreement is an element of the Glover Lead Maintenance Plan and, as such, any modifications thereto must be approved by the U.S. Environmental Protection Agency before the Maintenance Plan can be modified.

2. This Settlement Agreement can be terminated only upon mutual written agreement of Doe Run, MDNR, and the MACC.

3. Doe Run agrees to continue the operation of a lead emissions control program as set forth below. This program is sufficient to maintain the National Ambient Air Quality Standard for lead (Pb) in the Glover Nonattainment Area.

A. Concentrate Unloading: All trucks delivering concentrate shall unload only at the unloading building. The unloading shall be conducted according to the procedures outlines in Doe Run's Work Practices Manual (Addendum A, which, by this reference is incorporated herein).

B. Unloading Building Fugitive Emissions: The siding, roll-up doors, and roof monitor enclosure, each constructed to minimize air infiltration into the unloading building, shall be maintained. These doors and all personnel access doors shall remain closed except as needed for employees or vehicles to enter or exit the building. The

modified sinter handling system shall continue to be operated. This system shall convey sinter using the partially enclosed conveyor which deposits sinter directly into the feed hoppers such that a minimum of 70 percent of the sinter is deposited into the hoppers. When the hoppers are full, sinter shall be deposited into the unloading bins.

C. Sinter Plant Process Gas Controls: The ventilation gases exiting the Wheelabrator Baghouse shall continue to be routed to the Sinter Machine intake. The Sinter Plant Process Gas Baghouse shall continue to service the sinter plant process gases. The Sinter Plant Process Gas Baghouse shall be maintained to meet a total suspended particle specification of 0.01 grains per dry standard cubic foot of air. Gases exiting the Sinter Plant Process Gas Baghouse shall continue to be routed to the 186 meter main stack. The continuous particulate monitor, or equivalent, shall continue to be operated to monitor gases exiting the Sinter Plant Process Gas Baghouse. This continuous particulate monitor shall be operated to alert operators when particulate levels in the monitored gases exceed those experienced during a normal bag cleaning cycle. The output signals from this continuous particulate monitor shall be recorded during any stack tests. The setpoint of the continuous particulate monitor shall be set and recalibrated as necessary as part of a quarterly ventilation system inspection required under the Work Practices Manual (Addendum A), subject to MDNR's right to review and approve such calibration of the monitors. The monitor shall be operated and properly maintained such that it is out of service for no more than 48 hours per each calendar quarter. All necessary spare parts shall be maintained on site to assure that an extended monitor outage does not occur. Doe Run shall provide MDNR with a quarterly report within 30 days of the end of each calendar quarter summarizing monitor setpoints, alarm incidents, and any corrective

actions taken. The amperage of the Sinter Plant Process Gas Baghouse Fan shall be continuously recorded, and maintained above 125 amps except when systems are not being operated, during start-up or shutdown of the ventilation systems, during baghouse cleaning or repair, during cellar cleaning, or during maintenance, or during other conditions not representative of normal operating conditions. If any of these conditions apply, they shall be noted in the process logs, and reported MDNR on the quarterly report along with a summary of the fan amperage records. In addition, Doe Run shall measure at least once each calendar quarter the sinter process gas flowrates demonstrating that 125 amps continues to provide a minimum face velocity at building openings of 200 feet per minute.

D. Sinter Plant Building Ventilation and Fugitive Emission Controls. The siding and doors constructed to minimize air infiltration into the Sinter Plant Building shall be maintained. This enclosure shall continue to meet the criteria for permanent total enclosure as set forth in the U.S. Environmental Protection Agency's draft guidelines for determining capture efficiency (September 30, 1993). Sinter Plant doors shall remain closed except to allow for entering and exiting the building from the time of sinter machine start-up to 48 hours after sinter machine shutdown. Sinter Plant Building Ventilation Gases shall continue to be routed to the Sinter Plant Ventilation Baghouse. The Sinter Plant Ventilation Baghouse shall be maintained to meet a total suspended particulate specification of 0.01 grains per dry standard cubic foot of air. The continuous particulate monitor, or equivalent, shall continue to be operated to monitor gases exiting the Sinter Plant Ventilation Baghouse. This continuous particulate monitor shall be operated to alert operators when particulate levels in the monitored gases exceed those

experienced during a normal bag cleaning cycle. The output signals from this continuous particulate monitor shall be recorded during any stack tests. The setpoint of the continuous particulate monitor shall be set and recalibrated as necessary as part of a quarterly ventilation system inspection required under the Work Practices Manual (Addendum A), subject to MDNR's right to review and approve such calibration of the monitors. The monitor shall be operated and properly maintained such that it is out of service for no more than 48 hours per each calendar quarter. All necessary spare parts shall be maintained on site to assure that an extended monitor outage does not occur. Doe Run shall provide MDNR with a quarterly report within 30 days of the end of each calendar quarter summarizing monitor setpoints, alarm incidents, and any corrective actions taken. The flowrate of the Sinter Plant Process Gas Baghouse Fan shall be maintained above 100,000 actual cubic feet per minute as measured by a mass airflow transmitter except during start-ups or shut-downs, during baghouse cellar cleaning or repair, during maintenance, or during other conditions not representative of normal operating conditions. If any of these conditions apply, they shall be noted in the process logs, and reported MDNR on the quarterly report along with a summary of the transmitter records. Gases exiting the Sinter Plant Ventilation Baghouse shall be routed to the Sinter Plant Ventilation Stack. The conveyor from "R" hopper to the smooth rolls crusher shall continue to be maintained as a replacement for 3360 conveyor belt, 3250 pan conveyor, and the corrugated rolls crusher. The main feed conveyor shall continue to be maintained such that the drop point is extended to the mixing drum.

E. Blast Furnace Controls. The following ventilation hoods shall continue to be maintained: (i) Slag Launder Hood, (ii) Emergency Slag Opening Hood, and (iii) Lead

Pot Hood with modified design. The following ventilation rates to the furnace and dross kettle processes shall be maintained: (i) 45,000 actual cubic feet per minute from the top of the blast furnace, routed to the Blast Furnace Baghouse, (ii) 22,000 actual cubic feet per minute from the front of the blast furnace, routed to the Sinter Plant Ventilation Baghouse, (iii) 15,000 actual cubic feet per minute from the receiving kettles routed to the Blast Furnace Baghouse. These ventilation rates shall be measured at least quarterly, and maintained except during start-ups or shut-downs, during baghouse cellar cleaning or repair, during maintenance, when the source being ventilated is not in operation, or during conditions nonrepresentative of normal operations. The continuous particulate monitor, or equivalent, shall continue to be operated to monitor gases exiting the Blast Furnace Baghouse. This continuous particulate monitor shall be operated to alert operators when particulate levels in the monitored gases exceed those experienced during a normal bag cleaning cycle. The output signals from this continuous particulate monitor shall be recorded during any stack tests. The setpoint of the continuous particulate monitor shall be set and recalibrated as necessary as part of a quarterly ventilation system inspection required under the Work Practices Manual (Addendum A), subject to MDNR's right to review and approve such calibration of the monitors. The monitor shall be operated and properly maintained such that it is out of service for no more than 48 hours per each calendar quarter. All necessary spare parts shall be maintained on site to assure that an extended monitor outage does not occur. Doe Run shall provide MDNR with a quarterly report within 30 days of the end of each calendar quarter summarizing monitor setpoints, alarm incidents, and any corrective actions taken. If any of these conditions apply, they shall be noted in the process logs, and reported MDNR on the quarterly

report. Gases exiting the Blast Furnace Baghouse shall be routed to the Blast Furnace Stack.

F. In-Plant Roads, Dust Control. The road watering system shall be maintained on operated, except when ambient temperatures fall below 39°F. A map showing the coverage of the sprinkler system is included in Addendum A as Figure 3.1. The street sweeping program shall continue. Weather permitting, the sweeper shall be operated six hours per day, Monday through Friday, on all paved roadways within the plant that are not controlled by the water sprinkler system. The sweeper shall be operated to include those roadways controlled by the water sprinkler system when the ambient temperature is below 39°F. Figure 3.1 in Addendum A also shows the paved area that is to be swept.

G. Stack Emission Limits. This installation shall limit lead emissions into the atmosphere to the allowable emissions as listed: Main Stack – 184.2 pounds of lead per 24 hours, Sinter Plant Ventilation Baghouse Stack – 125.4 pounds of lead per 24 hours, and Blast Furnace Stack – 82.3 pounds of lead per 24 hours. Compliance with the emission limitations shall be demonstrated through tests conducted at Doe Run's expense, by an independent testing firm approved by MDNR. Lead emission rates shall be determined in accordance with 40 CFR Part 60 Appendix A, Method 12, or alternative methods as proposed by the Doe Run and approved by MDNR. Testing shall be conducted by April 1, 2004, and every four years thereafter. Doe Run shall notify MDNR of the proposed test dates and provide a copy of the test protocol to MDNR at least 30 days before testing. Test reports, including raw data, shall be submitted to MDNR within 60 working days of the completion of stack sampling.

H. Limitation of Hours of Operation. Doe Run shall limit the hours of operation of the following sources as follows: (i) Blast Furnace Baghouse clean out shall be limited to no more than 8 hours, one day per week, to occur between 7:00 A.M. and 6:00 P.M., (ii) Sample Preparation Baghouse shall be limited to no more than 8 hours in any one day to occur between 7:00 A.M. and 6:00 P.M., and Laboratory Assay Vent shall be limited to no more than 8 hours in any one day to occur between 7:00 A.M. and 6:00 P.M.

I. Process Weight Limits. Sinter plant production shall be limited to 202,000 tons of material charged per each calendar quarter. Sinter plant production shall be limited to 3,120 tons of material charged per day (7:00 A.M. to 7:00 A.M.). Blast furnace production shall be limited to 75,000 tons of lead-bearing material charged per each calendar quarter.

J. Work Practice Manual. Doe Run shall, to the extent consistent with this Settlement Agreement, adhere to the Work Practices Manual (Addendum A). Work practices in the Work Practice Manual may be modified only with the prior written approval of MDNR.

K. Record-Keeping. Doe Run shall maintain the following records for MDNR review for a minimum of 5 years following the recording of information. Doe Run shall maintain a file that states for each shift; (i) Sinter Machine throughput, (ii) Blast Furnace throughput, (iii) and refined lead produced. Doe Run shall maintain a file of the date, time, findings, and corrective actions taken for all baghouse inspections scheduled in the Work Practices Manual. Doe Run shall maintain a file that records any upset operating conditions or material spills that affect lead emissions. Doe Run shall

maintain a file that includes the following information involving street sweeping and the road sprinkler system: (i) Sweeper hours of operation, (ii) Reasons for not conducting sweeping on any occasion, (iii) Sweeper maintenance records, including dates of brush and filter replacement, and (iv) Reason for not operating the road sprinklers on any occasion. Doe Run shall maintain a file that records the weekly inspection of the conditions of the doors and siding of the unloading and Sinter Plant Buildings. Pending resolution of any enforcement action initiated by MDNR, Doe Run shall maintain all pertinent records indefinitely. Doe Run shall report to MDNR any property transfers related to the Glover facility, both sales and acquisitions, within ninety days.

L. MDNR and Doe Run shall continue monitoring the air for lead at all current monitor locations and frequencies and share all collected data. MDNR, with assistance from Doe Run, shall review the monitoring network by December 31, 2004, and changes, if any, to the monitoring frequency and locations shall be made as a result of this review.

M. Fencing. Doe Run shall continue to maintain a fence that precludes public access to areas that the Maintenance Plan modeling indicates will have lead concentrations above the National Ambient Air Quality Standard for lead (Pb).

N. Contingency Measures. If any air monitor in the area exceeds the lead standard as specified in 40 CFR 50.12, MDNR shall notify Doe Run. Implementation of the following contingency measures shall begin within 30 days from receipt of MDNR's notice, according to the following schedule. Contingency measure number (i) shall be implemented within 30 days from receipt of MDNR's original notice. If the lead standard is not achieved in the quarter following implementation of contingency measure (i), then

contingency measures (ii), (iii), and (iv) shall be implemented in the next quarter. If the lead standard is not achieved in the quarter following implementation of contingency measures (ii), (iii), and (iv), then contingency measures (v), (vi), and (vii) shall be implemented in the next quarter.

Contingency Measures:

(i) Truck Wash.

(ii) Expand In-Plant Road Sprinkler System.

(iii) Withdraw Unloading Building air for Sinter Plant Make-up air.

(iv) Doe Run shall meet the following stack emission limits: Main Stack – 160.1 pounds of lead per 24 hours, Ventilation Baghouse Stack – 108.9 pounds of lead per 24 hours, and Blast Furnace Stack – 71.5 pounds of lead per 24 hours. Compliance with these contingency stack emissions limitations shall be demonstrated to MDNR by Doe Run through tests conducted at Doe Run's expense, by an independent testing firm approved by MDNR. Lead emission rates shall be determined in accordance with 40 CFR Part 60 Appendix A, Method 12, or alternative methods as proposed by Doe Run and approved by MDNR. Contingency stack testing shall be conducted within 30 days of notification from MDNR. Test reports, including raw data, shall be submitted to MDNR within sixty working days of the completion of the stack sampling.

(v) Modify refinery skims handling in blast furnace area.

(vi) Increase efficiency of Sinter Plant Ventilation Baghouse.

If Doe Run identifies and demonstrates to MDNR's satisfaction alternative control measure(s) that would achieve equal or greater air quality improvements than the contingency measures identified above, MDNR agrees that Doe Run may substitute the new control(s) for the contingency measure(s) identified above. The substitute contingency measure shall be implemented under the same time frame as the original measure, unless both parties agree to a modified contingency schedule.

O. Stipulated Penalties. If Doe Run fails to comply with any requirement of this Settlement Agreement, Doe Run shall pay stipulated penalties according to the following schedule. The penalties set forth below are per day penalties, which are to be assessed beginning with the first day of the violation.

Period Of Noncompliance	Penalty
1st through 30th day	$ 500.00
31st though 60th day	$1,000.00
Beyond 61 days	$1,500.00

All penalties shall be paid within 45 days of the date of notice of noncompliance unless the penalty is challenged by Doe Run pursuant to the Dispute Resolution procedure outlined in Paragraph P. If the penalty is challenged, it shall not be paid until 30 days after the Director's determination that Doe Run owes the stipulated penalty, and Doe Run has failed to use, or has exhausted, its rights to review the Director's Decision. Stipulated penalties shall continue to accrue during the formal Dispute Resolution process or any appeal. In the event that Doe Run prevails, stipulated penalties shall not be due or owed. All penalties shall be paid by certified check made payable to the Iron County Treasurer as Trustee for the Iron county School Fund, and delivered to the Attorney General of

Missouri, P.O. Box 899, Jefferson city, Missouri 65102-0899, Attention: Shelley A. Woods, Assistant Attorney General, or Designee.

The penalties set forth herein shall not apply in the event of a force majeure, as defined in this paragraph. For the purposes of this Settlement Agreement, force majeure shall be defined as any event arising from causes beyond the control of Doe Run and of any entity controlled by Doe Run that delays or interferes with the performance of any obligation under this Settlement Agreement notwithstanding Doe Run's best efforts to avoid such an event. The requirement that Doe Run exercise "best efforts to avoid such an event" includes using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any potential force majeure event (1) as it is occurring, and (2) following the potential force majeure event such that the adverse effect or delay is minimized to the greatest extent practicable. Examples of events that are not force majeure events include, but are not limited to, increased cost or expenses of any work required under this Settlement Agreement or the financial difficulty of Doe Run to perform such work.

If any event occurs that is likely to delay or interfere with the performance of an obligation under this Settlement Agreement, whether or not caused by a force majeure event, Doe Run shall notify MDNR by telephone within 72 hours if Doe run knows the event is likely to delay or interfere with performance of an obligation under this Settlement Agreement. Within 5 business days thereafter, Doe Run shall provide in writing the reasons for the event; the anticipated duration; all actions taken or to be taken

to minimize its effects; a schedule for implementation of any measures to be taken to mitigate the event; and a statement as to whether, in the opinion of Doe Run, such an event may cause or contribute to the endangerment of public health, public welfare, or the environment. Failure to comply with the substance of the above requirements shall preclude Doe Run from asserting any claim of force majeure.

If MDNR agrees that the failure to perform an obligation of this Settlement Agreement is attributable to a force majeure, then the time for performance of any obligation under this Settlement Agreement that is directly affected by the force majeure event shall be extended for a period of time not to exceed the actual duration of the delay caused by the force majeure event.

If MDNR does not agree that the delay or noncompliance has been or will be caused by a force majeure event, or does not agree with Doe Run on the length of any time extension, the issue shall be subject to the Dispute Resolution procedures set forth in Paragraph P of this Settlement Agreement. In any such proceeding, to qualify for force majeure defense Doe Run shall have the burden of demonstrating by a preponderance of the evidence that the delay or noncompliance has been or will be caused by a force majeure event, that its duration was or will be warranted under the circumstances, that Doe Run exercised or is exercising due diligence by using its best efforts to avoid and mitigate its effects, and that Doe Run complied with the notification requirements in this section (Section O.) Should Doe run carry the burden set forth in this paragraph, the delay or noncompliance at issue shall be deemed not to be a violation of the affected obligation of this Settlement

Agreement.

MDNR agrees that the stipulated penalties set forth herein shall be MDNR's sole and exclusive remedy for any alleged or actual noncompliance by Doe Run with any terms of requirements of this Settlement Agreement or of the Work Practices Manual (Addendum A). MDNR waives its right to seek additional penalties under § 643.151, RSMo or any other provision of law for any such noncompliance.

Upon request of Doe Run, MDNR may in its unreviewable discretion impose a lesser penalty or no penalty at all for violations subject to stipulated penalties.

P. Dispute Resolution. Any dispute, which arises with respect to the meaning, application or implementation of this Settlement Agreement, shall in the first instance be the subject of informal negotiations between Doe Run and MDNR. Notice of a dispute shall be given by the party alleging the dispute, shall be addressed in writing to the MDNR Director, and copied to the opposing party. Such notice shall state the specific grounds for the dispute, including any supporting documentation, and the relief requested.

The MDNR and Doe run shall have 30 days from the receipt of the notice of the dispute to resolve the dispute. If agreement is reached, the resolution shall be reduced to writing and this Settlement Agreement modified, if appropriate. If the MDNR and Doe Run are unable to reach complete agreement within the 30-day period and this period is not extended in writing by mutual agreement of the parties, the matter will be submitted to

the Director. The opposing party may file suggestions in opposition and include any documentation relevant to deciding the dispute. Said suggestions and documentation shall be submitted within 14 days of submission of the matter to the Director. The MDNR Director will issue a written decision following his/her review of the record submitted by the parties.

The parties will then be entitled to judicial review pursuant to Section 536.140, RSMo. The filing of a notice of dispute shall not automatically suspend or postpone any parties' obligations under this Settlement Agreement with respect to the disputed issue. This provision shall not be construed to prevent either party from requesting a stay of the party's obligations under this Settlement Agreement, which request shall be filed at the same time as the notice of dispute.

Q. Care & Maintenance. Doe Run intends to halt production at the Glover facility and put the plant on a care and maintenance schedule. Doe Run shall notify MDNR of the date that the facility will be placed on care and maintenance and will no longer be operational and the date that the facility will be taken off care and maintenance. Once the plant is returned to operation this paragraph shall no longer apply. While the plant is on the care and maintenance schedule the following conditions of this Settlement Agreement will be suspended:

(i) The following sections of the Work Practice Manual:

a. 3.2.3 Sinter Building Washdown;

b. 3.2.4 Sinter Building Ventilation. Paragraph 2. Quarterly ventilation inspections as described in Supplement B;

c. 3.3.3 Periodic inspection of the point source ventilation systems;

d. 3.3.6 Refinery Area Washdown;

e. 3.4.1 Operation of sprinkler system;

f. 3.6 Baghouse inspections;

g. Supplement B- point source ventilation systems inspection and maintenance procedures;

h. Supplement C- Road Vacuum Sweeper Operation and Maintenance Procedures;

i. Supplement D- Quarterly baghouse inspections; and

j. 3.4.2 Road Sweeping. The road sweeper shall be operated for three days following the date that the plant is put on care and maintenance. After these three days, the road sweeping requirements shall be suspended until the plant is restarted and taken off of care and maintenance status.

(ii) The following requirements of the maintenance plan:

a. Ventilation system survey – Sinter plant building ventilation, blast furnace and kettle ventilation;

b. Opacity Report – Sinter plant ventilation and process stack triboflow reporting;

c. Fan Amperage – Sinter plant process fan;

d. Quarterly Report of ventilation systems;

e. Stack Testing Requirements. These requirements shall be postponed while the plant is on care and maintenance. Upon

restart of operations stack testing shall be scheduled for no later than ninety days after the restart date.

(iii) While the facility is on care and maintenance Doe Run shall limit ambient monitoring to a frequency of every sixth day monitoring at only the Big Creek and Post Office locations.

IN WITNESS WHEREOF, the parties have executed this Settlement Agreement as follows:

MISSOURI DEPARTMENT OF NATURAL RESOURCES

By: _____
Ms. Leanne Tippet
Director
Air Pollution Control Program

Date: 10/31/03

DOE RUN COMPANY

By: _____
Louis J. Marucheau
Vice President Law and Assistant Secretary
The Doe Run Company

Date: 10-31-03

MISSOURI AIR CONSERVATION COMMISSION

By: _____
Ms. Barry Kayes
Chair
Missouri Air Conservation Commission

Date: 10/30/03

ADDENDUM A

Manual of Work Practices

for Control of Lead Emissions

Table of Contents

1.0 Introduction

This manual of work practices has been revised in support of the maintenance plan for the control of lead emissions in the Glover, Missouri area. The Doe Run Company's Glover Smelter is the principal source of lead emissions in this area. These work practices are intended to minimize fugitive emissions of lead.

These work practices reflect process and equipment changes that will be made be part of the selected control strategy to reduce overall lead emissions.

1.1 Regulatory Requirements

This Manual is written to comply with the requirements of the Glover lead (Pb) maintenance plan. This manual is an Addendum to a Settlement Agreement between the Missouri Air Conservation Commission, the Missouri Department of Natural Resources and the Doe Run Company, and is the mechanism by which the work practices established in this manual become enforceable.

1.2 Definitions

Accumulated materials:	Lead bearing particulate that has the potential to become reentrained.
Washdown:	To wet or reduce accumulated materials.
Wetting:	Addition of sufficient water to ensure no visible emissions immediately following washdown.

2.0 Description of Operations

The operations of the various departments of the Glover Plant are described below.

2.1 Concentrate Unloading

The primary feedstock for the Glover Plant is lead concentrate from local mines. The concentrate is approximately 78% lead in the sulfide form. The concentrate is delivered by semi-trucks.

The semi-trucks enter the North end of the Plant and are weighed. The trucks then proceed to the North end of the Unloading Building where they dump the concentrate directly into a hopper.

Other non-lead-bearing feedstock materials are received in similar fashion by truck or railcar.

An overhead bucket crane in the Unloading Building transfers the concentrate and other feedstock materials in to hoppers that proportionately deposit material onto conveyors that enter the Sinter Plant.

2.2 Sinter Plant

The sulfur in the lead concentrate is thermally removed in the sintering process. The concentrate is mixed in proportion with other feedstock materials such as silica, iron ore, and limestone fluxes. These materials are crushed and mixed prior to being deposited on the sinter machine conveyor with returned sinter and blast furnace slag through the mixing drum.

An ignition layer enters the sinter machine and is ignited by gas-fired burners. The main layer is laid down over the ignition layer. This complete feed bed enters the updraft portion of the machine that draws air across the sinter bed from bottom to top to drive the thermal reaction. The off-gases are collected in a hood covering the machine and directed to a process gas baghouse.

The product of this process is a lava-like material called sinter. The sinter

is broken into various sizes and sorted by size. The larger pieces are transferred to the Unloading Building via conveyors. The undersized pieces are returned to the sinter machine feed after crushing. Approximately 50% of the sinter machine feed is undersized material.

2.3 Blast Furnace

The sinter from the Sinter Plant is directly deposited in one of three proportioning hoppers in the Unloading Building five days per week. These hoppers feed the "charge car" which contains the feedstock materials that charge the Blast Furnace. Some sinter is deposited in a large storage bin in the Unloading Building, typically on weekend days to provide reserve sinter that can be added to the hoppers by the overhead crane during times when the Sinter Plant is not operating.

The charge car is lifted to the top of the operating Blast Furnace and its contents are dumped into the furnace. The furnace shaft is fed from the top. Inside the shaft, the sinter is reduced by air and coke to form molten lead bullion. The flux materials form slag.

The bullion and slag are continuously tapped from the front of the furnace into a brick-lined settler where they are separated by gravity. The bullion is tapped into covered pots. The slag is generally granulated with water, cooled, and transported by conveyor belt to the Sinter Plant where it is recycled. Approximately one-third of the granulated slag is transported by truck and dumped onto the slag pile. During the infrequent times when the granulation system is not operational, the slag is tapped into pots, transported, and dumped onto the floor to cool. The cooled slag is then hauled to the slag pile.

The pots of bullion are lifted by an overhead crane and dumped into receiving kettles. As the bullion cools, a copper dross floats to the surface. Periodically, this dross is removed by skimming.

After the dross has been removed, the rough-drossed bullion is transported by ladle to the Refinery.

2.4 Refinery and Molding

The lead bullion from the receiving kettles is further refined by the removal

of copper, silver, zinc, and other trace impurities. These refining steps are performed in kettles and involve the addition of various reagents. Most of the processes are conducted at a temperature just above the melting point of lead and consequently, emissions are minimal.

The refined lead is pumped to the molding department where it is molded into sizes and shapes requested by customers.

The molded lead is primarily shipped from the plant in semi-trucks although some is shipped by rail.

3.0 Work Practices for the Control of Fugitive Lead Emissions

These work practices are intended to inform employees of pre-established procedures that will minimize fugitive lead emissions caused from such activities as materials handling and maximize the effectiveness and longevity of installed fugitive emissions control equipment.

Maintenance activities in the Glover Plant are requested with a computer-based Work Order system. The Work Orders are ranked in descending priority from "Priority 1" through "Priority 6". Following is a description of the priority levels:

Priority 1 - Needs immediate attention;
Priority 2 - Needs to be completed within 7 days;
Priority 3 - Routine planned work;
Priority 4 - Downtime work;
Priority 5 - Preventive maintenance; and
Priority 6 - Downtime immediate action.

Records maintained pursuant to this Manual of Work Practices will be retained for five years by the party responsible for their completion or in a central file. All records maintained pursuant to this manual will require the initials or signature of the person filling out the record form.

The Environmental department will keep a record of upsets in the plant that lead to unexpected lead emissions. An example of this would be spills of lead bearing material. This environmental incident report will note the duration, possible cause, estimates of emissions, and detail any corrective actions taken to correct the situation. A form for this purpose is given in Supplement A.

3.1 Concentrate Unloading

The primary control of fugitive lead emissions in this department is accomplished by the enclosed sides of the Unloading Building. The enclosed walls and doors prevent wind from entering the building and subsequently transporting lead-bearing dust out of the building. The dust is generated by material handling and dumping activities inside the building.

The applicable work practices supporting emissions controls focus on maintaining enclosed conditions for the Unloading Building.

3.1.1 Keeping Building Doors Closed During Material Handling Operations

Numerous roll-up doors will be installed to allow truck, railcar, front-end loader, and other vehicle access to the bins. The doors will be closed except during dumping from trucks and/or front-end loaders into storage bins. The doors will only be open during the dumping phase and will be closed immediately after dumping.

The exception to this practice is the unloading of baghouse dust. This dust must be dumped into a storage bin through a door on the West side of the building. The door will be immediately closed after a cellar is cleaned and all dust transported to the bin.

3.1.2 Maintenance of Doors and Siding

All doors and siding will be inspected regularly and repaired promptly.

The Unloading Supervisor will inspect the condition of the doors and siding once per week. If holes or openings are found in the doors or siding, repairs will be completed within 7 days of detection.

If a door is found that cannot be fully closed, either during the weekly inspection or during normal work, the door will be immediately corrected so that it will close. The door will not be opened during operations until it has been repaired to allow normal opening and closing.

The Unloading Supervisor will keep records of the weekly inspections using a form found in Supplement A.

3.2 Sinter Plant

Control of fugitive lead emissions in this department requires the effective enclosure and ventilation of the Sinter Plant. Lead dust inside the Sinter Plant is generated by the movement of materials and by the sintering machine itself. The applicable work practices that support these emission controls focus on maintaining enclosed conditions and maintaining proper

building ventilation.

3.2.1 Keeping Building Doors Closed

The doors to the Sinter Building will be closed except when people or equipment are entering or exiting the building.

3.2.2 Maintenance of Doors and Siding

All doors and siding will be inspected regularly and repaired promptly.

The Sinter Plant Supervisor will inspect the condition of the doors and siding once per week. If holes or openings are found in the doors or siding, repairs will be completed within 7 days of detection.

The Sinter Plant Supervisor will keep records of the weekly inspections using a form found in Supplement A.

3.2.3 Sinter Building Washdown

Material spilled onto the lower floor will be collected and returned to the process using hoses and front-end loaders. Washdown will be performed once per day at a minimum when the ambient temperature is above 39°F. Washdown activities will be noted on sinter process logs.

3.2.4 Sinter Building Ventilation

Operation of the sinter machine will be initiated only if the Sinter Building ventilation is operating. Sinter Building ventilation will be operated for at least 48 hours after the shutdown of the sinter machine.

The ventilation system will undergo quarterly inspections as described in Supplement B.

3.3 Blast Furnace Area

3.3.1 Filling of Bullion Pots

Blast furnace employees will be trained in work practices to avoid overfilling of lead pots.

3.3.2 Use of Point Source Ventilation Systems

The point source ventilation systems for the blast furnace area include: 1) the front of the furnace and tapping area; 2) the receiving (dross) kettles; and 3) the top of the furnace.

Operation of a blast furnace and the associated bullion and slag tapping, kettle bullion transfers; or treatment in the dross kettles will be initiated only if the appurtenant point source ventilation systems are operable.

The processes of the blast furnace area are initiated by a large increase in temperature that begins a self-sustaining, continuous process. Once initiated, these processes cannot be stopped immediately and must wait for the temperature of the system to slowly drop below a level where the self sustaining portion of the process begins to diminish. If during operation excessive emissions are seen, the applicable point source ventilation system will be inspected immediately. Based on the inspection the next course of action will be chosen. This could include one of the following options: 1) reduce the blast furnace processes as much as possible to minimize excess emissions; 2) provide alternate ventilation; or 3) begin complete cessation of the blast furnace operations.

A Work Order of appropriate "Priority" status will be submitted to coordinate with the course of action chosen.

3.3.3 Periodic Inspection of Point Source Ventilation Systems

The point source ventilation systems in the blast furnace area will undergo quarterly inspections as described in Supplement B.

Records will be kept of these system inspections on a form found in Supplement A.

3.3.4 Prevention and Response to Blow Holes

The blast furnace operators will ensure that enough feed material is in the furnace to provide a sufficient seal at the top of the furnace.

If a blow hole should occur, prompt action will be taken to seal the hole.

This action could include shooting the area around the hole with explosives or adding additional feed material.

Blow hole occurrences and the corrective actions taken will be recorded on the Blast Furnace Daily Log Sheet by the supervisor in charge, after the condition has been corrected.

3.3.5 Refinery Area Washdown

Material spilled onto the floor will be collected and returned to the process using hoses and front-end loaders. Washdown will be performed once per day at a minimum. Washdown activities will be noted on refinery process logs. For safety reasons, washdown will not be performed if the temperature is below 39°F.

3.4 In-Plant Roads

The In-plant roads are illustrated in Figure 3-1. A combination of sprinkling and sweeping will be used, as needed to minimize road dust.

3.4.1 Sprinkler Systems

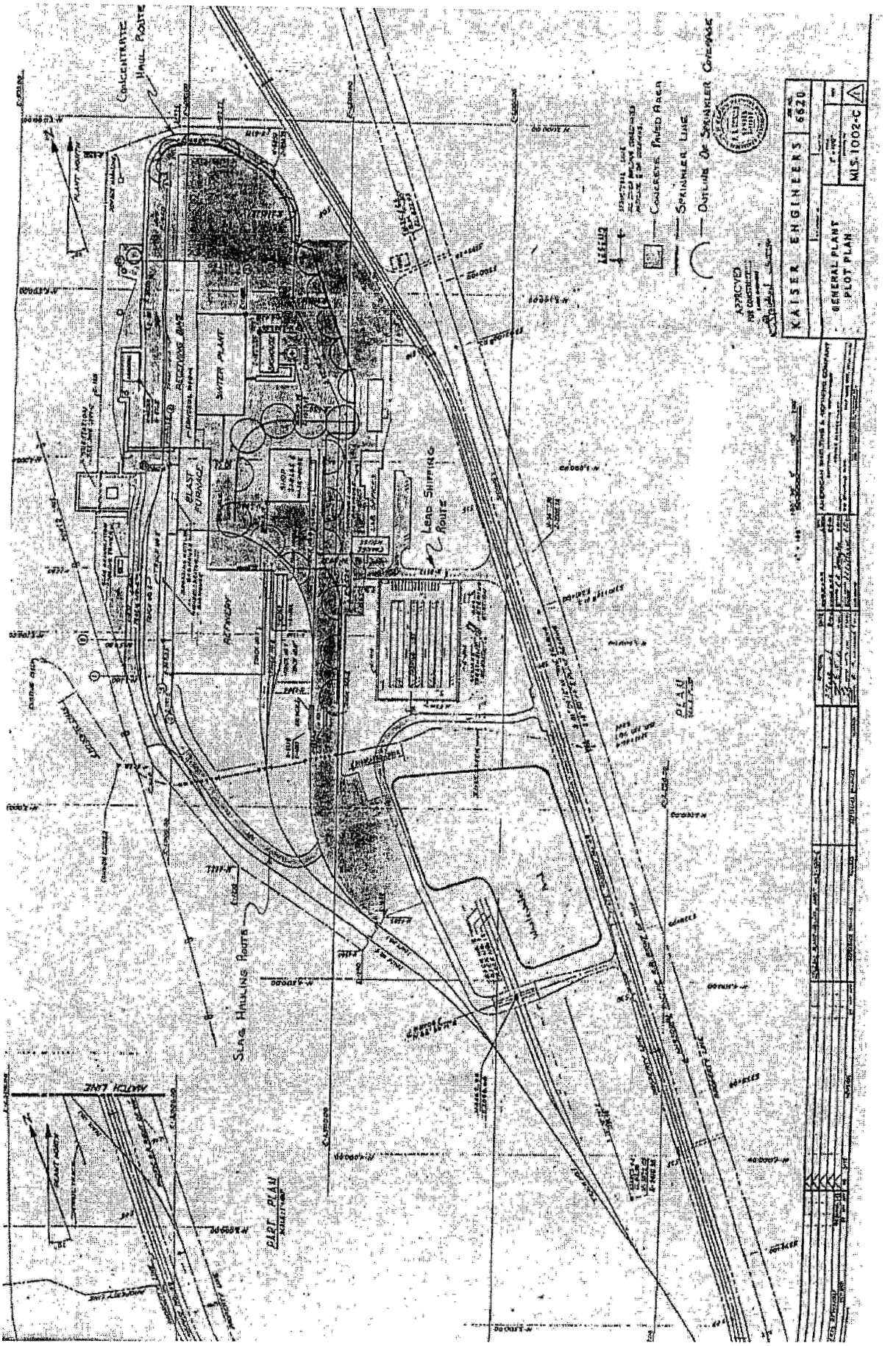
The traffic routes controlled by sprinklers are identified in Figure 3-1. These sprinkler systems will be maintained in proper working condition. Systems will be operated when the ambient temperature is above 39°F.

The systems will be inspected once per day by the Environmental Department. Records of the daily inspections will be kept in the Environmental Daily Log.

If a sprinkler system is providing less than full coverage of a traffic route through which vehicles drive, the following actions will be taken: 1) that section of the system will be inspected to determine the possible cause of the malfunction; 2) a "Priority 3" Work Order will be submitted; 3) all traffic will be routed around the area not covered until a) an alternate sprinkler/wetting system is setup or b) the area is dried and vacuum swept to a condition where minimal visible dust exists.

Records of the corrective actions taken will be kept in the Environmental Daily Log.

Figure 3-1


KAISER ENGINEERS 6620
GENERAL PLANT PLOT PLAN
MLS-1002-C
Concentrate Haul Route
Lead Shipping Route
Slag Hauling Route
Blast Furnace
Refinery
Sinter Plant
Reclaiming Area
Concrete Paved Area
Sprinkler Line
Outline of Sprinkler Coverage
Approved
PLAN
PART PLAN
MATCH LINE

3.4.2 Road Sweeping

The In-plant roads will be swept as needed to minimize dust loading and during times when sprinkler system cannot be operated, such as during periods when the ambient temperature is below 39°F or during a malfunction of a sprinkler system section as described above. The areas controlled by sweeping are identified in Figure 3-1.

The sweeper will be operated according to the following schedule on a five days per week, six hours per day basis.

1. The concentrate truck unloading road will be swept a minimum of three times per day.

2. The refined lead truck road from the plant entrance to the refined lead loading area to the plant scale will be swept three times per day.

3. The slag haulage road from the plant scale to the rear plant entrance will be swept once per day.

4. The area between the maintenance shop and the blast furnace will be swept once per week. Additional sweeping will be done if visible suspended emissions exist in the area.

5. The area between the unloading building and the blast furnace baghouse will be swept twice per week. Additional sweeping will be done if visible suspended emissions exist in this area.

The sweeper will be operated and maintained according to the manufacturer's recommendations as provided in Supplement C.

3.5 Baghouse Cleaning

The objective of this procedure is to minimize, control, and prevent the escape of fugitive dust during the removal, transportation, and unloading of Sinter Plant Ventilation and Blast Furnace baghouse dust. The procedures are similar for each baghouse.

The Sinter Plant supervisor shall be responsible for assuring that baghouse dust unloading is conducted according to this procedure. The supervisor is responsible for training the hourly employees in the

proper procedures. The supervisor shall inspect any baghouse dust unloading operation to ensure the procedures are followed. The supervisor shall be responsible for a log of all cellar cleaning activity.

Consideration should be given to wind. Windy conditions can lead to significant lead emissions during baghouse dust transport. Baghouse cleaning will not be done if the Sinter Plant supervisor feels that the local wind conditions would cause visible emissions.

Two employees shall perform the unloading procedure: a front-end loader operator and a baghouseman who operates the high pressure water hose and acts as a safety man.

A front-end loader is used to clean the cellars and transport the dust. The plant dump truck may be used on occasion to transport the dust.

The following steps are taken:

1) The damper is closed on the cellar to be cleaned;

2) Airborne dust is allowed to settle;

3) The main access door to the cellar is opened and the hose inserted to wet the dust as much as practical;

4) As the payloader cleans the cellar the baghouseman continues to wet the dust;

5) The dust is transported to the Unloading Building and dropped into the storage bin at as low level as possible to minimize the drop of the dust;

6) When the cellar is cleaned, the cellar door is resealed and the chamber put back in service by opening the damper. The roll-up door at the Unloading Building bin will be closed;

7) The doors are checked for leaks and corrected as necessary;

8) The area is cleaned by washing down with the hose and picking up any material with the payloader.

9) The area is to be kept clean with a vacuum sweeper as required.

3.6 Baghouse Inspections

The baghouses are designed to filter particulate from ventilation and process gas streams. The purpose of baghouse inspections and baghouse particulate alarms is to ensure that the baghouses are operating properly, and to identify problems that can be corrected.

All baghouses will be inspected weekly for leaks using visual methods. The baghouse supervisor will be responsible for these inspections. Records of these inspections will be kept. If the weekly baghouse inspection indicates a problem with the baghouse, appropriate corrective action will be taken. The corrective actions will be noted on the inspection forms.

The baghouses will be inspected quarterly employing Visolite® tests according to the procedure in Supplement D. The baghouse supervisor will be responsible for these inspections. Records of these inspections will be kept.

Continuous particulate monitors will be operated whenever the Blast Furnace, Sinter Process, or Sinter Building Ventilation Baghouses are operated. If the signal from the continuous particulate monitor exceeds the output observed during a normal cleaning cycle, the alarm will sound.

If a baghouse alarm sounds, the following actions will be taken:

1. The baghouse operator will attempt to identify the cause of the alarms. This may mean locking out different cells in the baghouse and noting the output signal of the particulate monitor.

2. If the problem is identified, an appropriate work order will be submitted. Until corrective action has been taken, the baghouse will be operated such that lead emissions are minimized.

3. If the problem could not be immediately identified, the problem will be reported to the environmental department for further review. This review will include a complete baghouse inspection.

4. All alarms and corrective actions will be noted on an inspection form and filed for future reference.

4.0 Training

Training will be given to the plant employees that will communicate the purpose and requirements of this Manual of Work Practices.

Operation guidelines, their rationale, and their effects on minimizing fugitive lead emissions will be stressed in this training.

The training will be part of the annual training module given to each Glover Plant employee. New employees also receive this training. Employees transferred into specialized areas will receive training for their new area.

Specialized training will be the responsibility of the area supervisor. General training of this Manual will be the responsibility of the Environmental Department. Training records will be kept in the plant safety office.

Specialized training is provided for the following job classifications:

- ★ Baghouseman
- ★ Sweeper operator
- ★ Charge car operator
- ★ Furnaceman
- ★ Drossman

Supplement A

Recordkeeping Forms

ASARCO INC, MISSOURI LEAD DIVISION, GLOVER UNIT

ENVIRONMENTAL INCIDENT REPORT

DATE:_____ LOCAL TIME:_____ SKY COVER:_____

GROUND COND(WET,DRY,ETC):_____ DURATION:_____ INTENSITY:_____

DESCRIBE INCIDENT IN DETAIL:_____

_____

_____

_____

_____

AREA SUPERVISOR ON DUTY:_____ CORRECTIVE ACTION:_____

_____

_____

_____

SIGNATURE OF ENVIRONMENTAL SPECIALIST:_____

UNLOADING BUILDING ENCLOSURE INSPECTION

DATE: _____

SIDING CONDITION	OK	NEEDS REPAIR	DESCRIPTION OF PROBLEM	CORRECTIVE ACTION	DATE W/O WRITTEN	DATE COMPLETED
DOORS:						
DOOR #: 1						
2						
3						
4						
5						
6						
7						
8						

INSPECTED BY: _____

DAILY BAG-HOUSE REPORT

Date:_____

Sinter Plant

	1	2	3	4	5	6	7	8	9
Cellars fired									
Bags: Replaced									
Retied									
Capped									
Dust Removed (Cat Buckets)									
Dampers working: Inlet									
Outlet									
Shakers Working									

Any Defects Noted: _____

Quality Visolite Test Results: _____

Spray Chamber	
No. of sprays cleaned	
Spray Temp. Control	
Baghouse Temp. Control	

Blast Furnace

	1	2	3	4	5	6
Cellars fired						
Bags: Replaced						
Retied						
Capped						
Dust Removed (Cat Buckets)						
Dampers working: Inlet						
Outlet						
Shakers Working						

Any Defects Noted: _____

Quality Visolite Test Results: _____

Spray Chamber	
No. of sprays cleaned	
Spray Temp. Control	
Baghouse Temp. Control	

Please note the cause of any problems which occured in the last 24 hours, and any corrective action taken. When bags fail, describe as accurately as possible the location (top, middle, bottom; seam, bell, etc.)of the failure and possible cause.

ASARCO GLOVER PLANT PROCESS BAGHOUSE INSPECTION SHEET

BAGHOUSE: _____ DATE: _____

INSPECTOR: _____ TIME: _____

CELL	MAGNEHELIC: GOOD	NEEDS ATTN:	DIAPHRAM: GOOD	NEEDS ATTN:	TIME SETTING: GOOD	NEEDS ATTN:	BAGS: GOOD	NEEDS ATTN:
1	( )	( )	( )	( )	( )	( )	( )	( )
2	( )	( )	( )	( )	( )	( )	( )	( )
3	( )	( )	( )	( )	( )	( )	( )	( )
4	( )	( )	( )	( )	( )	( )	( )	( )
5	( )	( )	( )	( )	( )	( )	( )	( )
6	( )	( )	( )	( )	( )	( )		

	GOOD	NEEDS ATTN:
FAN AMPS: _____		
AIR PRESSURE	( )	( )
SOLENOID VALVES	( )	( )

CORRECTIVE ACTION TAKEN: _____

DATE: _____

BAG FAILURE	TOP	MIDDLE	BOTTOM
( ) TEARS	( )	( )	( )
( ) TORN SEAMS	( )	( )	( )
( ) PIN HOLES	( )	( )	( )

WHICH CELL: _____

NO. BAGS REPLACED: _____

CORRECTIVE ACTION TAKEN: _____

DATE: _____

CAGE CONDITION: BENT: _____ BROKEN: _____ TIME: _____

CELL #: _____ NUMBER OF CAGES: _____ DATE: _____

WEEKLY MAGNAHELIC READINGS

1							
2							
3							
4							
5							
6							

QUARTERLY VISOLITE TEST:

DATE: _____

RESULTS: _____

CORRECTIVE ACTION TAKEN: _____

SINTER BUILDING ENCLOSURE INSPECTION

DATE: _____

	OK	NEEDS REPAIR	DESCRIPTION OF PROBLEM	CORRECTIVE ACTION	DATE W/O WRITTEN	DATE COMPLETED
SIDING CONDITION						
DOORS:						
DOOR #:						
1						
2						
3						
4						
5						
6						
7						
8						

INSPECTED BY: _____

POINT SOURCE VENTILATION SYSTEMS QUARTERLY INSPECTION REPORT

DATE: _____

BLAST FURNACE AREA PSV SYSTEMS	MINIMUM REQUIRED AIR FLOW ACFM	ACTUAL ACFM	VISUAL INSPECTION MECHANICAL & PHYSICAL CONDITION		W/O	DEFICIENCY	CORRECTIVE ACTION	DATE COMP.
			OK	NEEDS REPAIR				
1. FRONT OF FURNACE & TAPPING AREA	22,000							
2. RECEIVING KETTLES	15,000							
3. TOP OF FURNACE	60,000							

SINTER BUILDING PSV SYSTEMS	MINIMUM REQUIRED AIR FLOW ACFM	ACTUAL ACFM	VISUAL INSPECTION MECHANICAL & PHYSICAL CONDITION		W/O	DEFICIENCY	CORRECTIVE ACTION	DATE COMP.
			OK	NEEDS REPAIR				
1. PROCESS GASES	185,000							
2. SINTER BUILDING VENTILATION	100,000							

INSPECTOR: _____

ASARCO GLOVER PLANT WHEELABRATOR BAGHOUSE INSPECTION SHEET

BAGHOUSE: _____ DATE: _____

INSPECTOR: _____ TIME: _____

CELL	MAGNEHELIC		DIAPHRAM		TIME SETTING		BAGS	
	GOOD	NEEDS ATTN:	GOOD	NEEDS ATTN:	GOOD	NEEDS ATTN:	GOOD	NEEDS ATTN:
1	( )	( )	( )	( )	( )	( )	( )	( )
2	( )	( )	( )	( )	( )	( )	( )	( )
3	( )	( )	( )	( )	( )	( )	( )	( )
4	( )	( )	( )	( )	( )	( )	( )	( )
5	( )	( )	( )	( )	( )	( )	( )	( )

	GOOD	NEEDS ATTN:
AMPS 3906 FAN	( )	( )
AIR PRESSURE	( )	( )
SOLENOID VALVES	( )	( )

CORRECTIVE ACTION TAKEN: _____

DATE: _____

BAG FAILURE	TOP	MIDDLE	BOTTOM
( ) TEARS	( )	( )	( )
( ) TORN SEAMS	( )	( )	( )
( ) PIN HOLES	( )	( )	( )

WHICH CELL: _____

NO. BAGS REPLACED: _____

CORRECTIVE ACTION TAKEN: _____

DATE: _____

CAGE CONDITION: BENT: _____ BROKEN: _____ TIME: _____

CELL #: _____ NUMBER OF CAGES: _____ DATE: _____

WEEKLY MAGNAHELIC READINGS

CELL #	MON	TUES	WED	THUR	FRI	SAT	SUN
1							
2							
3							
4							
5							

QUARTERLY VISOLITE TEST:

DATE: _____

RESULTS: _____

CORRECTIVE ACTION TAKEN: _____

Supplement B

Point Source Ventilation Systems

Inspection and Maintenance Procedures

Glover Plant
Blast Furnace Area and Sinter Building
Point Source Ventilation System
Inspection and Maintenance Procedures

Introduction

The Point Source Ventilation (PSV) Systems are designed to collect air from fugitive dust emission sources. The collected air (and the dust contained in it) is then routed to a baghouse where the dust is captured and subsequently accumulated for reprocessing.

The PSV systems for the blast furnace area include: 1) the front of the furnace and tapping area; 2) the receiving (dross) kettles; and 3) the top of the furnace. The PSV systems for the sinter building include: 1) sinter plant process gases; 2) sinter building ventilation; and 3) other conveying, crushing and mixing equipment PSV systems.

These systems undergo routine, periodic inspections to insure proper operation. The systems are also inspected prior to initiation of blast furnace operations after a period of down time greater than 1 day.

Routine Inspection Frequency

Routine inspections will be performed once per quarter. As part of these routine quarterly inspections, the Triboflow (or MDNR approved equivalent) continuous particulate monitors will be calibrated as necessary to alert operators when particulate levels in the exhaust gases are above those seen during normal bag cleaning cycles, subject to MDNR's right to observe, review and approve such calibration of the monitors.

Inspection Procedures

Visual Inspection - A visual inspection of the mechanical and physical condition of the systems is the fundamental procedure to be used. Any deficiencies will be noted and will be the subjects of the subsequent Work Order that will be submitted.

Air Flow Measurements - Sinter Building ventilation gases will be

continuously measured and recorded. These rates will be recorded at a minimum of five minute intervals. The sinter process gas baghouse fan amperage will be recorded continuously (see explanation below). Other ventilation rates will be measured quarterly. The measured ventilation rates/fan amperages must be maintained above the following minimums:

Source/Area Ventilated	**Minimum Air Flow/Fan Amperage**	**Point of Measurement**	**Measurement Frequency**
Blast Furnace Ventilation - Total Flow	45,000 acfm	Just prior to spray chamber	Quarterly
Dross Kettles	15,000 acfm	Just downstream of the fan	Quarterly
Front of Blast Furnace	22,000 acfm	In flue leading to the sinter plant ventilation baghouse	Quarterly
Sinter Building Ventilation	100,000 acfm	90 inch flue leading from the header system to the intake at the baghouse	Continuously
Sinter Machine Process Gases	"*"		Continuously / Quarterly

The Sinter Plant Supervisor is responsible for assuring that the minimum ventilation rates are being met. If the calculated ventilation rates fall below these minimums, the Sinter Plant Supervisor will submit the appropriate work order for repairs. The corrective actions will be noted on an inspection report, and Environmental Department will be notified.

These minimum ventilation rates/fan amperages will not apply when

systems are not being operated, during start-up or shutdown of the ventilation systems, during baghouse cleaning or repair, during cellar cleaning, during maintenance, or other conditions non-representative of normal operating conditions. If any of these conditions apply, they will be noted on the inspection report.

If for any reason the minimum ventilation rates cannot be met, the ventilation systems will be inspected. Based on this inspection the next course of action will be chosen. This could include one of the following options: 1) reduce process rates as much as possible to minimize emissions, 2) provide alternate ventilation, or 3) begin complete cessation of the associated process.

Copies of all ventilation inspections will be sent to MDNR on a quarterly basis.

"*" - Under the supervision of MDNR (post construction), Method 2 tests will be conducted (40 CFR pt. 60 Appendix A) to measure actual process gas flowrate while varying sinter process gas baghouse fan amperage. A relationship of fan amperage to actual flowrate will be developed.

The total ventilation of the Sinter Building will be designed to meet a 200 foot per minute nominal face velocity. Fan amperage will be continuously recorded. A minimum fan amperage (corresponding to the 100,000 acfm design criteria) will be added to the above table.

In addition to the continuous recording of fan amperage, quarterly measurements will be made to ensure that equipment efficiencies remain the same, and that the design 200 foot per minute face velocity is maintained. If these quarterly tests indicate that the original relationship of process gas flowrate to fan amperage is no longer correct, new Method 2 testing will be conducted to establish a new fan amperage to process gas flowrate relationship.

Supplement C

Road Vacuum Sweeper

Operation and Maintenance Procedures

The EnviroWhirl Operators Manual and Service Manual serve as the procedural manuals. Due to their volume they have not been inserted.

The manual is available for review as part of the Department of Natural Resources Files and is kept at the plant for training. The Manual is stored in the Automotive Maintenance Shop at the Glover facility. A copy of the manual is being provided to EPA as well as part of the formal maintenance plan submittal.

Supplement D

Quarterly Baghouse Inspections

Quarterly Baghouse Inspections

Procedure for Visolite® Baghouse Leak Detection Testing

Ventilation Baghouse (Wheelabrator Baghouse):

1. Visolite® testing is normally done on sinter plant down days each quarter or when leaks are suspected that cannot be found by visual inspection.

2. The baghouse fan is operating, the air impulse (bag cleaning) system is off.

3. Visolite® in the appropriate amount is introduced into the inlet manifold to each module through the 2-inch nipple provided.

4. After 1.5 minutes the top (inlet) damper to the module is closed.

5. The cell is checked with the ultraviolet light and all leaks repaired.

6. The test is repeated through all five modules.

Sinter Machine Baghouse:

1. Visolite® testing is normally done on sinter plant down days each quarter or when leaks are suspected that cannot be found by visual inspection.

2. The Visolite® inspection is a duplication of the above for the six modules in the baghouse.

Sinter Building Ventilation Baghouse:

1. Visolite® testing is normally done on sinter plant down days each quarter or when leaks are suspected that cannot be found by visual inspection.

2. The main baghouse fan is operating.

3. The shaking system is turned off.

4. 1,2,3 cellar dampers are open.

5. 4,5,6,7,8,9 cellar dampers are closed.

6. The appropriate amount of Visolite® is dumped into provided port on the inlet side of the baghouse fan.

7. The fan is operated for 1.5 minutes.

8. Shut off fan.

9. Check for leaks in the first three cellars with the ultraviolet light (UV).

10. Repair any leaks found.

11. Repeat this procedure in groups of three cellars.

EPA Rulemakings

CFR:	40 C.F.R. 52.1320(d)
FRM:	69 FR 63072 (10/29/04)
PRM:	69 FR 39382 (6/30/04)
State Submission:	1/26/04
State Final:	10/31/03
APDB File:	MO-228; EPA-R07-OAR-2004-MO-0003
Description:	EPA approved this Settlement Agreement designating the Arcadia and Liberty Townships in Iron County, Missouri (the Glover Nonattainment Area), as attainment for lead.

Difference Between the State and EPA-Approved Regulation

None.