



**EPA REGION 6
ENFORCEMENT SECTION
AIR INSPECTION REPORT**

Report Date: July 26, 2010

Inspection Dates: December 14 - 17,
2009

Type of Inspection: Multimedia, Air PCE

Company Name: Exide Technologies

Mailing Address: P.O. Box 250
Frisco, TX 75034

Physical Location: 7471 South 5th Street Lat: 33° 8' 30"
Frisco, TX 75034 Long: 096° 49' 53"

Type of Industry/NAICS/SIC Secondary Lead SIC: 3341
Smelting and NAIC: 331492
Refining

Identification Number: FRS: 110000456104 AFS: 4808500001

EPA Inspector: John Penland

Signature Date
8/10/10

Reviewed By: Garry Mokry

Signature Date
8/10/10

Reviewed By: Greg Valentine

Signature Date
8/10/10

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INTRODUCTION

As part of the December 2009 Exide Technologies – Frisco Plant multimedia inspection, staff of the U.S. Environmental Protection Agency - Region 6 Compliance Assurance and Enforcement Division (EPA) conducted a process-based Clean Air Act (CAA) partial compliance evaluation (PCE) of the Exide Technologies – Frisco Plant (Exide) located in Frisco, Texas under the authority of Section 114 of the CAA. The PCE focused solely on the operational, testing, and recordkeeping requirements for sources of lead emissions from the facility. This report describes the on-site inspection observations and discusses any issues found relating to Exide's requirements under the CAA.

ON-SITE INSPECTION SUMMARY

On December 14, 2009, EPA began an announced, multimedia inspection at Exide. David Robertson, the lead inspector, presented credentials to Mr. Frederick K. Ganster, Director of Environment, Health, & Safety for Exide's Transportation Global Business Unit, and Mr. James Messer, Manager of Environmental and Quality Control for Exide's Frisco, Texas Plant. Mr. Robertson then explained the order of the multimedia inspection and designated me, John Penland, as the inspector for Exide's requirements under the CAA.

Beginning on December 14, 2009, and continuing into the afternoon of December 15, 2009, Mr. Messer provided a detailed overview of each of the processes carried out at the Frisco Plant. During the process overview Mr. Messer fielded questions from the inspectors and provided notes related to each process. Copies of these notes are included with copies of the CAA inspection logbook and inspector notes in Appendix CAA-E. During the afternoon of December 15, 2009, EPA inspectors made a walkthrough inspection of the process areas at Exide to review those elements discussed during the process overview. Digital photographs taken during the walkthrough can be found in Appendix CAA-C.

On December 16, 2009, I conducted a limited review of Exide's records for completeness and compliance with the applicable recordkeeping and records retention requirements. A discussion of the findings can be found in the individual regulatory requirements sections of this report. Examples of the Exide compliance records that I reviewed were collected and can be found in Appendix CAA-D.

On December 17, 2009, I, accompanied by Mr. Ganster and representatives from Exide – Frisco Plant's environmental team, conducted a CAA focused inspection of work practices and equipment standards within the facility process areas. A discussion of the observations made during the inspection can be found in the individual regulatory requirements sections of this report. Original notes related to observations made during the inspection can be found in the CAA inspection logbook included in Appendix CAA-E. Digital photographs taken during the inspection are attached in Appendix CAA-C.

Following the December 17, 2009 walkthrough, I provided Mr. Messer and Mr. Ganster with a brief review of observations made during the inspection. This review included a discussion of potential areas of concern and notified Mr. Messer and Mr. Ganster that further documentation may be requested from Exide at a later date to supplement the inspection. I concluded the on-site CAA inspection on the afternoon of December 17, 2009.

PROCESS DESCRIPTION

The Exide - Frisco Battery Recycling facility is a lead-acid battery reclamation facility. Spent automobile and industrial batteries are the primary source of lead to the operation, but Exide also receives quantities of scrap lead and lead-contaminated wastes for lead recovery. The facility's operations yield four products: soft lead, hard lead (alloys), lead oxide, and sodium sulfate. Process flow diagrams for lead

smelting/refining operations and for the lead oxide process are provided in Appendix CAA-B. A facility plot plan and a table identifying the facility emission points by number (EPNs) are provided in Appendix CAA-A.

Scrap batteries are delivered to Exide by truck and stored in the covered material storage area (EPN 44) prior to processing. The batteries received by Exide are broken in the battery breaker (EPN 48FUG) and the component parts are separated by gravity in a water bath. Sulfuric acid emissions from the battery breaker are controlled by a wet scrubber (EPN 48). The lead from the batteries is rinsed with water sprays to remove residual sulfuric acid before being stored in the raw material storage building (EPN 47) along with other lead-bearing scraps. Emissions from the raw material storage building are controlled by a ventilation system and dust collector (EPN 45). Materials in both the covered material storage area and raw material storage building are transported by front-end loaders from the storage areas and charged to either the blast furnace or the reverberatory furnace as required.

Material to be fed to the reverberatory furnace is first mixed inside the raw material storage building and then dried in a natural gas-fired dryer to remove moisture and residual sulfuric acid. Dryer flue gases are vented through a baghouse and a flushed de-mister before being emitted through the soft lead baghouse stack (EPN 21). The dried feed material and the combined dust from each of the smelting and refining process baghouses is conveyed through a covered, screw-conveyor system, and charged to the reverberatory furnace by a hydraulic ram. Process emissions from the reverberatory furnace pass through a cooling zone, primary settling chamber (A-pipe), and the reverberatory furnace baghouse before they are combined with the process emissions from the blast furnace. Process fugitive emissions from the reverberatory furnace are controlled by ventilation hoods at the charging area, slag tap door, and lead tap door. Emissions from these hoods are routed to either the special alloy baghouse (EPN 22) or the supplemental ventilation baghouse (EPN 37). Non-process fugitive emissions from the reverberatory furnace area have been assigned their own emission point number (EPN 35).

Slag from the reverberatory furnace, dross from lead refining operations, scrap lead, and metals from wastewater treatment become feed for the blast furnace and are stored in the blast furnace area. The blast furnace area is equipped with an automated sprinkler system to reduce fugitive dust emissions. Feed for the blast furnace is charged to the furnace by a skip hoist. Process emissions from the blast furnace pass initially through a low nitrogen oxide (NO_x) afterburner to complete the combustion of any remaining carbon monoxide (CO) or volatile organic compounds (VOCs). The gases are then routed through a cooling zone, primary settling chamber (A-pipe), and the blast furnace baghouse before they are combined with the aforementioned process emissions from the reverberatory furnace. The combined emissions are then routed through a wet scrubber designed for removal of SO₂, and discharged to the atmosphere through the metallurgical scrubber stack (EPN 38). Process fugitive emissions from the blast furnace are controlled by ventilation hoods at the charge hopper loading area, furnace charging area, slag tap, and lead tap. Emissions from these hoods are routed to the hard lead baghouse (EPN 18), special alloy baghouse (EPN 22), or supplemental ventilation baghouse (EPN 37) before being discharged to the atmosphere. Non-process fugitive emissions from the blast furnace area have been assigned their own emission point number (EPN 10).

Slag from the blast furnace is taken by front-end loader to the slag treatment building where it is crushed, screened, and mixed with Portland cement, water, and the patented fixing agent Free Flow 100, to chemically fix the remaining lead content in a non-leachable form. The slag treatment operations have ventilation hoods for the slag crushing and screening operations that route emissions to a dedicated baghouse (EPN 39). A separate baghouse controls load-out fugitives from the slag treatment operation. Each of the reagent silos is equipped with a dedicated baghouse (EPNs 49 and 50). Non-process fugitives from slag treatment and handling have been assigned their own emission point number (EPN 52).

Refining of the lead bullion is accomplished in several large natural gas fired kettles. The bullion from the blast furnace is refined into hard lead, also called lead alloys. The bullion from the reverberatory furnace is refined into soft lead, a portion of which feeds the lead oxide process. The soft lead, hard lead, and special alloy refining areas all have dedicated vacuum hooding with a baghouse to control lead fumes and other contaminant emissions (EPNs 18, 21, and 22). Products of the natural gas combustion are vented to the atmosphere (EPNs 54 and 55). Non-process fugitive emissions from the refining building have been assigned their own emission point number (EPN 36).

Much of the soft lead produced at the facility is further processed into lead oxide. Soft lead ingots are initially melted in three melting pots and then reacted with air in six Barton Pot reactors to form lead oxide. The emissions from the reactors are routed through six dedicated settling chambers and baghouses to remove entrained lead oxide particles before being discharged to the atmosphere through the baghouse stacks (EPNs 11, 12, 13, 16, 24, and 25). The settling chambers feed into two oxide hammer-mills each controlled by a baghouse (EPNs 15 and 17). The homogenized oxide particles are then conveyed to storage tanks and weigh hoppers before being shipped. Two covered screw-conveyors load the oxide product into hopper trucks for shipment. Both conveyors have ventilators, and a bag filter is installed on the hopper truck vent before oxide loading begins (EPN 26). The oxide hygiene baghouse controls fugitive emissions from the oxide building including three melting pots and from both truck loading stations (EPN 14). Emissions from the natural gas burners for the melting pots and the oxide reactors are emitted to the atmosphere through their dedicated stacks (EPNs 56, 57, and 58).

All smelting, refining, and oxide production facilities operate 24 hours a day, 5 to 7 days a week, about 50 weeks a year (345 days/yr). The slag treatment facility operates 4 hours a day, 5 days a week, 52 weeks a year.

REGULATORY SUMMARY

The Exide – Frisco Plant is subject to several requirements of the CAA related to emissions of lead. As a secondary lead smelter, Exide is required to comply with the provisions of 40 Code of Federal Regulations (CFR) Part 60 Subparts A and L and 40 CFR Part 63 Subparts A and X. As a major stationary source of SO₂, CO, VOCs, NO_x, and sulfuric acid (H₂SO₄) vapor and as a provision of 40 CFR Part 63 Subpart X, Exide is required to have and comply with an effective federal operating permit issued under the provisions of 40 CFR Part 70. Additionally, for any modification at the facility that results in an increase in actual or potential emissions of a regulated pollutant, Exide must comply with the provisions of the federally approved NSR program found in 30 Texas Administrative Code 116.

Emission sources of lead at the plant include, but are not limited to filters, scrubbers, furnaces, refining-kettles, lead oxide reactors, dryers, materials storage areas, process fugitive emissions, and fugitive dust emissions. Discussion of Exide's regulatory requirements and related observations made during the on-site inspection will be addressed on an individual basis and proceed in the following order:

- 40 CFR Part 60 Subpart L – Standards of Performance for Secondary Lead Smelters
- 40 CFR Part 63 Subpart X – National Emission Standards for Hazardous Air Pollutants from Secondary Lead Smelting
- Title V Federal Operating Permit O1649
- Texas New Source Review Air Permit 1147A

- Texas New Source Review Air Permit 3048A

40 CFR Part 60 Subpart L - Standards of Performance for Secondary Lead Smelters

Subpart L establishes a particulate matter concentration limit of 50 mg/dscm and a 20% opacity limit for blast and reverb furnaces at secondary lead smelters constructed or modified after June 11, 1973. Compliance with these standards must be demonstrated by Method 5 from Appendix A of 40 CFR Part 60 for the concentration standard and Method 9 or another Administrator approved method for the opacity limit.

No document pertaining to Exide's compliance with the requirements of Subpart L was reviewed during the on-site inspection. According to statements made to me by Mr. James Messer on December 17, 2009 Exide does not have any Method 9 certified personnel on-site and does not regularly conduct Method 9 opacity readings.

40 CFR Part 63 Subpart X - National Emission Standards for Hazardous Air Pollutants from Secondary Lead Smelting

Subpart X separates emission sources at secondary lead smelters into 3 broad categories: Process emissions sources, for exhaust streams from the blast and reverberatory furnaces; Process fugitive emissions sources, for emissions from furnace charging and tapping operations, refining kettles, and feed dryer charging and transition pieces; and Fugitive dust sources, for furnace areas, battery breaking areas, plant roadways, refining and casting areas, and materials storage and handling areas.

Process Emissions Sources

For process sources, Subpart X establishes an emissions limit for blast, reverberatory, rotary, and electric smelting furnaces at a secondary lead smelter of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains of lead per dry standard cubic foot). Facilities are required to demonstrate compliance with this limit by performing compliance testing annually or biannually if the test result demonstrates a concentration of 1.0 milligram of lead per dry standard cubic meter (0.00044 grains of lead per dry standard cubic foot) or less during the time of the compliance test. Records of these tests are required to be maintained for a period of at least 5 years from the date of the test.

Stack testing results for the metallurgical scrubber stack (EPN 38), dating back to June 5, 2005, were available for review at the time of the inspection. I reviewed these documents for completion during my document review on December 16, 2009.

Process Fugitive Sources

For process fugitive sources, Subpart X requires that each source be located in a full enclosure or be equipped with an enclosure hood. The definitions and standards for these controls are specific to the emissions source and codified in the rule. Both enclosure hoods and total enclosures used to satisfy the requirements of this part must be routed to a control device that does not discharge to the atmosphere any gases that contain lead compounds in excess of 2.0 mg per dry standard cubic meter (0.00087 grains of lead per dry standard cubic foot). Compliance with this concentration requirement must be demonstrated using the same methods as those outlined in the Process Emissions Sources standard.

During my December 16, 2009 document review, I evaluated draft measurement records for each of the hood enclosures (Example - Appendix CAA-D, page 1) and stack test results for each of the emission

points. At the time of the inspection, I was unable to locate any draft readings for the reverberatory charging ram, blast furnace slag tap, or blast furnace charging skip hoist.

I inspected emissions controls for each process fugitive source during the facility walkthroughs on December 15 and 17, 2009. Each control was photographed and observed in operation. I also interviewed Exide environmental and operations personnel regarding the operation and testing of the emissions controls.

The reverberatory furnace feed dryer with its charging hopper (Appendix CAA-C Photo: ExideAir024) and transition pieces (Appendix CAA-C Photo: ExideAir064) is located within the raw material storage building which is represented by Exide as a full enclosure and is controlled by its proprietary baghouse.

The reverberatory furnace charging ram is surrounded by a series of leaf doors with a single ventilation duct which is routed to the Soft Lead Baghouse (Appendix CAA-C Photos: ExideAir087 and ExideAir088). During my December 17, 2009 walkthrough, I observed raw material feed actively accumulating and spilling out of the leaf doors.

The reverberatory furnace slag tap is equipped with a partial hood enclosure that is routed to the Supplemental Ventilation Baghouse. The structure is outfitted with doors to enclose the slag molds, but these doors were left open during the tapping process I observed on December 17, 2009 (Appendix CAA-C Photo: ExideAir084).

The reverberatory furnace lead tap is equipped with a hood enclosure that is routed to the Soft Lead Baghouse (Appendix CAA-C Photo: ExideAir029).

The blast furnace charging skip hoist is situated beneath a partial hood enclosure that is routed to the Supplemental Ventilation Baghouse (Appendix CAA-C Photo: ExideAir079). On December 17, 2009, I observed visible emissions bypassing this hood when the skip hoist was in the down position.

The blast furnace slag tap is equipped with a hood enclosure that includes a housing to enclose the slag mold during tapping and is routed to the Blast Furnace Baghouse (Appendix CAA-C Photo: ExideAir077).

The blast furnace lead tap is with a ventilated hood enclosure which is routed to the Special Alloy Baghouse (Appendix CAA-C Photo: ExideAir081).

Each of the six soft lead refining kettles is equipped with a hood enclosure that is routed to the Soft Lead Baghouse (Appendix CAA-C Photo: ExideAir090).

Each of the five hard lead refining kettles is equipped with a hood enclosure that is routed to the Hard Lead Baghouse (Appendix CAA-C Photo: ExideAir081).

Fugitive Dust Sources

For fugitive dust sources, Subpart X requires that Exide prepare and operate in accordance with a standard operating procedures manual (SOP) that describes in detail the measures that Exide will use to control fugitive dust emissions from the plant roadways, the battery breaking area, the furnace areas, the refining and casting areas, and the material storage and handling areas. These measures must meet or exceed the minimum standards codified in the Maximum Achievable Control Technology (MACT) standard. I collected this document from Exide on December 16, 2009 as part of the document review (Appendix CAA-D pgs 2-3).

I inspected equipment and work practices used to control fugitive dust sources during the facility walkthroughs on December 15 and 17, 2009. Each fugitive dust source was photographed and observed in operation. I also interviewed Exide environmental and operations personnel regarding the operation and testing of fugitive dust control equipment.

According to Exide's fugitive source SOP, the plant roadways are cleaned twice daily by wash down or vacuum sweeper and this cleaning is recorded on the Area Cleaning report. I observed Exide's vacuum sweepers in operation multiple times throughout the inspection (Appendix CAA-C Photo: ExideAir046) and the roadways in the main traffic areas were observed to be wet at all times. However, the paved ramp between the reverberatory furnace and the raw material storage building (Appendix CAA-C Photo: ExideAir068) was not wetted, nor was the area near the blast furnace feed piles (Appendix CAA-C Photo: ExideAir078). During the inspection, I observed forklifts bearing reverberatory furnace slag making regular trips along a route between these two areas (Appendix CAA-C Photo: ExideAir066). Additionally, on December 16, 2009, I reviewed Exide's facility road cleaning logs and, except where Exide had noted in the facility's Title V deviation reports, found no concerns.

According to Exide's fugitive source SOP, the battery breaking area is partially enclosed with floor cleaning twice daily and all process materials in this area are already wet or will be wetted with water sprays. During the inspection, I observed that the battery breaking area was covered by a structure comprised of a roof and two corrugated metal walls (Appendix CAA-C Photo: ExideAir054). Additionally, on December 16, 2009, I reviewed Exide's battery breaking area cleaning logs. As an example, I obtained a copy of the battery breaking area cleaning report for the week of November 30, 2009 to December 6, 2009 (Appendix CAA-D, pages 3-4).

Exide's fugitive source SOP requires partial enclosure and twice daily pavement cleaning for both the blast furnace and the reverberatory furnace areas. Both furnaces are located in partially enclosed areas and the pavement cleaning is recorded in the Furnace Area Cleaning Report. I reviewed these reports on December 16, 2009.

For the refining and casting area, Exide's fugitive source SOP requires partial enclosure and twice daily pavement cleaning. The hard lead and soft lead refining areas are located in a partially enclosed building and the pavement cleaning activities are recorded on the refining and casting cleaning report. I reviewed these reports on December 16, 2009.

Raw materials for the reverberatory furnace are stored in the raw material storage building. According to Exide's fugitive source SOP, the raw material storage building is a full enclosure which is routed to the raw material storage baghouse (EPN 45). Exide measures the doorway in-draft with an anemometer at the north door of the raw material storage building (Appendix CAA-C Photo: ExideAir067) with the east door (Appendix CAA-C Photo: ExideAir066) and the west door (Appendix CAA-C Photo: ExideAir065) in the closed position. The result of this measurement is recorded on the Smelter Ventilation Velocities log (Example - Appendix CAA-D, page 1). A vehicle wash is present adjacent to the west door of the raw material storage building, however, no vehicle wash is present at either the north or east door of the building. At the time of the inspection, I observed a forklift bearing reverberatory furnace slag passing at regular intervals through the raw material storage building using the north and east doors.

Raw material for the blast furnace is stored in the blast furnace area in segregated, covered, piles (Appendix CAA-C Photo: ExideAir078). The blast furnace area is not listed in Exide's fugitive source SOP. Material stored in this area includes metallurgical coke, lead scrap, tin dross, baghouse dust (Appendix CAA-C Photo: ExideAir032), reverberatory furnace slag, and other lead bearing materials. The blast furnace area is partially enclosed and equipped with a wet dust suppression system, however, according to

James Messer, at the time of the inspection, the sprinkler heads for the wet suppression system were clogged and not working. According to Mr. Messer, operations personnel were charged with hand-wetting the storage piles using a nearby water hose. On December 15, 2009 and again on December 17, 2009, I observed that the piles were dry and dust was visibly generated during material handling activities. When I requested records from Mr. Messer documenting wet suppression actions taken by plant personnel to prevent fugitive dust formation, I was told that Exide did not maintain any records of wet suppression.

As noted in the process description, flue dust from the baghouses is transferred by covered, screw conveyor to the reverberatory furnace. During my inspection of the baghouses on December 17, 2009, I observed flue dust from a baghouse screw conveyor actively spilling from an inspection hatch (Appendix CAA-C Photo: ExideAir071). This spill was also witnessed by Fred Ganster who immediately notified operations personnel. Following notification the operations personnel shutdown the screw conveyor and determined that the cause of the spill was bridging downstream in the conveyor. The bridging was cleared and the screw conveyor returned to normal operation. The spilled flue dust was collected by operations personnel using Exide's central vacuum system.

Baghouse Monitoring Requirements

Subpart X requires secondary lead smelters to prepare and operate in accordance with a SOP that describes in detail procedures for inspection, maintenance, and bag leak detection and corrective action plans for all baghouses that are used to control process, process fugitive, or fugitive dust emissions. Exide manages its baghouses according to its "Standard Operating Procedures for Baghouse NESHAP Compliance" (Appendix CAA-D, pages 6-13) dated August 15, 2006. To demonstrate compliance with the requirements of this document Exide maintains daily, weekly, monthly, and quarterly inspection records for each of its baghouses (Examples Appendix CAA-D, pages 14-50). As part of my December 16, 2009 document review, I evaluated a selection of these reports. Additionally, Exide is required to record the time and cause of each baghouse leak detection system alarm. Exide maintains a monthly record of baghouse alarm occurrences (Example Appendix CAA-D, pages 51-52) and includes these records as part of its Subpart X semi-annual report.

40 CFR Part 70 - Federal Operating Permit O1649

As a secondary lead smelter subject to 40 CFR 63 Subpart X, Exide is required have a Title V operating permit. Exide currently operates under the authorization of Federal Operating Permit O1649 issued by the Texas Commission on Environmental Quality (TCEQ) on April 27, 2009. I requested and received a copy of this permit from James Messer on December 16, 2009 (Appendix CAA-F). In addition to restating the requirements of 40 CFR 60 Subpart L and 40 CFR 63 Subpart X, the permit requires compliance with specific obligations enumerated in the Texas Administrative Code.

Specific to lead emission points at Exide, the Title V permit requires Exide to conduct quarterly visible emissions assessments. On December 16, 2009, I reviewed records of these assessments (Example Appendix CAA-D, page 53).

40 CFR Part 52 - Permit 1147A

Exide operates its battery breaking, lead smelting, and lead refining areas under the authorization of Permit 1147A issued by the TCEQ on January 14, 2003. I requested and received a copy of this permit from James Messer on December 16, 2009 (Appendix CAA-G). In addition to restating the requirements of 40 CFR 60 Subpart L and 40 CFR 63 Subpart X, the permit requires compliance with specific limitations and obligations enumerated in the permit.

Specific to lead emission points at Exide, Permit 1147A establishes limits on the hourly lead feed rates to the individual furnaces, annual combined lead feed rates to the furnaces, and daily and annual molten lead production rates. Hourly, daily, and annual production records are maintained by Exide on-site. As part of the December 16, 2009 document review I identified those records that would indicate compliance with these limits, but did not conduct a thorough review (Example Appendix CAA-D, pages 54-64).

40 CFR Part 52 - Permit 3048A

Exide operates its lead oxide production area under the authorization of Permit 3048A issued by the TCEQ on June 8, 2006. I requested and received a copy of this permit from James Messer on December 16, 2009 (Appendix CAA-H). The permit enumerates operational limitations, work practices, plant design requirements, and recordkeeping provisions that apply to the facility's lead oxide production.

The permit establishes limits on lead oxide production on an hourly and annual basis. Compliance with these limits can be determined using Exide's lead oxide production records. As part of the December 16, 2009 document review I identified those records that would indicate compliance with these limits, but did not conduct a thorough review (Example Appendix CAA-D, page 54).

Additionally, the permit requires baghouse inspection and maintenance on a daily, weekly, and monthly basis. As part of the December 16, 2009 document review I identified those records that would indicate compliance with this requirement, but did not conduct a thorough review (Example Appendix CAA-D, pages 65-79).

AREAS OF CONCERN

This section provides a synopsis of those issues identified during the inspection that may require further investigation or follow-up. A more detailed narrative pertaining to each item is provided in the previous sections of the report.

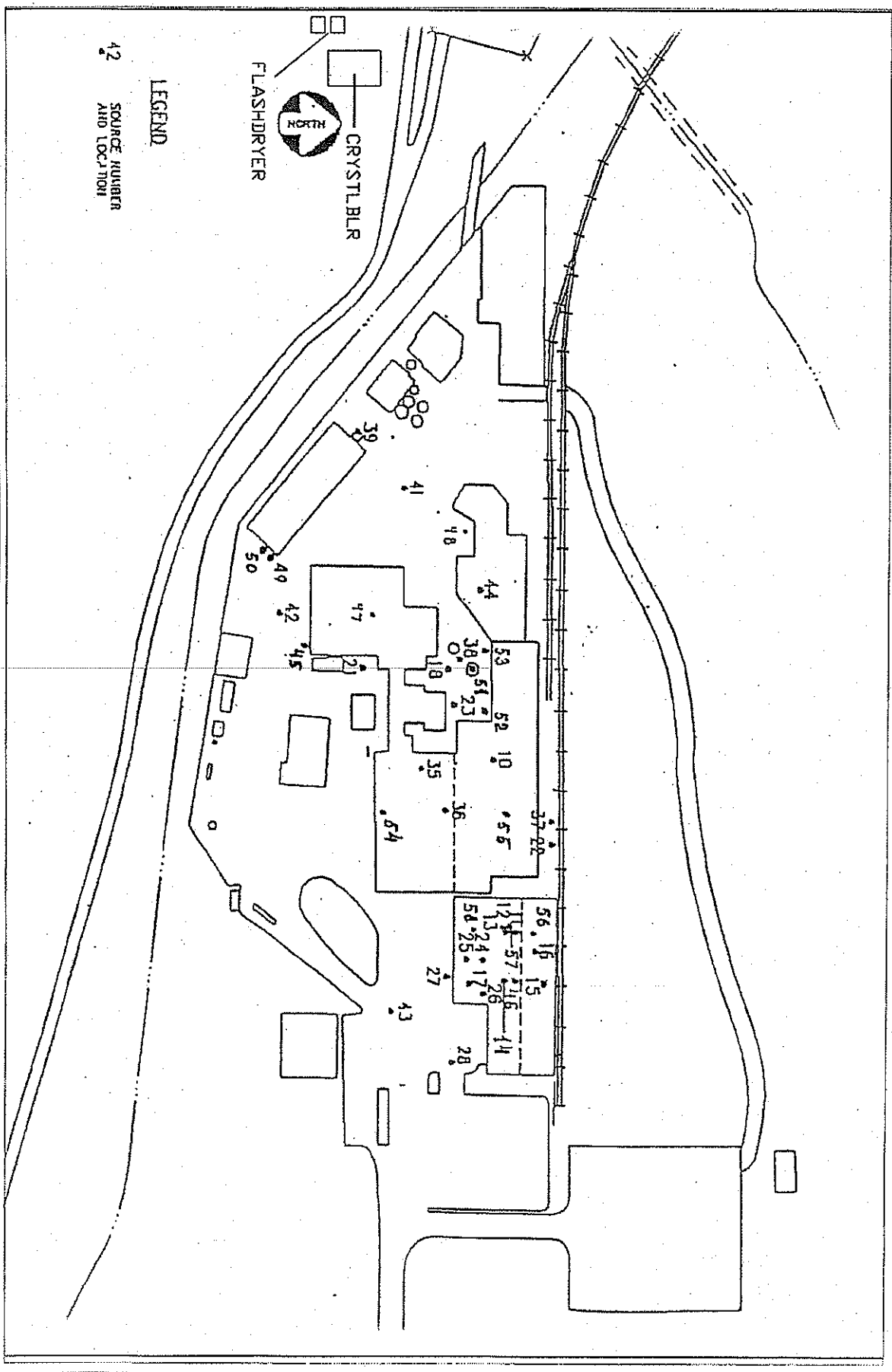
- Although conditions of Exide's permits and the federal standards require Exide to conduct visible emissions observations, none of the personnel at the plant have visible emissions training.
- Exide provided measurements of the face velocity at all of its hood enclosures except for the enclosures for the slag tap of the blast furnace and the charging areas of the reverberatory and blast furnaces.
- Additional review of the design and operation of the fugitive dust collection hoods used for controlling process fugitive emissions at Exide may be necessary to determine the facility's compliance with Subpart X.
- Additional evaluation of Exide's fugitive dust SOP may be required to ensure that it includes all regulatory requirements and is of sufficient detail to adequately represent the current design and operation of fugitive sources at the facility.
- Doorway in-draft measurements for the raw material storage building are conducted with all doors in the closed position, except for the north door. However, the east and west doors may be open during the course of normal operations and it would therefore be prudent to take doorway in-draft measurements with these doors open to ensure that the ventilation

system is sufficient to maintain the building at negative pressure relative to the ambient conditions.

- At the time of the inspection, insufficient wet suppression was applied to the storage piles in the blast furnace area to prevent fugitive dust formation. Additionally, no record of wet suppression in this area was maintained by Exide. Further, the automated sprinkler system installed for the purpose of providing wet suppression to the storage piles was not functioning.

Appendix CAA-A

Exide Emission Point Map and Emission Point Summary



SAGE ENVIRONMENTAL CONSULTING

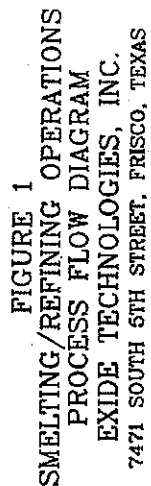
| | |
|--------------------|--------------------------|
| Drawing: PlotPlan | FIGURE F-1 |
| Revision #: 1 | Exide Technologies, Inc. |
| Date: March 2009 | Frisco Plant |
| Project #: 12-1-72 | 2008 EMISSION INVENTORY |

Table 1 - Emission Point Summary

| EPN | Description | Emissions Reported |
|------------|--|--|
| 10 | Blast Furnace Fugitives | PM, Lead |
| 11 | Oxide Reactor 3 Baghouse | PM, Lead |
| 12 | Oxide Reactor 2 Baghouse | PM, Lead |
| 13 | Oxide Reactor 1 Baghouse | PM, Lead |
| 14 | Oxide Hygiene Baghouse | PM, Lead |
| 15 | North Oxide Hammermill Baghouse | PM, Lead |
| 16 | Oxide Reactor 4 Baghouse | PM, Lead |
| 17 | South Oxide Hammermill Baghouse | PM, Lead |
| 18 | Hard Lead Baghouse | PM, Lead, VOC, SO ₂ , NO _x , CO |
| 21 | Soft Lead Baghouse | PM, Lead, VOC, H ₂ SO ₄ , SO ₂ , NO _x , CO |
| 22 | Special Alloys Baghouse | PM, Lead, VOC, SO ₂ , NO _x , CO |
| 23 | Smelter Central Vacuum Baghouse | PM, Lead |
| 24 | Oxide Reactor 5 Baghouse | PM, Lead |
| 25 | Oxide Reactor 6 Baghouse | PM, Lead |
| 26 | Oxide Central Vacuum Baghouse | PM, Lead |
| 27 | West Truck Loading Fugitives | PM |
| 28 | East Truck Loading Fugitives | PM |
| 35 | Reverberatory Furnace Fugitives | PM, Lead |
| 36 | Casting Area Fugitives | PM, Lead |
| 37 | Supplemental Ventilation Baghouse | PM, Lead, VOC, H ₂ SO ₄ , SO ₂ , NO _x , CO |
| 38 | Metallurgical Scrubber | PM, Lead, VOC, H ₂ SO ₄ , SO ₂ , NO _x , CO |
| 39 | Slag Crush and Screen Baghouse | PM, Lead |
| 41 | Road Traffic West Fugitives | PM, Lead |
| 42 | Road Traffic South Fugitives | PM, Lead |
| 43 | Road Traffic East Fugitives | PM, Lead |
| 44 | Covered Material Storage Area | PM, Lead |
| 45 | Raw Material Storage Building Baghouse | PM, Lead |
| 46 | Oxide Building Fugitives | PM, VOC, H ₂ SO ₄ , SO ₂ , NO _x , CO |
| 47 | Raw Material Storage Building Fugitives | PM, Lead |
| 48 | Battery Breaker Scrubber | PM, Lead, H ₂ SO ₄ |
| 48FUG | Battery Breaker Fugitives | H ₂ SO ₄ |
| 49 | Reagent Silo #1 Baghouse | PM |
| 50 | Reagent Silo #2 Baghouse | PM |
| 51 | Sodium Bicarbonate Storage Silo Filter | PM |
| 52 | Slag Handling Fugitives | PM, Lead |
| 53 | Material Handling Fugitives | PM, Lead |
| 54 | Soft Lead Kettle Heating Stack | PM, VOC, SO ₂ , NO _x , CO |
| 55 | Hard Lead and Special Alloy Kettle Heating Stack | PM, VOC, SO ₂ , NO _x , CO |
| 56 | Oxide Process Combustion Sources 1 | PM, VOC, SO ₂ , NO _x , CO |
| 57 | Oxide Process Combustion Sources 2 | PM, VOC, SO ₂ , NO _x , CO |
| 58 | Oxide Process Combustion Sources 3 | PM, VOC, SO ₂ , NO _x , CO |
| DT | Diesel Tank | VOC |
| D-1 | Degreasers | VOC |
| CRYSTLBLR | Crystallizer Boiler | PM, VOC, SO ₂ , NO _x , CO |
| FLASHDRYER | Crystallizer Flash Dryer | PM, VOC, SO ₂ , NO _x , CO |

Appendix CAA-B

Exide Process Flow Diagrams



SMELTING/REFINING OPERATIONS

PROCESS FLOW DIAGRAM

EXIDE TECHNOLOGIES, INC.

7471 SOUTH 5TH STREET, FRISCO, TEXAS

Drawing: PFD.dwg

Revision #: 4

Date: March 2009

Project: 12-01-72

SAGE

ENVIRONMENTAL CONSULTING

Sage Environmental Consulting, L.P.
March 2009

Exide Technologies
P:\Projects\Exide\Frisc\12-01-72 2008 EAPFD.dwg

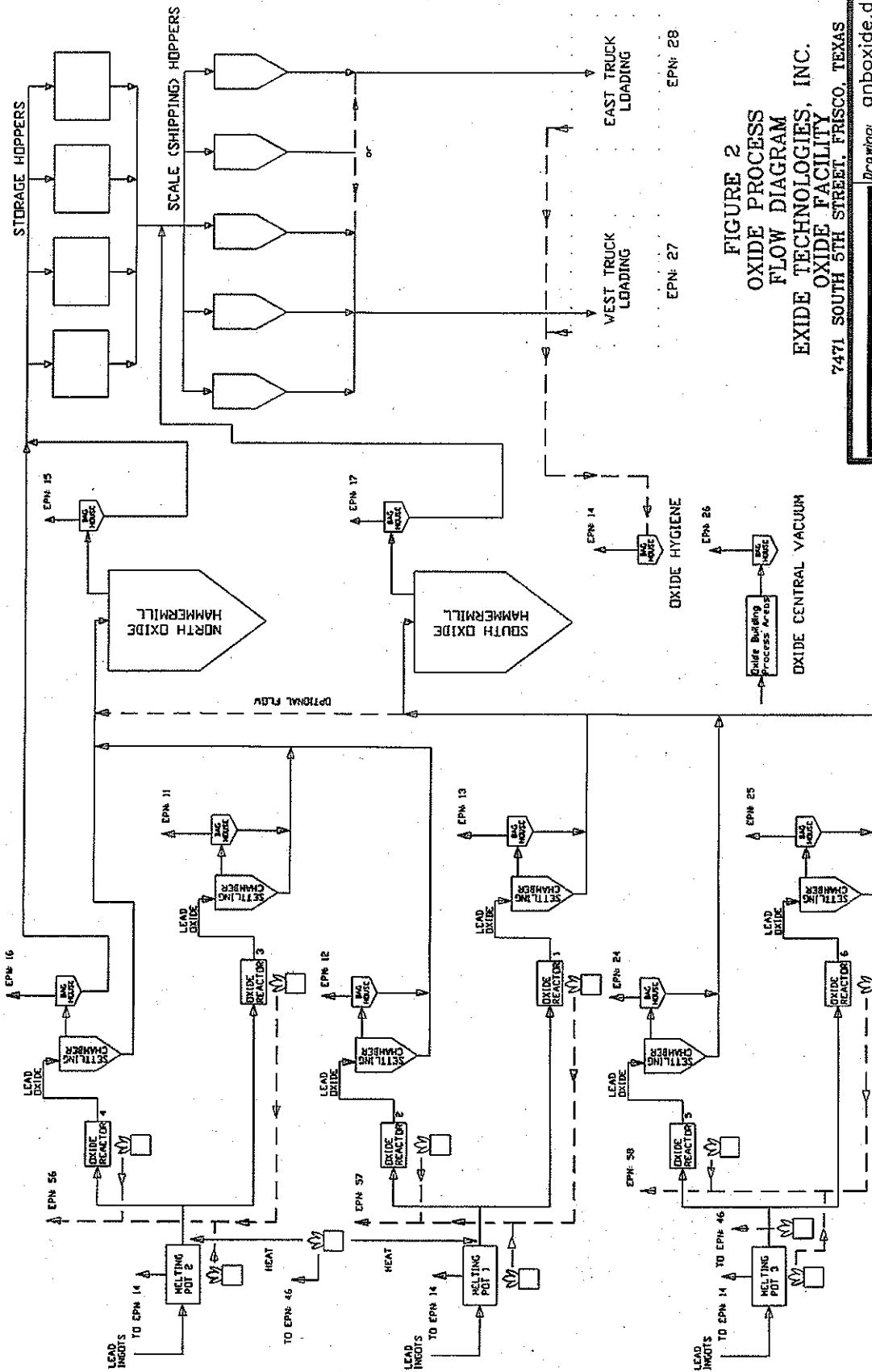


FIGURE 2
OXIDE PROCESS
FLOW DIAGRAM
EXIDE TECHNOLOGIES, INC.
OXIDE FACILITY
7471 SOUTH 5TH STREET, FRISCO, TEXAS

| | |
|-----------------------|--|
| Drawing: gnboxide.dwg | |
| Revision #: 3a | |
| Date: March 2009 | |
| Project: 12-01-72 | |

SAGE
ENVIRONMENTAL CONSULTING
"Friendly Service, No Surprises!"

Appendix CAA-C

Exide Inspection Photographs



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,547

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

13:22:49

Is Date an Estimate?

No

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir001.jpg 1,457,189

Reverb feed dryer baghouse at raw material storage building. Shares emission point with the Soft Lead Baghouse (EPN 21)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,548

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

13:22:56

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir002.jpg 1,498,263

Raw Material Storage Building (EPN 45)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,549

Photographer or Source of Picture

Type of Camera

Picture Date

Type of Picture

Facility Name

Address or Location

State

Programmatic ID

FRS ID

John Penland

OLYMPUS DIGITAL CAMERA u720SW,S720SW

12/15/2009

Time

13:26:42

Is Date an Estimate?

Exide Technologies - Frisco Plant

7471 South 5th St.

TX

City

Frisco

County

Collin

4808500001

Type

AIRS/AFS

110000456104

ICIS ID



Description

ExideAir003.jpg 1,485,941

Reagent Silos #1 (Portland Cement) (EPN 49) and #2 (FreeFlow100) (EPN 50) on the slag treatment building



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,550

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

13:28:07

Is Date an Estimate?

☐

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir004.jpg 1,372,287

Slag treatment loadout baghouse (No EPN)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,551

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

13:34:05

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir005.jpg 1,432,509

Entrance to Slag Treatment building (EPN 52). Note label.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,552

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

13:37:35

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir006.jpg 1,493,101

Interior of Slag treatment building. Front end loader, blast furnace slag storage piles, feed hopper, slag jaw crusher.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,553

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

13:37:47

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir007.jpg 1,380,046

Blast furnace slag screener.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,554

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

13:37:55

Is Date an Estimate?

☐

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir008.jpg 1,466,950

Blast furnace slag treatment load-out hopper.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,555

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

13:38:04

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir009.jpg 1,470,019

Blast furnace slag treatment load-out and reagent mixing truck.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,556

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

13:50:32

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir010.jpg 1,297,139

Battery Breaker Scrubber (EPN 48).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,557

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

13:51:25

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir011.jpg 1,230,425

Blast furnace slag treatment Slag Crush and Screen Baghouse (EPN 39)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,558

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

13:51:53

Is Date an Estimate?

☐

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir012.jpg 1,441,542

Blast furnace slag treatment Slag Crush and Screen Baghouse (EPN 39)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,559

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:05:09

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir013.jpg 1,417,810

Covered Material Storage Area (EPN 44)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,560

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:10:45

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir014.jpg 1,526,341

Interior of Covered Material Storage Area (EPN 44).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,561

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:21:17

Is Date an Estimate?

☐

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir015.jpg 1,447,532

Outlet from battery breaker hammer mill. Hood inlets for Battery Breaker Scrubber (EPN 48).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,562

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:22:12

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir016.jpg 1,314,843

Natural gas-fired plastic chip dryer. (No EPN)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,563

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:22:58

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir017.jpg 1,424,995

Battery Breaker Scrubber (EPN 48).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,564

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:23:26

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir018.jpg 1,366,051

Battery Breaker Scrubber (EPN 48).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,565

Photographer or Source of Picture

Type of Camera

Picture Date

Type of Picture

Facility Name

Address or Location

State

Programmatic ID

FRS ID

John Penland

OLYMPUS DIGITAL CAMERA u720SW,S720SW

12/15/2009

Time

14:25:20

Is Date an Estimate?

Exide Technologies - Frisco Plant

7471 South 5th St.

TX

City

Frisco

County

Collin

4808500001

Type

AIRS/AFS

110000456104

ICIS ID



Description

ExideAir019.jpg 1,501,952

Battery breaker material bailer.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,566

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:29:31

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir020.jpg 1,503,301

Feed hopper for raw material shredder in raw material storage building (EPN 47).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,567

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:29:50

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir021.jpg 1,550,948

Raw material storage building baghouse (EPN 45) inlets



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,568

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:30:37

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir022.jpg 1,503,108

Reverberatory furnace feed dryer



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,569

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:30:46

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir023.jpg 1,536,392

Reverberatory feed dryer and feed hopper with hood vented to raw material storage building baghouse (EPN 45).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,570

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:32:09

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir024.jpg 1,445,215

Feed hopper with hood vented to raw material storage building baghouse (EPN 45).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,571

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:39:44

Is Date an Estimate?

☐

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir025.jpg 1,352,712

Reverberatory Furnace Baghouse vented to Metallurgical Scrubber(EPN 38).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,572

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:41:50

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir026.jpg 1,416,885

Reverberatory furnace showing slag tap and rabble door with hood enclosures vented to supplemental ventilation baghouse (EPN 37).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,573

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:42:08

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir027.jpg 1,352,511

Reverberatory furnace feed ram enclosure vented to soft lead baghouse (EPN 21).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,574

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:44:17

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

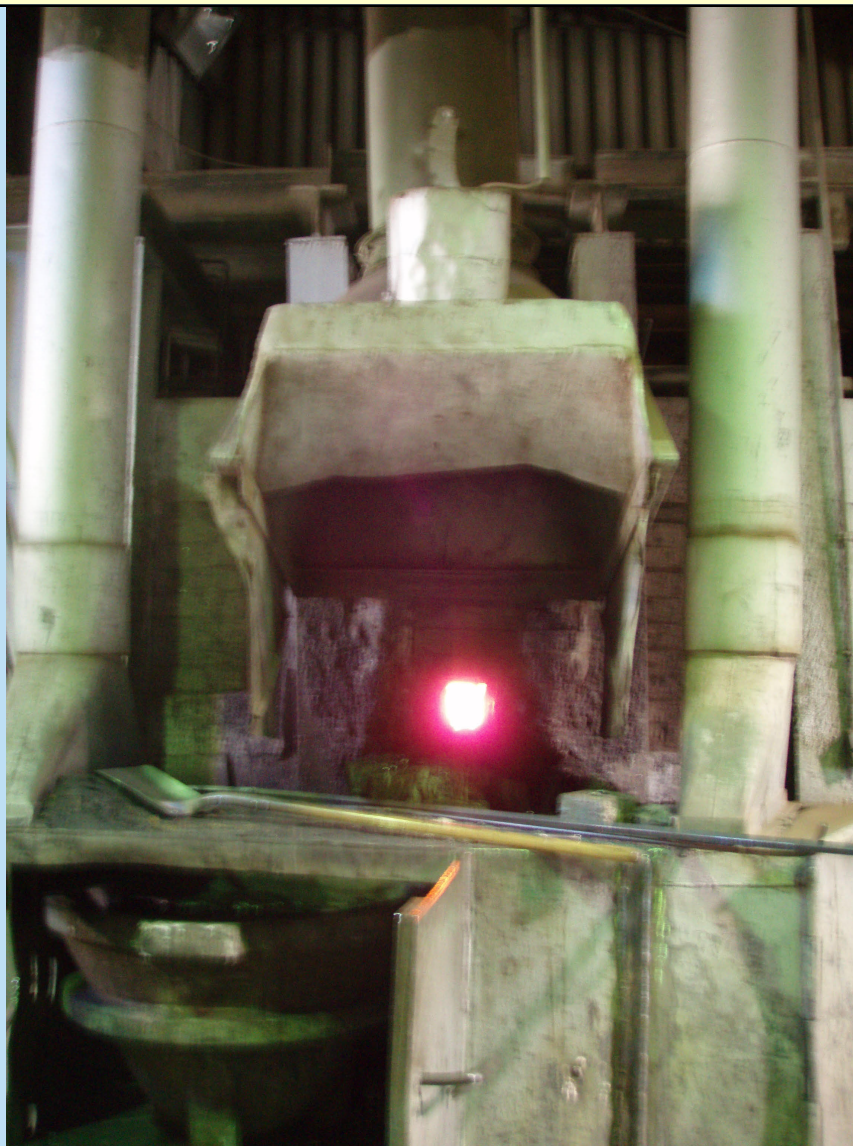
Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir028.jpg 1,511,421

Reverberatory furnace slag tap enclosure hood vented to supplemental ventilation baghouse (EPN 37).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,575

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:46:26

Is Date an Estimate?

☐

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir029.jpg 1,358,550

Reverberatory furnace lead tap and soft lead refining kettle vented to soft lead baghouse (EPN 21).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,576

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:51:43

Is Date an Estimate?

☐

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir030.jpg 1,400,966

Hog casting area.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,577

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:57:53

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir031.jpg 1,425,696

Supplemental ventilation baghouse flue dust bin in blast furnace feed storage area.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,578

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:58:06

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir032.jpg 1,524,832

Supplemental ventilation baghouse flue dust bin in blast furnace feed storage area.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,579

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

14:58:56

Is Date an Estimate?

☐

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir033.jpg 1,418,378

Blast Furnace Baghouse vented to Metallurgical Scrubber (EPN 38) and Hard Lead Baghouse (EPN 18)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,580

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

15:01:06

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir034.jpg 1,207,408

Blast furnace slag tap and enclosure hood vented to blast furnace baghouse.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,581

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

15:01:16

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir035.jpg 1,435,917

Blast furnace slag tap and enclosure hood vented to blast furnace baghouse.



Official Photograph Log

Picture Number

11,582

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

15:04:57

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir036.jpg 1,363,211

Lead oxide Barton Pot reactor.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,583

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

15:07:00

Is Date an Estimate?

☐

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir037.jpg 1,329,436

Lead oxide north oxide hammer mill baghouse (EPN 15)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,584

Photographer or Source of Picture

John Penland

Type of Camera

OLYMPUS DIGITAL CAMERA u720SW,S720SW

Picture Date

12/15/2009

Time

15:08:03

Is Date an Estimate?

☐

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir038.jpg 1,400,246

Lead Oxide Hygiene Baghouse (EPN 14)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,586

Photographer or Source of Picture

Type of Camera

Picture Date

Type of Picture

Facility Name

Address or Location

State

Programmatic ID

FRS ID

John Penland

12/17/2009

Time 08:23:42

Is Date an Estimate?

Exide Technologies - Frisco Plant

7471 South 5th St.

TX City Frisco

County Collin

4808500001

Type AIRS/AFS

110000456104

ICIS ID



Description

ExideAir039.jpg

120,720

Sodium Sulfate Load-out vented to Crystallizer baghouse (No EPN)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,587

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 08:31:19

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir040.jpg

124,181

Crystallizer boiler (EPN CRYSTLBLR)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,588

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 09:06:28

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir041.jpg

149,237

Crystallizer Flash Dryer (EPN FLASHDRYER) vent



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,589

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 09:10:21

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir042.jpg

102,167

Crystallizer baghouse (No EPN)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,590

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 09:23:41

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir043.jpg

93,895

Crystallizer Boiler (EPN CRYSTLBLR) vent



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,591

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 09:29:42

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir044.jpg

85,636

Exide Technologies Site Overview



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 10:02:22

Is Date an Estimate?

Picture Number

11,592

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir045.jpg

98,243

Exide pavement cleaning



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,593

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 10:05:32

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir046.jpg

107,613

Interior of Slag treatment building (EPN 52). Front end loader, blast furnace slag storage piles, feed hopper, slag jaw crusher.



Picture Number

11,594

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 10:07:12

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir047.jpg

139,116

Ventilation hood at slag jaw crusher vented to Slag Crush and Screen Baghouse (EPN 39)



Official Photograph Log

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 10:09:06

Is Date an Estimate?

Picture Number

11,595

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir048.jpg

107,612

Slag jaw crusher



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 10:10:14

Is Date an Estimate?

Picture Number

11,596

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir049.jpg

117,004

Slag screening vented to Slag Crush and Screen Baghouse (EPN 39).



Official Photograph Log

Picture Number

11,597

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

10:12:13

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir050.jpg

88,616

Blast furnace slag treatment load-out and reagent mixing truck vented to Slag Treatment load-out baghouse (No EPN).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,598

Photographer or Source of Picture

Type of Camera

Picture Date

Type of Picture

Facility Name

Address or Location

State

Programmatic ID

FRS ID

John Penland

12/17/2009

Time 10:14:44

Is Date an Estimate?

Exide Technologies - Frisco Plant

7471 South 5th St.

TX

City Frisco

County

Collin

4808500001

Type AIRS/AFS

110000456104

ICIS ID



Description

ExideAir051.jpg

76,560

Blast furnace slag treatment building (EPN 52)



Official Photograph Log

Picture Number

11,599

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

10:17:15

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir052.jpg

98,669

Slag treatment reagent silos # 1 (EPN 49) and #2 (EPN 50) and Slag Treatment Load-out baghouse (No EPN).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,600

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 10:21:36

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir053.jpg

119,596

Slag Crush and Screen Baghouse (EPN 39)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,601

Photographer or Source of Picture

Type of Camera

Picture Date

Type of Picture

Facility Name

Address or Location

State

Programmatic ID

FRS ID

John Penland

12/17/2009

Time 10:23:40

Is Date an Estimate?

Exide Technologies - Frisco Plant

7471 South 5th St.

TX

City Frisco

County

Collin

4808500001

Type AIRS/AFS

110000456104

ICIS ID



Description

ExideAir054.jpg

107,605

Battery Breaking Area (EPN 48FUG)



Official Photograph Log

Picture Number

11,602

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 10:26:26

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir055.jpg

72,966

Battery Breaker Scrubber (EPN 48)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,603

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

10:28:11

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir056.jpg

102,738

Natural gas-fired plastic chip dryer. (No EPN)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,604

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 10:29:53

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir057.jpg

119,352

Battery Breaker Scrubber (EPN 48) inlet



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,605

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 10:31:12

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir058.jpg

135,983

Battery Breaker gravity separation vat and inlets for Battery Breaker Scrubber (EPN 48)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,606

Photographer or Source of Picture

Type of Camera

Picture Date

Type of Picture

Facility Name

Address or Location

State

Programmatic ID

FRS ID

John Penland

12/17/2009

Time 10:32:50

Is Date an Estimate?

Exide Technologies - Frisco Plant

7471 South 5th St.

TX City Frisco

County Collin

4808500001

Type AIRS/AFS

110000456104

ICIS ID



Description

ExideAir059.jpg

143,748

Battery Breaker hammer mill



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,607

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 10:38:39

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir060.jpg

81,413

Battery Breaker Scrubber (EPN 48) vent.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,608

Photographer or Source of Picture

Type of Camera

Picture Date

Type of Picture

Facility Name

Address or Location

State

Programmatic ID

FRS ID

John Penland

12/17/2009

Time 10:40:57

Is Date an Estimate?

Exide Technologies - Frisco Plant

7471 South 5th St.

TX

City Frisco

County

Collin

4808500001

Type AIRS/AFS

110000456104

ICIS ID



Description

ExideAir061.jpg

109,013

Raw Material Storage Building Baghouse (EPN 45)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,609

Photographer or Source of Picture

Type of Camera

Picture Date

Type of Picture

Facility Name

Address or Location

State

Programmatic ID

FRS ID

John Penland

12/17/2009

Time 10:45:17

Is Date an Estimate?

Exide Technologies - Frisco Plant

7471 South 5th St.

TX

City Frisco

County

Collin

4808500001

Type AIRS/AFS

110000456104

ICIS ID



Description

ExideAir062.jpg

117,543

Reverb Feed Dryer Baghouse vented to Soft Lead Baghouse Stack (EPN 21)



Official Photograph Log

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

10:48:11

Is Date an Estimate?

☐

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID

Picture Number

11,610



Description

ExideAir063.jpg

72,960

Reverb Feed Dryer Feed Hopper



Official Photograph Log

Picture Number

11,611

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 10:55:09

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir064.jpg

87,761

Reverb Feed Dryer.



Official Photograph Log

Picture Number

11,612

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

10:56:47

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir065.jpg

89,943

Raw material Storage building West door.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,613

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 10:57:36

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir066.jpg

106,700

Raw material storage building east door with forklift bearing reverberatory furnace slag.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,614

Photographer or Source of Picture

Type of Camera

Picture Date

Type of Picture

Facility Name

Address or Location

State

Programmatic ID

FRS ID

John Penland

12/17/2009

Time 10:58:37

Is Date an Estimate?

Exide Technologies - Frisco Plant

7471 South 5th St.

TX

City Frisco

County

Collin

4808500001

Type AIRS/AFS

110000456104

ICIS ID



Description

ExideAir067.jpg

112,519

Raw material storage building north door. Anemometer measurements made at this location.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,615

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

11:02:12

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir068.jpg

110,493

Reverberatory furnace feed conveyors.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 11:04:17

Is Date an Estimate?

Picture Number

11,616

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir069.jpg

67,001

Reverberatory furnace baghouse magnehelic panel.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,617

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

11:12:19

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir070.jpg

127,252

Metallurgical scrubber (EPN 38)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 11:15:33

Is Date an Estimate?

Picture Number

11,618

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir071.jpg

123,229

Active baghouse dust leak from screw conveyor system caused by bridging in a downstream conveyor.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,619

Photographer or Source of Picture

Type of Camera

Picture Date

Type of Picture

Facility Name

Address or Location

State

Programmatic ID

FRS ID

John Penland

12/17/2009

Time 11:26:20

Is Date an Estimate?

Exide Technologies - Frisco Plant

7471 South 5th St.

TX

City Frisco

County

Collin

4808500001

Type AIRS/AFS

110000456104

ICIS ID



Description

ExideAir072.jpg

111,204

Smelter central vacuum baghouse (EPN 23)



Official Photograph Log

Picture Number

11,620

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

11:26:38

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir073.jpg

82,020

Blast furnace baghouse magnetahelic panel



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,621

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

11:27:48

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir074.jpg

104,119

Exide employee vacuuming baghouse area to control fugitive dust.



Official Photograph Log

Picture Number

11,622

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 13:23:29

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir075.jpg

84,306

Soft Lead Baghouse (EPN 21)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,623

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 13:26:46

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir076.jpg

59,498

Hard Lead Baghouse (EPN 18)



Official Photograph Log

Picture Number

11,624

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

13:27:02

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir077.jpg

77,525

Blast Furnace Slag Tap and enclosure vented to Blast furnace baghouse



Official Photograph Log

Picture Number

11,625

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

13:27:32

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir078.jpg

144,108

Blast furnace feed storage area and dust suppression system (non-functional).



Official Photograph Log

Picture Number

11,626

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

13:32:41

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir079.jpg

66,878

Blast furnace feed skip hoist area and ventilation hood vented to Supplemental ventilation baghouse (EPN 37). Note circumvention of hood.



Picture Number

11,627

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 13:37:35

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir080.jpg

130,179

Blast furnace lead tap and hood enclosures vented to Special Alloy baghouse (EPN 22)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,628

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

13:45:59

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir081.jpg

710,204

Hard Lead refining kettles vented to Hard Lead Baghouse (EPN 18).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,629

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 13:48:23

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir082.jpg

632,987

Blast furnace cross bins vented to Supplemental Ventilation baghouse (EPN 37)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,630

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

13:51:22

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir083.jpg

600,147

Reverberatory slag tap enclosure vented to Supplemental Ventillation Baghouse (EPN 37).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,631

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 13:51:32

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir084.jpg

643,753

Reverberatory slag tap enclosure vented to Supplemental Ventillation Baghouse (EPN 37).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

| | | | | |
|--------------------------|-----------------------------------|-----------------------------------|---------|----------|
| Picture Number 11,632 | Photographer or Source of Picture | John Penland | | |
| | Type of Camera | | | |
| | Picture Date | 12/17/2009 | Time | 13:52:54 |
| | | Is Date an Estimate? | | |
| | Type of Picture | | | |
| | Facility Name | Exide Technologies - Frisco Plant | | |
| | Address or Location | 7471 South 5th St. | | |
| | State | TX | City | Frisco |
| | | | County | Collin |
| Programmatic ID | 4808500001 | | Type | AIRS/AFS |
| FRS ID | 110000456104 | | ICIS ID | |



Description

ExideAir085.jpg 572,675

Rabble door hood enclosure vented to supplemental ventilation baghouse (EPN 37). Reverberatory furnace slag cooling area.



Official Photograph Log

Picture Number

11,633

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 13:53:01

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir086.jpg

620,783

Rabble door hood enclosure vented to supplemental ventilation baghouse (EPN 37). Reverberatory furnace slag cooling area.



Official Photograph Log

Picture Number
11,634

Photographer or Source of Picture

Type of Camera

Picture Date

Type of Picture

Facility Name

Address or Location

State

Programmatic ID

FRS ID

John Penland

12/17/2009

Time 13:54:29

Is Date an Estimate?

Exide Technologies - Frisco Plant

7471 South 5th St.

TX

City Frisco

County

Collin

4808500001

Type AIRS/AFS

110000456104

ICIS ID



Description

ExideAir087.jpg

534,288

Reverberatory feed ram enclosure vented to Soft Lead Baghouse (EPN 21)



Official Photograph Log

Picture Number

11,635

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

13:55:16

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir088.jpg

556,683

Reverberatory feed ram enclosure vented to Soft Lead Baghouse (EPN 21). Reverberatory furnace feed observed collecting outside of enclosure.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,636

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

13:58:48

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir089.jpg

683,766

Reverberatory furnace lead tap vented to soft lead baghouse (EPN 21).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,637

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 13:59:18

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir090.jpg

845,971

Soft lead refining kettles vented to soft lead baghouse (EPN 21)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,638

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

14:01:58

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir091.jpg

727,712

Lead casting area hog casting.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,639

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

14:04:07

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir092.jpg

755,728

Soft lead pig caster vented to soft lead baghouse (EPN 21).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Picture Number

11,640

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

14:06:21

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir093.jpg

669,482

Lead oxide area floor sweeping.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

| | | | | | |
|--------------------------|-----------------------------------|-----------------------------------|--------|----------|----------|
| Picture Number 11,641 | Photographer or Source of Picture | John Penland | | | |
| | Type of Camera | | | | |
| | Picture Date | 12/17/2009 | Time | 14:06:59 | |
| | Type of Picture | Is Date an Estimate? | | | |
| | Facility Name | Exide Technologies - Frisco Plant | | | |
| | Address or Location | 7471 South 5th St. | | | |
| | State | TX | City | Frisco | |
| | | | County | Collin | |
| | Programmatic ID | 4808500001 | | Type | AIRS/AFS |
| | FRS ID | 110000456104 | | ICIS ID | |



Description

ExideAir094.jpg 755,966

Lead oxide Barton pot reactors each vented to an individual baghouse (EPNs 11, 12, 13, 16, 24, and 25)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,642

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time

14:13:16

Is Date an Estimate?

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

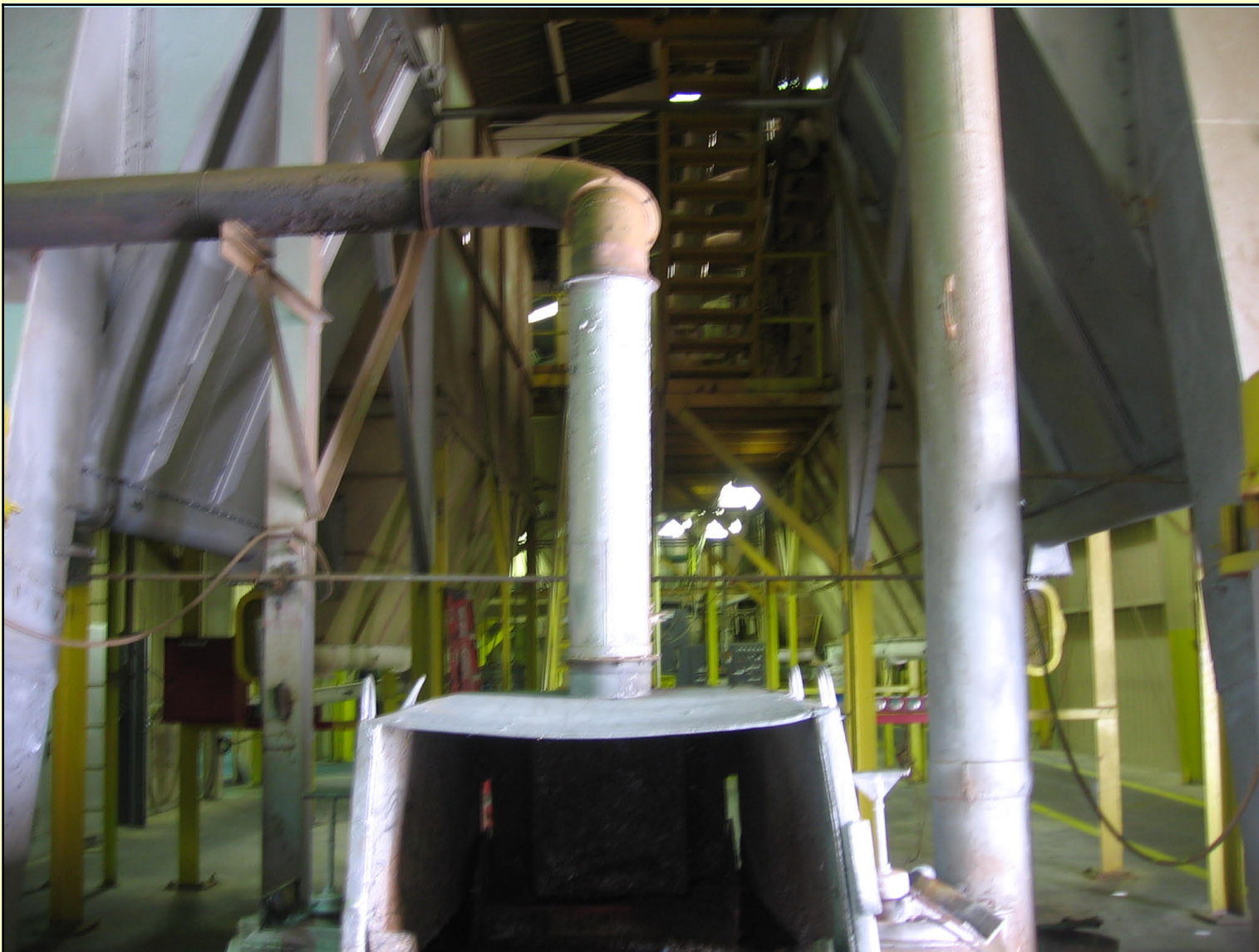
Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir095.jpg

673,038

Melting kettle vented to Oxide hygiene baghouse (EPN 14)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,643

Photographer or Source of Picture

Type of Camera

Picture Date

Type of Picture

Facility Name

Address or Location

State

Programmatic ID

FRS ID

John Penland

12/17/2009

Time 14:14:32

Is Date an Estimate?

Exide Technologies - Frisco Plant

7471 South 5th St.

TX City Frisco

County Collin

4808500001

Type AIRS/AFS

110000456104

ICIS ID



Description

ExideAir096.jpg

614,475

Lead oxide hammermill vented to South Oxide Hammermill Baghouse (EPN 17)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 14:16:01

Is Date an Estimate?

Picture Number

11,644

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir097.jpg

664,991

Oxide central vacuum baghouse (EPN 26)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Photographer or Source of Picture John Penland

Type of Camera

Picture Date 12/17/2009

Time 14:17:11

Is Date an Estimate?

Picture Number

11,645

Type of Picture

Facility Name Exide Technologies - Frisco Plant

Address or Location 7471 South 5th St.

State TX City Frisco

County Collin

Programmatic ID 4808500001

Type AIRS/AFS

FRS ID 110000456104

ICIS ID



Description

ExideAir098.jpg

769,164

Oxide hygiene baghouse (EPN 14)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

| | | | | |
|--------------------------|-----------------------------------|-----------------------------------|---------------|---|
| Picture Number 11,646 | Photographer or Source of Picture | John Penland | | |
| | Type of Camera | | | |
| | Picture Date | 12/17/2009 | Time 14:17:53 | Is Date an Estimate? <input type="checkbox"/> |
| | Type of Picture | | | |
| | Facility Name | Exide Technologies - Frisco Plant | | |
| | Address or Location | 7471 South 5th St. | | |
| | State | TX | City Frisco | County Collin |
| | Programmatic ID | 4808500001 | Type AIRS/AFS | |
| | FRS ID | 110000456104 | ICIS ID | |



Description

ExideAir099.jpg

561,255

Lead oxide product tank vents and building roof vent



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Photographer or Source of Picture

John Penland

Type of Camera

Picture Date

12/17/2009

Time 14:21:18

Is Date an Estimate?

Picture Number

11,647

Type of Picture

Facility Name

Exide Technologies - Frisco Plant

Address or Location

7471 South 5th St.

State

TX

City

Frisco

County

Collin

Programmatic ID

4808500001

Type

AIRS/AFS

FRS ID

110000456104

ICIS ID



Description

ExideAir100.jpg

718,126

Special Alloys Baghouse (EPN 22)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Official Photograph Log

Picture Number
11,648

Photographer or Source of Picture

Type of Camera

Picture Date

Type of Picture

Facility Name

Address or Location

State

Programmatic ID

FRS ID

John Penland

12/17/2009

Time 14:21:26

Is Date an Estimate?

Exide Technologies - Frisco Plant

7471 South 5th St.

TX

City Frisco

County

Collin

4808500001

Type AIRS/AFS

110000456104

ICIS ID



Description

ExideAir101.jpg

730,649

Supplemental Ventilation Baghouse (EPN 37)

Appendix CAA-D

Examples of Exide Compliance Documents

SMELTER VENTILATION VELOCITIES

| Blast Furnace Ventilation Velocities | | | | | | |
|--------------------------------------|-----------|-----------|-----------|-------------|---------------|---------|
| Readings In Feet Per Minute | | | | NOV/2009 | | |
| | Lead Well | Laundry A | Laundry B | Tapper Open | Tapper Closed | Charger |
| 1 | 900 | 600 | 600 | N/A | N/A | N/A |
| 2 | 800 | 700 | 600 | N/A | N/A | N/A |
| 3 | 700 | 500 | 400 | N/A | N/A | N/A |
| 4 | 700 | 500 | 500 | N/A | N/A | N/A |
| 5 | 700 | 500 | 500 | N/A | N/A | N/A |
| 6 | 600 | 400 | 500 | N/A | N/A | N/A |
| 7 | 900 | 400 | 500 | N/A | N/A | N/A |
| 8 | 800 | 600 | 500 | N/A | N/A | N/A |
| Avg. | 763 | 525 | 513 | | | |

Kettle Hood Face Velocities

| Readings In Feet Per Minute | | | | | | | | | | | |
|-----------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Kettle A | Kettle B | Kettle 2 | Kettle 3 | Kettle 4 | Kettle C | Kettle D | Kettle E | Kettle 5 | Kettle 6 | Kettle 7 |
| 1 | 1200 | 300 | 1600 | 800 | 350 | 700 | 500 | 450 | 1000 | 300 | 300 |
| 2 | 1200 | 300 | 1500 | 600 | 350 | 700 | 500 | 450 | 1000 | 300 | 350 |
| 3 | 1000 | 500 | 1500 | 600 | 350 | 700 | 500 | 400 | 800 | 325 | 350 |
| 4 | 1000 | 500 | 1300 | 600 | 350 | 500 | 500 | 400 | 800 | 300 | 300 |
| 5 | 900 | 500 | 1200 | 500 | 350 | 500 | 450 | 500 | 700 | 300 | 300 |
| 6 | 900 | 350 | 1200 | 500 | 400 | 500 | 350 | 500 | 700 | 325 | 325 |
| 7 | 900 | 400 | 1200 | 500 | 300 | 500 | 350 | 400 | 700 | 300 | 300 |
| 8 | 1100 | 400 | 1200 | 700 | 300 | 600 | 350 | 400 | 700 | 300 | 300 |
| Avg. | 1025 | 406 | 1338 | 600 | 344 | 588 | 438 | 438 | 800 | 306 | 316 |

Dross Stations

| | Kettle A | Kettle B | Kettle 2 | Kettle 3 | Kettle 4 | Kettle C | Kettle D | Kettle E | Kettle 5 | Kettle 6 | Kettle 7 |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | | | | | | | | | | | |

| Casting Ventilation Hood | | | Slag Treatment Ventilation Velocities | | | |
|-----------------------------|------|--|---------------------------------------|--------------|---------------|-------|
| Readings In Feet Per Minute | | | Readings In Feet Per Minute | | | |
| | | | | Main Crusher | Screen | Truck |
| 1 | 800 | | 1 | 1400 | | 500 |
| 2 | 800 | | 2 | 1400 | | 500 |
| 3 | 700 | | 3 | 1200 | | 800 |
| 4 | 700 | | 4 | 1800 | | 800 |
| 5 | 900 | | 5 | 1800 | | 700 |
| 6 | 1000 | | 6 | 1800 | | 700 |
| 7 | 1000 | | 7 | 1200 | | 600 |
| 8 | 800 | | 8 | 1600 | | 600 |
| Avg. | 838 | | Avg. | 1525 | not available | 650 |

Reverb Furnace Ventilation Velocities

| Readings In Feet Per Minute | | | | | | | |
|-----------------------------|-----------|-----------|-----------|-------------|----------|----------|---------------|
| | Lead Well | Laundry C | Laundry D | Rabble Door | Slag Tap | Slag Cab | Ram |
| 1 | 350 | 300 | 1000 | 500 | 1000 | 1300 | not available |
| 2 | 350 | 400 | 800 | 500 | 1000 | 1300 | not available |
| 3 | 350 | 400 | 900 | 400 | 1000 | 1200 | not available |
| 4 | 300 | 350 | 900 | 400 | 900 | 1000 | not available |
| 5 | 300 | 350 | 900 | 300 | 900 | 1000 | not available |
| 6 | 400 | 350 | 700 | 500 | 800 | 1500 | not available |
| 7 | 300 | 300 | 800 | 300 | 800 | 1200 | not available |
| 8 | 300 | 300 | 800 | 300 | 1100 | 1200 | not available |
| Avg. | 331 | 344 | 850 | 400 | 938 | 1213 | not available |

RMS BLDG

| North Door | |
|-------------------|-----|
| Readings In F P M | |
| 1 | 100 |
| 2 | 150 |
| 3 | 200 |
| 4 | 100 |
| 5 | 100 |
| 6 | 200 |
| 7 | 50 |
| 8 | 100 |
| Avg. | 125 |

Standard Operating Procedures For Fugitive Sources
NESHAP COMPLIANCE
GNB Technologies, Frisco, Texas

This Standard Operating Procedure (SOP) is to be used as the standard description of measures that will be put in place to control the fugitive dust emissions sources listed below. GNB reserves the right to modify, change or add to this SOP to improve control of fugitive dust emissions. The areas covered by this SOP are:

1. Plant Roadways
2. Battery Breaking Area
3. Furnace Areas
4. Refining and Casting
5. Material Storage Building

GNB understands the importance of keeping traffic, and work surfaces clean in order to reduce fugitive emissions. All areas in the Frisco facility are at the very least partially enclosed.

Plant Roadways:

Appendix A contains a diagram of the GNB Frisco plant site. The main roadways are clearly evident in the diagram. Roadways are described as those areas where truck and mobile equipment travel inside the plant operations boundaries. These paved areas are between the Battery Storage Building and the Battery Breaker, the Battery Storage Building and the Material Storage Building, between Slag Treatment and Maintenance, and Maintenance and the Grass Island. GNB will clean these roadways with a combination of wash down and or powered vacuum sweeper. Areas of roadway that are covered by parked mobile equipment or stored equipment will be by-passed until the area is cleared. The roadways will be cleaned twice a day and this cleaning will be recorded on the Area Cleaning Report. An example of this report is in Appendix A. The only time these roadways will not be cleaned will be when there is natural precipitation to make cleaning unnecessary.

Battery Breaker Area:

The battery breaker area pavement will be cleaned twice a day by the battery breaker crew. The method will be by water wash down. Areas of paving that are covered by parked mobile equipment or stored equipment will be by-passed until the area is cleared. A Battery Breaker Cleaning Report will be filled out and signed. All process materials in this area are already wet and will need no suppressant sprays to reduce fugitives. If there should be dry materials in the area then those materials will be wetted with water sprays. A copy of the Battery Breaker Cleaning Report is included in Appendix A.

Furnace Areas:

The pavement of the furnace operation areas will be cleaned twice a day. The method of cleaning will be a combination of water wash down, vacuum, or powered sweeper. Areas of paving that are covered by parked mobile equipment or stored equipment will be by-passed until the area is cleared. The cleaning will be recorded on the Furnace Area Cleaning Report by the Furnace Leadman. A copy of this report is shown in Appendix A.

Refining and Casting Areas:

The paved surfaces in the refining and casting areas will be cleaned twice a day. The refining and casting crews will share responsibility for the cleaning. The method will be powered vacuum sweeper and vacuum wands. Areas of paving that are covered by parked mobile equipment or stored equipment will be by-passed until the area is cleared. The cleaning will be recorded on the refining and casting cleaning report by the Casting Leadman and/or the Refinery Leadman. A sample of this report is in Appendix A.

Material Storage Building:

The Material Storage Building is totally enclosed and ventilated to a control device.(Raw Material Storage Dust Collector, Torit) All vehicles exiting the building will wash off at the wheel wash area before leaving the plant site,except for the front-end loader, which is washed after completion of material transporting activities. A record of this wash will be kept on the Vehicle Wash Report by the equipment operator. A copy of this report is in Appendix A.

BATTERY BREAKER CLEANING REPORT

Must be cleaned two (2) times a day

| Date | Initials First Cleaner | Time First Cleaning | Initials Second Cleaner | Time Second Cleaning | Reason for No Cleaning | Supervisor First Cleaning | Supervisor Second Cleaning | Comments |
|----------|------------------------------|---------------------------|-------------------------------|----------------------------|---------------------------|---------------------------------|----------------------------------|----------|
| 11-30-05 | ST | 10:25am | SP | 2:30 pm | } | CP | CP | |
| 12-1-05 | ST | 10:40am | A.R. | 2:40 pm | | | | |
| 12-2-05 | — | — | — | — | OFF | — | — | |
| 12-3-05 | A.R. | 11:00am | ST | 2:40 pm | } | CP | CP | |
| 12-4-05 | ST | 10:00am | ST | 2:30 pm | | | | |
| 12-5-05 | SP | 10:30am | A.R. | 2:30 pm | } | CP | CP | |
| 12-6-05 | — | — | — | — | | OFF | — | — |
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FRISCO SMELTER

2nd Shift

SMT022
Rev3: 6/07/04

BATTERY BREAKER CLEANING REPORT

Must be cleaned two (2) times a day

[illegible]

**Standard Operating Procedures For Baghouse
NESHAP COMPLIANCE
Exide Technologies, Frisco, Texas**

This Standard Operating Procedure is to be used as the standard guide in the operation and maintenance of baghouses at Exide Technologies at Frisco, Texas. Exide reserves the right to modify, change or add to this SOP to improve baghouse operations at any time.

Baghouses subject to the NESHAP Baghouse S.O.P. requirements at the Frisco Plant site are:

1. Material Dryer Baghouse. (Dryer BH)
2. Hard Lead Baghouse (Hard Lead BH)
3. Reverbatory Furnace Baghouse. (Reverb BH)
4. Blast Furnace Baghouse. (Blast BH)
5. Soft Lead Baghouse. (Soft Lead BH)
6. Supplemental Ventilation Baghouse. (Supplemental BH)
7. Material Storage Dust Collector. (Torit BH)

Of the above baghouses the Hard Lead, Reverb, Blast, Soft Lead, and Supplemental baghouses are the shaker type of cleaning system. The Dryer and Torit use reverse pulse jet to clean the fabric filters.

Daily Monitoring Requirements for the Operation of the Listed Baghouses:

Requirement §63.548(c)(1) - Pressure Drop

Pressure drop will be recorded for each baghouse cell from the cell magnehelic or photohelic gauge (or other pressure drop gauge) at least once daily for the following baghouses: Blast, Reverb, Dryer, Hard Lead, Soft Lead, Supplemental, and Torit. Appendix A contains copies of the daily shift reports for the above baghouses. (previously D1)

Requirement §63.548(c)(3) Pulse-Jet Compressed Air Supply

The compressed air supply for the pulse jet cleaning system for the Dryer and Torit Baghouses will be checked daily for audible pulsing in each baghouse cell and recorded. (previously D4)

Weekly Monitoring Requirements for the Operation of the Listed Baghouses:

The Weekly Baghouse Operators' Report Form is in Appendix A. (previously W1)

Requirement §63.548(c)(2) - Dust Removal Mechanisms

All dust conveyors for the Blast, Reverb, Dryer, Hard Lead, Soft Lead, Supplemental, and Torit baghouses will be checked once per week for proper rotation and operation, and recorded. The procedure for conveyor check is in Appendix B of this SOP. Collection hoppers on the Blast, Reverb, Dryer, Hard Lead, Soft Lead, Supplemental, and Torit baghouses will be rapped with a dead blow hammer once per week to prevent bridging. The rapping activity will be recorded. (previously D2)

If conveyor check or hopper rapping indicate hopper clogging or other inappropriate dust removal, the baghouse cell hopper will be checked for dust removal by visual means. The results of the inspection will be recorded on the weekly inspection report. Procedures for Rapping Hopper Bins and Visually Checking Hopper Bins is in Appendix B. (previously W2)

Monthly Monitoring Requirements for Operation of Listed Baghouses:

Requirement §63.548(c)(4) – Cleaning Cycles

(previous D3 removed and combined with W3)

The cleaning cycles for each baghouse (i.e., pulse-jet timing and shaker cycle timing) will be checked and the results recorded on the monthly report. The Cleaning Cycle procedure is in Appendix C (previously W3)

Requirement §63.548(c)(5) - Bag Cleaning Mechanisms

Proper functioning of cleaning mechanisms on the baghouse will be checked by monthly inspection of the shaker and damper systems. The inspection methods are in Appendix C. (previously W4)

All bag leak detector probes will be cleaned on a monthly basis. (previously W5)

The monthly shaker and damper checks, and bag leak detector probe cleaning, is an equivalent means of monitoring bag cleaning mechanisms.

Requirement §63.548(c)(6) - Bag Tension

The tension on all shaker cleaning baghouses will be checked on a monthly basis and recorded. This procedure is listed in Appendix C.

Quarterly Monitoring Requirements for Operation of Listed Baghouses:

Requirement §63.548(c)(7) - Baghouse Physical Integrity

During the monthly bag tension checks required in §63.548(e)(6), GNB will check the baghouse interior for air leaks. Any physical integrity concerns will be recorded.

Requirement §63.548(c)(8) - Fan Physical Integrity

Baghouse fans will be inspected for wear and buildup each quarter. The record of the check will be recorded. The procedure for checking the fans is listed in Appendix C.

Operation and Maintenance of Broken Bag Detector:

1. All baghouse systems listed have a broken bag detector probe in the outlet duct of the baghouse. These probes are cleaned monthly by the baghouse operator.
2. All broken bag detectors are setup and maintained in accordance with the instruction manual issued with the equipment. A copy of the instruction manual is kept by the Assistant Plant Manager, the

Technical Services Manager, the Plant Engineer, the Environmental General Forman, and the Baghouse Leadman.

3. The operation procedure for a broken bag alarm is listed in Appendix E.

Appendix A
Baghouse Operations Reports

Appendix B

Procedures for Checking Baghouse Dust Conveyor System

The purpose of these procedures is to insure that there is no build-up of dusts in the baghouse cell collection hoppers that might hinder gas flow into the fabric filter system.

Screw Conveyor Check:

The screw conveyors on all baghouses can be checked by observing the screw shaft rotation on the opposite end of the motor drive. If the motor is on and turning and the stub shaft sticking out of the non-powered end of the screw is turning, then the whole screw shaft is turning.

Rapping Bin hoppers:

In order to prevent bridging and build up of dusts in baghouse bin hoppers, the bin hopper bottoms of the cells should be rapped with a dead blow hammer. **Do Not Use A Standard Steel Beaded Sledge Hammer.** Always use a plastic dead blow type hammer to prevent denting the hopper sides. Strike the hopper and listen for a hollow or echoing sound. Try to avoid striking inspection doors or other equipment on the hopper walls.

Visual Check of Bin Hoppers:

Sometimes a visual check of the condition of the hopper is needed to insure proper dust removal. There are two ways to check a hopper visually.

1. Take the baghouse cell off line and open the outside inspection door on the hopper and look inside the hopper.
2. Take the baghouse cell off line and enter the cell. Remove a bag at the bottom floor plate and look into the bin hopper.

Appendix C

Procedures for Checking Baghouse Cleaning Cycles and Cleaning Mechanisms

Timer Check:

Shaker Baghouses

1. Climb ladder to the shaker level of the baghouse, if necessary.
2. Gauge the duration of the shake cycle when the shakers are activated; if shaker duration is less than approximately 5 seconds or greater than approximately 30 seconds, then adjust the shaker settings within the 5-30 second range. During the shake cycle, observe any abnormalities in the shaker linkages, bushings, or bearings.
3. Record findings on report form. Notify maintenance if there are any abnormal findings requiring their involvement.

Pulse Jet Baghouses

Listen to the pulse-jet compressed air system. Determine if pulse-jet compressed air system is working within each baghouse cell. If pulse jet duration is less than approximately 1 second or greater than approximately 60 seconds, then adjust the pulse jet settings within the 1-60 second range

Shaker Check:

1. Climb ladder to shaker deck, as necessary.
2. Manually pull on the drive belt to check tension, while the drive pulley is not functioning (i.e., during shaker idle period). If the drive pulley is total enclosed, observe the drive belt for slipping or excess vibrating. Visually check the shaker mechanism, and the rods, bearings, connectors, shafts, bushings, and belt tension. Record findings on report form.

Damper Check:

1. Turn damper operation switch to manual.
2. Dampers on inlet and outlet of cell should close.
3. Check manometer gauge for zero reading.
4. Check damper cylinder for leaks and proper connection.
5. Turn damper operation switch to auto.

Monthly Bag Tension Check:

1. Close dampers to insure there will be no air flow through the cell. Open Upper and Lower cell doors and allow the cell to cool before entering the cell, if necessary.

2. Enter the upper door of the cell. Spot-check bag for correct tension on the high side of the log. Adjust as needed.
3. Repeat Step 2 for each baghouse cell.
4. Close the upper and lower doors of the cell.

Quarterly Fan Check:

1. Assure that all upstream operations are shut down or are ready for loss of ventilation from the farm.
2. Shut off fan, and insure no power can activate the system.
3. After the fan stops rotation, remove the inspection cover from the housing.
4. Manually turn the fan shaft so that each fan blade can be observed. Remove any significant buildup from the blades or the inside of the housing.
5. Replace the inspection cover and secure.

Appendix E

Broken Bag Detector Alarm Procedure

1. In the event of an alarm with the broken bag detector, the operator will check to see if the alarm is false due to a routine cleaning cycle. If so, the operator will reset the alarm.
2. If the alarm continues, the operator's next action is to inspect the probe and clean it.
3. If the alarm continues after cleaning the probe, the operator will manually close the inlet and outlet dampers on a cell. The operator will then observe the sensitivity meter on the detector. If the needle shows a drop, that cell will be opened in accordance with standard procedures for entering a cell and a search for the cause of the alarm will be done. All broken bags will be replaced and the cell cleaned up before the cell doors are closed. If the sensitivity meter does not drop, the inlet and outlet dampers will be opened and the next cell dampers will be closed. This action will be repeated until all cells have been checked. Once the broken bags have been replaced, the probe will be cleaned, and the alarm reset. The operator will observe the alarm system for proper function after the above procedure.
4. If the above procedure has not located the source of alarm, the operator will enter each individual cell and check the cell visually for any broken bags. All broken bags will be replaced. The probe will be cleaned and the alarm reset. The operator will observe the alarm system for proper function after the above procedure.
5. If visual inspection reveals the source of alarm to be something other than a broken bag, the operator will notify his supervisor immediately. If the repair can not be done by operations, maintenance will be notified. The effected cell will be kept off-line until repairs have been completed.
6. All alarms from the broken bag detector will be recorded on the operator shift report.
7. In the event that no cause can be found for the alarm, the operator will notify the supervisor for further action. A change in the sensitivity of the instrument maybe required after a complete baghouse inspection.

BLAST BAGHOUSE DAILY SHIFT REPORT

SHIFT

1st

NAME

SSSS

DATE

12-9-09

SHOW ALL BAG
REPLACE
LOCATIONS

RECORD ALL
ALARMS AND
TIMES

SCRUBBER

PH TIME

7:09 7:25 AM

7:22 10:30 AM

7:14 1 PM

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| MAGNETIC READING | CELL #1 | CELL #2 | CELL #3 | CELL #4 | CELL #5 |
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| SHAKER OPERATIONAL > Y/N | 2/4 | 2/4 | 2 | 1 1/2 | 3 1/4 |
| BIN SCREW ROTATION CORRECT? | Y | Y | Y | Y | Y |
| NUMBER OF RAPS ON BIN | 10 | 10 | 10 | 10 | 10 |
| SHAFT ROTATION CORRECT? Y/N | Y | Y | Y | Y | Y |
| WAS THE BIN EMPTY? Y/N | N | N | N | N | N |
| WAS VISUAL CHECK NEEDED? Y/N | N | N | N | N | N |

| INCLINE SCREW ROTATION CORRECT? | AFTERBURNER TEMP | FLUE DUST ELEVATOR | FLUE DUST CONVEYOR #1 |
|---------------------------------|------------------|--------------------|-----------------------|
| CONVEYOR #2 ROTATION CORRECT? | 1511 | Y | Y |
| CONVEYOR #3 ROTATION CORRECT? | Y | BLAST BAG TEMP | FLUE DUST CONVEYOR #2 |

| TIME OF ALARM | CAUSE OF ALARM | CORRECTIVE ACTION TAKEN OR COMMENTS |
|---------------|----------------|-------------------------------------|
| OK | OK | TRIBOFLOW ALARMS OK |
| OK | OK | DAMPERS 512 Y |

BLAST BAGHOUSE DAILY SHIFT REPORT

SMT038
Rev 2
06/14/04

SHIFT

2nd

NAME

Chas R

DATE

12/9/09SHOW ALL BAG
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RECORD ALL
ALARMS AND
TIMES

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7:14 3:20pm4:52 1 pm4:5 10 pm

| MAGNETIC READING | CELL #1 | CELL #2 | CELL #3 | CELL #4 | CELL #5 |
|------------------------------|-----------|-----------|-----------|-----------|-----------|
| SHAKER OPERATIONAL? Y/N | <u>Y</u> | <u>Y</u> | <u>Y</u> | <u>Y</u> | <u>Y</u> |
| BIN SCREW ROTATION CORRECT? | <u>Y</u> | <u>Y</u> | <u>Y</u> | <u>Y</u> | <u>Y</u> |
| NUMBER OF RAPS ON BIN | <u>10</u> | <u>10</u> | <u>10</u> | <u>10</u> | <u>10</u> |
| SHAFT ROTATION CORRECT? Y/N | <u>Y</u> | <u>Y</u> | <u>Y</u> | <u>Y</u> | <u>Y</u> |
| WAS THE BIN EMPTY? Y/N | <u>N</u> | <u>N</u> | <u>N</u> | <u>N</u> | <u>N</u> |
| WAS VISUAL CHECK NEEDED? Y/N | <u>N</u> | <u>N</u> | <u>N</u> | <u>N</u> | <u>N</u> |

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|---------------------------------|----------|--------------------|-------------|-----------------------|-----------|
| INCLINE SCREW ROTATION CORRECT? | <u>Y</u> | AFTERBURNER TEMP | <u>1510</u> | FLUE DUST CONVEYOR #1 | <u>OK</u> |
| CONVEYOR #2 ROTATION CORRECT? | <u>Y</u> | FLUE DUST ELEVATOR | <u>OK</u> | FLUE DUST CONVEYOR #2 | <u>OK</u> |
| CONVEYOR #3 ROTATION CORRECT? | <u>Y</u> | BLAST BAG TEMP | <u>275</u> | | <u>OK</u> |

| TIME OF ALARM | CAUSE OF ALARM | CORRECTIVE ACTION TAKEN OR COMMENTS |
|---------------|----------------|--|
| | | <u>At A-D fire (cup) and all hopper.</u> |
| | | <u>clean hop and bottom activator chutes</u> |

BLAST BAGHOUSE DAILY SHIFT REPORT

SMT036
Rev 2
06/14/04

SHIFT

NAME

DATE

C

Jose Ortiz

12-9-09

SHOW ALL BAG
REPLACE
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SCRUBBER
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712 11:00

717 3:00

727 6:00

| MAGNETIC READING | CELL #1 | CELL #2 | CELL #3 | CELL #4 | CELL #5 |
|------------------------------|---------|---------|---------|---------|---------|
| SHAKER OPERATIONAL? Y/N | 2 | 2 | 2 | 3 | 3 |
| BIN SCREW ROTATION CORRECT? | Y | Y | Y | Y | Y |
| NUMBER OF RAPS ON BIN | 15 | 15 | 15 | 15 | 15 |
| SHAFT ROTATION CORRECT? Y/N | Y | Y | Y | Y | Y |
| WAS THE BIN EMPTY? Y/N | N | N | N | N | N |
| WAS VISUAL CHECK NEEDED? Y/N | N | N | N | N | N |

| | | | | | |
|---------------------------------|---|--------------------|-------|-----------------------|-----|
| INCLINE SCREW ROTATION CORRECT? | Y | AFTERBURNER TEMP | 15 14 | FLUE DUST CONVEYOR #1 | OK |
| CONVEYOR #2 ROTATION CORRECT? | Y | FLUE DUST ELEVATOR | OK | FLUE DUST CONVEYOR #2 | OK |
| CONVEYOR #3 ROTATION CORRECT? | Y | BLAST BAG TEMP | 337 | DAMPER | 512 |

| TIME OF ALARM | CAUSE OF ALARM | CORRECTIVE ACTION TAKEN OR COMMENTS | TRIBOFLOW ALARMS |
|---------------|----------------|-------------------------------------|------------------|
| | | at cleaned flue dust elevator | |
| | | top of bottom hit all hoppers | |
| | | I running 1 bin of flue dust. 0.1 | |

Storage material Building. Because
the elevator stuck.

REVERB BAGHOUSE DAILY SHIFT REPORT

REVERB BAG TEMP

365°

SHIFT

1st

NAME

Jesse

DATE

12-9-09

SHOW ALL BAG
REPLACE
LOCATIONSRECORD ALL
ALARMS AND
TIMES

SCRUBBER

PH

TIME

7:09 7:25 AM

7:22 10:30 AM

7:14 1 PM

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MAGNETIC READING

1

CELL #1

21

CELL #2

5

CELL #3

4

CELL #4

2

CELL #5

SHAKER OPERATIONAL > Y/N

NUMBER OF RAPS ON BIN

SHAFT ROTATION CORRECT? Y/N

WAS THE BIN EMPTY? Y/N

WAS VISUAL CHECK NEEDED? Y/N

Y 20

Y 20

Y 20

Y 20

Y 20

Y

Y

Y

Y

Y

TIME OF ALARM

CAUSE OF ALARM

CORRECTIVE ACTION TAKEN OR COMMENTS

TRIBOFLOW ALARMS

OK

OK

OK

REVERB BAGHOUSE DAILY SHIFT REPORT

SMT037
Rev 2
06/14/04

REVERB BAG TEMP

361

SHIFT

2nd

NAME

Carroll R

DATE

12/9/09

SHOW ALL BAG
REPLACE
LOCATIONS

RECORD ALL
ALARMS AND
TIMES

SCRUBBER
PH TIME
7.4 3:20 PM
4.5V 7 PM
2.5 10 PM

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| MAGNEHELIC READING | CELL #1 | CELL #2 | CELL #3 | CELL #4 | CELL #5 |
|------------------------------|---------|---------|---------|---------|---------|
| SHAKER OPERATIONAL > Y/N | YES | YES | YES | YES | YES |
| NUMBER OF RAPS ON BIN | 70 | 70 | 70 | 70 | 70 |
| SHAFT ROTATION CORRECT? Y/N | YES | YES | YES | YES | YES |
| WAS THE BIN EMPTY? Y/N | NO | NO | NO | NO | NO |
| WAS VISUAL CHECK NEEDED? Y/N | NO | NO | NO | NO | NO |

TRIBOFLOW/ALARMS

| TIME OF ALARM | CAUSE OF ALARM | CORRECTIVE ACTION TAKEN OR COMMENTS |
|---------------|----------------|-------------------------------------|
| | | 1st A-P, V-TUBES and all hoppers |
| | | |
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363

9

Jose Ortiz

129009

RECORD ALL ALARMS AND TIMES

TIME 1:00

712 11.00

7276:00

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| | CELL #1 | CELL #2 | CELL #3 | CELL #4 | CELL #5 |
|------------------------------|---------|---------|---------|---------|---------|
| MAGNEHELIC READING | 1 1/2 | 2 1/2 | 3 | 4 | 3 |
| SHAKER OPERATIONAL > Y/N | Y | Y | Y | Y | Y |
| NUMBER OF RAPS ON BIN | 20 | 20 | 20 | 20 | 20 |
| SHAFT ROTATION CORRECT? Y/N | Y | Y | Y | Y | Y |
| WAS THE BIN EMPTY? Y/N | N | N | N | N | N |
| WAS VISUAL CHECK NEEDED? Y/N | N | N | N | N | N |

[illegible]

12-9-09

6c/b/21

| | | | |
|-------------------------------|--------|--------------------------|-----|
| WHAT IS THE AIR PRESSURE? | 90 PSI | IS THE BAGHOUSE PULSING? | YES |
| CONVEYOR #1 ROTATION CORRECT? | YES | BAGHOUSE TEMP | 20 |
| CONVEYOR #2 ROTATION CORRECT? | YES | WATER LEVEL CORRECT? | YES |
| CONVEYOR #3 ROTATION CORRECT? | YES | DID YOU CLEAN DUCTWORK? | YES |

RECORD ALL BROKEN BAG ALARMS AND TIMES

None

MARK ALL BAG REPLACEMENTS

NOTE

MAGNETIC
READING

2

MAGNEHELIC
READING

MAGNETIC
READING 4

BIN EMPTY AFTER CLEANING?

BIN EMPTY AFTER CLEANING?

BIN EMPTY AFTER CLEANING?

A blank 10x10 grid for graphing. The grid consists of 10 columns and 10 rows of squares. The top row is labeled with the letters A through J from left to right. The leftmost column is labeled with the numbers 1 through 10 from top to bottom.[illegible][illegible]

CELL 1

CELL 2

CELL 3

[illegible]

ZEP DEGREASER

**IF NOT IN USE IS THE COVER CLOSED?
IS THE OPERATING PROCEDURE IN PLACE?**

| | |
|-----|-----|
| YES | YES |
|-----|-----|

| | |
|----|----|
| NO | NO |
|----|----|

DATE: 12-9-09

| | | | |
|-------------------------------|----|--------------------------|------|
| WHAT IS THE AIR PRESSURE? | 85 | IS THE BAGHOUSE PULSING? | Y |
| CONVEYOR #1 ROTATION CORRECT? | Y | BAGHOUSE TEMP | 81.0 |
| CONVEYOR #2 ROTATION CORRECT? | Y | WATER LEVEL CORRECT? | OK |
| CONVEYOR #3 ROTATION CORRECT? | Y | DID YOU CLEAN DUCTWORK? | Y |

MARK ALL BAG REPLACEMENTS

MAGNETIC
READING 4

BIN EMPTY AFTER CLEANING?

CELL 3

| TRIBOFLOW ALARMS | | |
|------------------|----------------|-------------------------------------|
| TIME OF ALARM | CAUSE OF ALARM | CORRECTIVE ACTION TAKEN OR COMMENTS |
| 1:48 | EDISC Alarm | Check Trive Flow cleaned Reset |
| / | / | At 2:20 cleaned Damper Pipe and |
| / | / | Check Hoppers was OK |
| / | / | |
| / | / | |
| / | / | |
| / | / | |

| | |
|-----|-------------------------------------|
| YES | <input checked="" type="checkbox"/> |
| YES | <input checked="" type="checkbox"/> |
| NO | <input type="checkbox"/> |
| NO | <input type="checkbox"/> |

FRISCO SMELTER (862) DUST COLLECTOR FAN CHECK LIST

SMT045

Rev 2

6/14/04

DATE:

12-9-09
1st

OPERATOR:

JESSE

SHIFT:

TIME:

9AM

| | | | | | |
|------------------------|--------|----|------------------------|--------|----|
| BLAST BAGHOUSE FAN | NOT OK | OK | REVERB BAGHOUSE FAN | NOT OK | OK |
| FAN | | ✓ | FAN | | ✓ |
| BEARINGS | | ✓ | BEARINGS | | ✓ |
| BELTS | | ✓ | BELTS | | ✓ |
| MOTOR | | ✓ | MOTOR | | ✓ |
| SUPPLEMENTAL BAGHOUSE | NOT OK | OK | DRYER BAGHOUSE | NOT OK | OK |
| FAN | | ✓ | FAN | | ✓ |
| BEARINGS | | ✓ | BEARINGS | | ✓ |
| BELTS | | ✓ | BELTS | | ✓ |
| MOTOR | | ✓ | MOTOR | | ✓ |
| HARD LEAD BAGHOUSE | NOT OK | OK | SOFT LEAD BAGHOUSE | NOT OK | OK |
| FAN | | ✓ | FAN | | ✓ |
| BEARINGS | | ✓ | BEARINGS | | ✓ |
| BELTS | | ✓ | BELTS | | ✓ |
| MOTOR | | ✓ | MOTOR | | ✓ |
| SPECIAL ALLOY BAGHOUSE | NOT OK | OK | RAW MATERIAL DUST COLL | NOT OK | OK |
| FAN | | ✓ | FAN | | ✓ |
| BEARINGS | | ✓ | BEARINGS | | ✓ |
| BELTS | | ✓ | BELTS | | ✓ |
| MOTOR | | ✓ | MOTOR | | ✓ |
| SLAG TREATMENT BG | NOT OK | OK | | | |
| FAN | | ✓ | | | |
| BEARINGS | | ✓ | | | |
| BELTS | | ✓ | | | |
| MOTOR | | ✓ | | | |

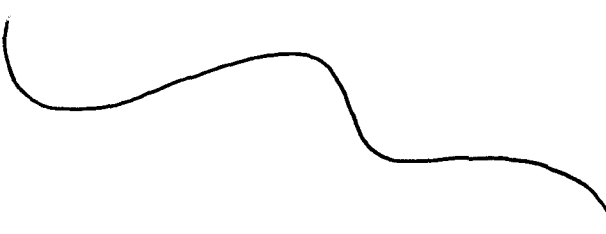
COMMENTS:

FRISCO SMELTER (862) DUST COLLECTOR FAN CHECK LIST

SMT045
Rev 2
6/14/04

DATE: 12/9/04 OPERATOR: celmosk

SHIFT: 2nd TIME: 4:00 PM

| | | | | | |
|------------------------|--------|-----|--|--------|----|
| BLAST BAGHOUSE FAN | NOT OK | OK | REVERB BAGHOUSE FAN | NOT OK | OK |
| FAN | | / | FAN | | / |
| BEARINGS | | / | BEARINGS | | / |
| BELTS | | / | BELTS | | / |
| MOTOR | | / | MOTOR | | / |
| SUPPLEMENTAL BAGHOUSE | NOT OK | OK | DRYER BAGHOUSE | NOT OK | OK |
| FAN | | / | FAN | | / |
| BEARINGS | | / | BEARINGS | | / |
| BELTS | | / | BELTS | | / |
| MOTOR | | / | MOTOR | | / |
| HARD LEAD BAGHOUSE | NOT OK | OK | SOFT LEAD BAGHOUSE | NOT OK | OK |
| FAN | | / | FAN | | / |
| BEARINGS | | / | BEARINGS | | / |
| BELTS | | / | BELTS | | / |
| MOTOR | | / | MOTOR | | / |
| SPECIAL ALLOY BAGHOUSE | NOT OK | OK | RAW MATERIAL DUST COLL | NOT OK | OK |
| FAN | | / | FAN | | / |
| BEARINGS | | / | BEARINGS | | / |
| BELTS | | / | BELTS | | / |
| MOTOR | | / | MOTOR | | / |
| SLAG TREATMENT BG | NOT OK | OK |  | | |
| FAN | OFF | OFF | | | |
| BEARINGS | ↓ | ↓ | | | |
| BELTS | ↓ | ↓ | | | |
| MOTOR | ↓ | ↓ | | | |

COMMENTS: Slag T does not run on 2nd shift

FRISCO SMELTER (862) DUST COLLECTOR FAN CHECK LIST

SMT045
Rev 2
6/14/04DATE: 12-9-09 OPERATOR: Jose OrtizSHIFT: C TIME: 11:50

| | | | | | |
|------------------------|--------|----|------------------------|--------|----|
| BLAST BAGHOUSE FAN | NOT OK | OK | REVERB BAGHOUSE FAN | NOT OK | OK |
| FAN | | ✓ | FAN | | ✓ |
| BEARINGS | | ✓ | BEARINGS | | ✓ |
| BELTS | | ✓ | BELTS | | ✓ |
| MOTOR | | ✓ | MOTOR | | ✓ |
| SUPPLEMENTAL BAGHOUSE | NOT OK | OK | DRYER BAGHOUSE | NOT OK | OK |
| FAN | | ✓ | FAN | | ✓ |
| BEARINGS | | ✓ | BEARINGS | | ✓ |
| BELTS | | ✓ | BELTS | | ✓ |
| MOTOR | | ✓ | MOTOR | | ✓ |
| HARD LEAD BAGHOUSE | NOT OK | OK | SOFT LEAD BAGHOUSE | NOT OK | OK |
| FAN | | ✓ | FAN | | ✓ |
| BEARINGS | | ✓ | BEARINGS | | ✓ |
| BELTS | | ✓ | BELTS | | ✓ |
| MOTOR | | ✓ | MOTOR | | ✓ |
| SPECIAL ALLOY BAGHOUSE | NOT OK | OK | RAW MATERIAL DUST COLL | NOT OK | OK |
| FAN | | ✓ | FAN | | ✓ |
| BEARINGS | | ✓ | BEARINGS | | ✓ |
| BELTS | | ✓ | BELTS | | ✓ |
| MOTOR | | ✓ | MOTOR | | ✓ |
| SLAG TREATMENT BG | NOT OK | OK | | | |
| FAN | | | | | |
| BEARINGS | | | | | |
| BELTS | | | | | |
| MOTOR | | | | | |

COMMENTS:

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CELL #1

CELL #2

CELL #3

SHIFT

Magnetic Readings

CELL #1

CELL #2

CELL #3

CELL #4

CELL #5

CELL #6

Record all Alarms and Times

Mark all Bag Replacements

OIL SEALS FOR LEAKS

BEARINGS

DAMPERS

DATE

Shakers & Conveyors

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CELL #4

CELL #5

CELL #6

MAIN CONVEYOR

FAN

NAME

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Appendix CAA D

0001-0001-0001-0001

4/24/08

NAME JESSA

73

DATE 12-9-08 4/24/08 80

Magnethelic Readings

CELL #1 A-12

CELL #2 12

CELL #3

Record all Alarms and Time

Mark all Bag Replacements

OIL SEALS FOR LEAKS

BEARINGS

DAMPERS

CELL #1

CELL #2

CELL #3

TRIBOFLOW ALARMS

| TIME OF ALARM | CAUSE OF ALARM | CORRECTIVE ACTION TAKEN |
|---------------|----------------|-------------------------|
| | | |

CORRECTIVE ACTION TAKEN

COMMENTS

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| 1 | | | | | | |
| | G | H | I | J | K | L |

[illegible]

MAIN CONVEYOR ROTATION OK?

75

12-01-09

CONVEYOR #1

CONVEYOR #2

CONVEYOR #3

| | | | |
|--|--|--|--|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

CELL #2

CELL #3

CELL 3

TOP DAMPER

6/3/4

RECORD ALL ALARMS AND TIMES

WRITE DOWN ANY WORK

OF

0

00

0

7

[illegible]

DOOR

FRISCO SMELTER (862)

WEEKLY BAGHOUSE OPERATOR REPORT FORM

WEEK 50

SMT044
Rev 2
8/14/04

DATE: 12-7-09

BY: Mingo BAGHOUSE (CYCLE ONE): BLAST REVERB HL SL SUPP SP TORIT DRYER SLAG

SCREW ROTATION AND BIN COLLECTION CHECK

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| SHAFT ROTATION CORRECT YES/NO | Y | Y | Y | Y | Y | / |
| NUMBER OF RAPS ON EACH CELL BIN | 15 | 15 | 15 | 15 | 10 | / |
| WAS THE BIN EMPTY? YES/NO | N | N | N | N | N | / |
| WAS A VISUAL CHECK NEEDED? YES/NO | N | N | N | N | N | / |

MANUALLY OPERATE THE SHAKER CYCLE USING LOCKOUT TAGOUT. CHECK THE FOLLOWING FOR GOOD OR BAD

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|---|--------|--------|--------|--------|------------|--------|
| DIVE BELT TENSION (WITH MOTOR LOCKED OUT) | Y | Y | Y | Y | Y | / |
| LOOSE BEARING MOUNTS ON SHAKER SHAFT | N | N | N | N | N | / |
| LOOSE OR MISSING BUSHINGS ON SHAKERS | N | N | N | N | Loose Pins | / |
| INLET DAMPER POSITION AND OPERATION | Y | Y | Y | Y | Y | / |
| OUTLET DAMPER POSITION AND OPERATION | Y | Y | Y | Y | Y | / |
| OUTLET DAMPER CYLINDER OPERATION | Y | Y | Y | Y | Y | / |

WEEKLY TRIBOFLOW PROBE CLEANING

| BAGHOUSE | DATE | TIME | OPERATOR |
|-----------------|---------|--------|--------------------|
| BLAST | 12-7-09 | 7:30am | Mingo |
| REVERB | / | / | Deanne and Gene T. |
| HARD LEAD | / | / | / |
| SUPPLEMENTAL | / | / | / |
| SPECIALTY ALLOY | / | / | / |
| SOFT LEAD | / | / | / |
| DRYER | / | / | / |
| TORIT | / | / | / |
| SLAG TREATMENT | / | / | / |

#5 Settles
Found pins loose
put back in

WEEKLY BAGHOUSE OPERATOR REPORT FORM

SMT044
Rev 2
8/14/04

50

DATE: 12-7-09BY: Munro BAGHOUSE (CYCLE ONE): BLAST REVERB HL SL SUPP SP TORIT DRYER SLAG

SCREW ROTATION AND BIN COLLECTION CHECK

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| SHAFT ROTATION CORRECT YES/NO | Y | Y | Y | Y | Y | |
| NUMBER OF RAPS ON EACH CELL BIN | 20 | 20 | 20 | 20 | 20 | |
| WAS THE BIN EMPTY? YES/NO | N | N | N | N | N | |
| WAS A VISUAL CHECK NEEDED? YES/NO | N | N | N | N | N | |

MANUALLY OPERATE THE SHAKER CYCLE USING LOCKOUT TAGOUT. CHECK THE FOLLOWING FOR GOOD OR BAD

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|---|--------|--------|--------|--------|--------|--------|
| DIVE BELT TENSION (WITH MOTOR LOCKED OUT) | Y | Y | Y | Y | Y | |
| LOOSE BEARING MOUNTS ON SHAKER SHAFT | N | N | N | N | N | |
| LOOSE OR MISSING BUSHINGS ON SHAKERS | N | N | N | N | N | |
| INLET DAMPER POSITION AND OPERATION | Y | Y | Y | Y | Y | |
| OUTLET DAMPER POSITION AND OPERATION | Y | Y | Y | Y | Y | |
| OUTLET DAMPER CYLINDER OPERATION | Y | Y | Y | Y | Y | |

WEEKLY TRIBOFLOW PROBE CLEANING

| BAGHOUSE | DATE | TIME | OPERATOR |
|------------------|----------------|-------------|------------------|
| BLAST | <u>12-7-09</u> | <u>9 AM</u> | <u>Munro</u> |
| REVERB | | | <u>was clean</u> |
| HARD LEAD | | | <u>Reset it</u> |
| SUPPLEMENTAL | | | |
| SPECIALITY ALLOY | | | |
| SOFT LEAD | | | |
| DRYER | | | |
| TORIT | | | |
| SLAG TREATMENT | | | |

FRISCO SMELTER (862)

WEEKLY BAGHOUSE OPERATOR REPORT FORM

SMT044
Rev 2
6/14/04DATE: 12-7-09BY: Mingo BAGHOUSE (CYCLE ONE): BLAST REVERB HL SL SUPP SP TORIT DRYER SLAG

SCREW ROTATION AND BIN COLLECTION CHECK

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| SHAFT ROTATION CORRECT YES/NO | Y | Y | Y | Y | / | / |
| NUMBER OF RAPS ON EACH CELL BIN | 10 | 10 | 16 | 16 | / | / |
| WAS THE BIN EMPTY? YES/NO | Y | Y | Y | Y | / | / |
| WAS A VISUAL CHECK NEEDED? YES/NO | N | N | N | N | / | / |

MANUALLY OPERATE THE SHAKER CYCLE USING LOCKOUT TAGOUT. CHECK THE FOLLOWING FOR GOOD OR BAD

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|---|--------|--------|--------|--------|--------|--------|
| DIVE BELT TENSION (WITH MOTOR LOCKED OUT) | Y | Y | Y | Y | / | / |
| LOOSE BEARING MOUNTS ON SHAKER SHAFT | N | N | N | N | / | / |
| LOOSE OR MISSING BUSHINGS ON SHAKERS | N | N | N | N | / | / |
| INLET DAMPER POSITION AND OPERATION | Y | Y | Y | Y | / | / |
| OUTLET DAMPER POSITION AND OPERATION | Y | Y | Y | Y | / | / |
| OUTLET DAMPER CYLINDER OPERATION | Y | Y | Y | Y | / | / |

WEEKLY TRIBOFLOW PROBE CLEANING

| BAGHOUSE | DATE | TIME | OPERATOR |
|------------------|---------|--------|-----------------|
| BLAST | / | / | / |
| REVERB | / | / | / |
| HARD LEAD | 12-7-09 | 9:30am | Mingo was clean |
| SUPPLEMENTAL | / | / | Reset it |
| SPECIALITY ALLOY | / | / | / |
| SOFT LEAD | / | / | / |
| DRYER | / | / | / |
| TORIT | / | / | / |
| SLAG TREATMENT | / | / | / |

FRISCO SMELTER (862)

WEEKLY BAGHOUSE OPERATOR REPORT FORM

SMT044
Rev 2
6/14/04

DATE: 12/8/09BY: Murphy R BAGHOUSE (CYCLE ONE): BLAST REVERB HL SL SUPP SP TORIT DRYER SLAG

SCREW ROTATION AND BIN COLLECTION CHECK

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| SHAFT ROTATION CORRECT YES/NO | Y | Y | Y | Y | Y | Y |
| NUMBER OF RAPS ON EACH CELL BIN | 10 | 10 | 10 | 10 | 10 | 10 |
| WAS THE BIN EMPTY? YES/NO | Y | Y | Y | Y | Y | Y |
| WAS A VISUAL CHECK NEEDED? YES/NO | Y | Y | Y | Y | Y | Y |

MANUALLY OPERATE THE SHAKER CYCLE USING LOCKOUT TAGOUT. CHECK THE FOLLOWING FOR GOOD OR BAD

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|---|--------|--------|--------|--------|--------|--------|
| DIVE BELT TENSION (WITH MOTOR LOCKED OUT) | Y | Y | Y | Y | Y | Y |
| LOOSE BEARING MOUNTS ON SHAKER SHAFT | N | N | N | N | N | N |
| LOOSE OR MISSING BUSHINGS ON SHAKERS | N | N | N | N | N | N |
| INLET DAMPER POSITION AND OPERATION | Y | Y | Y | Y | Y | Y |
| OUTLET DAMPER POSITION AND OPERATION | Y | Y | Y | Y | Y | Y |
| OUTLET DAMPER CYLINDER OPERATION | Y | Y | Y | Y | Y | Y |

WEEKLY TRIBOFLOW PROBE CLEANING

| BAGHOUSE | DATE | TIME | OPERATOR |
|------------------|---------|------|------------------|
| BLAST | / | / | / |
| REVERB | / | / | / |
| HARD LEAD | / | / | / |
| SUPPLEMENTAL | / | / | / |
| SPECIALITY ALLOY | / | / | / |
| SOFT LEAD | 12-8-09 | 9AM | Murphy was clean |
| DRYER | / | / | / |
| TORIT | / | / | / |
| SLAG TREATMENT | / | / | / |

FRISCO SMELTER (862)

WEEKLY BAGHOUSE OPERATOR REPORT FORM

SMT044
Rev 2
6/14/04

DATE:

12-7-09

BY: Mingo R BAGHOUSE (CYCLE ONE): BLAST REVERB HL SL SUPP SP TORIT DRYER SLAG

SCREW ROTATION AND BIN COLLECTION CHECK

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| SHAFT ROTATION CORRECT YES/NO | Y | Y | Y | Y | Y | Y |
| NUMBER OF RAPS ON EACH CELL BIN | 10 | 10 | 10 | 10 | 10 | 10 |
| WAS THE BIN EMPTY? YES/NO | Y | Y | Y | Y | Y | Y |
| WAS A VISUAL CHECK NEEDED? YES/NO | Y | Y | Y | Y | Y | Y |

MANUALLY OPERATE THE SHAKER CYCLE USING LOCKOUT TAGOUT. CHECK THE FOLLOWING FOR GOOD OR BAD

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|---|--------|--------|--------|--------|--------|--------|
| DIVE BELT TENSION (WITH MOTOR LOCKED OUT) | Y | Y | Y | Y | Y | Y |
| LOOSE BEARING MOUNTS ON SHAKER SHAFT | N | N | N | N | N | N |
| LOOSE OR MISSING BUSHINGS ON SHAKERS | N | N | N | N | N | N |
| INLET DAMPER POSITION AND OPERATION | Y | Y | Y | Y | Y | Y |
| OUTLET DAMPER POSITION AND OPERATION | Y | Y | Y | Y | Y | Y |
| OUTLET DAMPER CYLINDER OPERATION | Y | Y | Y | Y | Y | Y |

WEEKLY TRIBOFLOW PROBE CLEANING

| BAGHOUSE | DATE | TIME | OPERATOR |
|-----------------|---------|---------|---|
| BLAST | | | |
| REVERB | | | |
| HARD LEAD | | | |
| SUPPLEMENTAL | 12-7-09 | 11:30am | Mingo was little bit dirty cleaned Reverb |
| SPECIALTY ALLOY | | | |
| SOFT LEAD | | | |
| DRYER | | | |
| TORIT | | | |
| SLAG TREATMENT | | | |

FRISCO SMELTER (862)

WEEKLY BAGHOUSE OPERATOR REPORT FORM

SMT044
Rev 2
8/14/04DATE: 12-7-09BY: Murphy BAGHOUSE (CYCLE ONE): BLAST REVERB HL SL SUPP SP TORIT DRYER SLAG

SCREW ROTATION AND BIN COLLECTION CHECK

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| SHAFT ROTATION CORRECT YES/NO | Y | Y | Y | / | / | / |
| NUMBER OF RAPS ON EACH CELL BIN | 10 | 10 | 10 | / | / | / |
| WAS THE BIN EMPTY? YES/NO | Y | Y | Y | / | / | / |
| WAS A VISUAL CHECK NEEDED? YES/NO | N | Y | Y | / | / | / |

MANUALLY OPERATE THE SHAKER CYCLE USING LOCKOUT TAGOUT. CHECK THE FOLLOWING FOR GOOD OR BAD

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|---|--------|--------|--------|--------|--------|--------|
| DIVE BELT TENSION (WITH MOTOR LOCKED OUT) | Y | Y | Y | / | / | / |
| LOOSE BEARING MOUNTS ON SHAKER SHAFT | N | N | N | / | / | / |
| LOOSE OR MISSING BUSHINGS ON SHAKERS | N | N | N | / | / | / |
| INLET DAMPER POSITION AND OPERATION | Y | Y | Y | / | / | / |
| OUTLET DAMPER POSITION AND OPERATION | Y | Y | Y | / | / | / |
| OUTLET DAMPER CYLINDER OPERATION | Y | Y | Y | / | / | / |

WEEKLY TRIBOFLOW PROBE CLEANING

| BAGHOUSE | DATE | TIME | OPERATOR |
|------------------|---------|------|------------------|
| BLAST | / | / | / |
| REVERB | / | / | / |
| HARD LEAD | / | / | / |
| SUPPLEMENTAL | / | / | / |
| SPECIALITY ALLOY | 12-7-09 | 1pm | Murphy was clean |
| SOFT LEAD | / | / | / |
| DRYER | / | / | / |
| TORIT | / | / | / |
| SLAG TREATMENT | / | / | / |

WEEKLY BAGHOUSE OPERATOR REPORT FORM

SMT044
Rev 2
6/14/04DATE: 12/8/09BY: Murphy BAGHOUSE (CYCLE ONE): BLAST REVERB HL SL SUPP SP TORIT DRYER SLAG

SCREW ROTATION AND BIN COLLECTION CHECK

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| SHAFT ROTATION CORRECT YES/NO | Y | Y | Y | Y | / | / |
| NUMBER OF RAPS ON EACH CELL BIN | 6 | 6 | 6 | 6 | / | / |
| WAS THE BIN EMPTY? YES/NO | Y | Y | Y | Y | / | / |
| WAS A VISUAL CHECK NEEDED? YES/NO | Y | Y | Y | Y | / | / |

MANUALLY OPERATE THE SHAKER CYCLE USING LOCKOUT TAGOUT. CHECK THE FOLLOWING FOR GOOD OR BAD

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|---|--------|--------|--------|--------|--------|--------|
| DIVE BELT TENSION (WITH MOTOR LOCKED OUT) | Y | Y | Y | Y | / | / |
| LOOSE BEARING MOUNTS ON SHAKER SHAFT | Y | / | / | / | / | / |
| LOOSE OR MISSING BUSHINGS ON SHAKERS | Y | / | / | / | / | / |
| INLET DAMPER POSITION AND OPERATION | Y | Y | Y | Y | / | / |
| OUTLET DAMPER POSITION AND OPERATION | Y | Y | Y | Y | / | / |
| OUTLET DAMPER CYLINDER OPERATION | Y | Y | Y | Y | / | / |

WEEKLY TRIBOFLOW PROBE CLEANING

| BAGHOUSE | DATE | TIME | OPERATOR |
|------------------|---------|----------|-----------------------|
| BLAST | / | / | / |
| REVERB | / | / | / |
| HARD LEAD | / | / | / |
| SUPPLEMENTAL | / | / | / |
| SPECIALITY ALLOY | / | / | / |
| SOFT LEAD | / | / | / |
| DRYER | / | / | / |
| TORIT | 12-8-09 | 11:10 AM | Murphy was called but |
| SLAG TREATMENT | / | / | only cleaners present |

WEEKLY BAGHOUSE OPERATOR REPORT FORM

SMT044
Rev 2
6/14/04

DATE:

12-8-09

BY:

Mingo

BAGHOUSE (CYCLE ONE): BLAST REVERB HL SL SUPP SP TORIT DRYER SLAG

SCREW ROTATION AND BIN COLLECTION CHECK

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| SHAFT ROTATION CORRECT YES/NO | Y | Y | Y | / | / | / |
| NUMBER OF RAPS ON EACH CELL BIN | 2 | 2 | 2 | / | / | / |
| WAS THE BIN EMPTY? YES/NO | Y | Y | Y | / | / | / |
| WAS A VISUAL CHECK NEEDED? YES/NO | Y | Y | Y | / | / | / |

MANUALLY OPERATE THE SHAKER CYCLE USING LOCKOUT TAGOUT. CHECK THE FOLLOWING FOR GOOD OR BAD

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|---|--------|--------|--------|--------|--------|--------|
| DIVE BELT TENSION (WITH MOTOR LOCKED OUT) | Y | Y | Y | / | / | / |
| LOOSE BEARING MOUNTS ON SHAKER SHAFT | / | / | / | / | / | / |
| LOOSE OR MISSING BUSHINGS ON SHAKERS | / | / | / | / | / | / |
| INLET DAMPER POSITION AND OPERATION | Y | Y | Y | / | / | / |
| OUTLET DAMPER POSITION AND OPERATION | Y | Y | Y | / | / | / |
| OUTLET DAMPER CYLINDER OPERATION | Y | Y | Y | / | / | / |

WEEKLY TRIBOFLOW PROBE CLEANING

| BAGHOUSE | DATE | TIME | OPERATOR |
|------------------|---------|---------|----------------------|
| BLAST | / | / | / |
| REVERB | / | / | / |
| HARD LEAD | / | / | / |
| SUPPLEMENTAL | / | / | / |
| SPECIALITY ALLOY | / | / | / |
| SOFT LEAD | / | / | / |
| DRYER | 11-8-09 | 11:40am | Mingo was little bit |
| TORIT | / | / | dry cleaner Reser is |
| SLAG TREATMENT | / | / | / |

FRISCO SMELTER (862)

WEEKLY BAGHOUSE OPERATOR REPORT FORM

SMT044
Rev 2
6/14/04DATE: 12-8-09BY: Mungo BAGHOUSE (CYCLE ONE): BLAST REVERB HL SL SUPP SP TORIT DRYER SLAG

SCREW ROTATION AND BIN COLLECTION CHECK

| SHAFT ROTATION CORRECT YES/NO | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| NUMBER OF RAPS ON EACH CELL BIN | 25 | | | | | |
| WAS THE BIN EMPTY? YES/NO | N | | | | | |
| WAS A VISUAL CHECK NEEDED? YES/NO | N | | | | | |

MANUALLY OPERATE THE SHAKER CYCLE USING LOCKOUT TAGOUT. CHECK THE FOLLOWING FOR GOOD OR BAD

| DIVE BELT TENSION (WITH MOTOR LOCKED OUT) | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|---|--------|--------|--------|--------|--------|--------|
| LOOSE BEARING MOUNTS ON SHAKER SHAFT | Y | | | | | |
| LOOSE OR MISSING BUSHINGS ON SHAKERS | N | | | | | |
| INLET DAMPER POSITION AND OPERATION | Y | | | | | |
| OUTLET DAMPER POSITION AND OPERATION | Y | | | | | |
| OUTLET DAMPER CYLINDER OPERATION | Y | | | | | |

WEEKLY TRIBOFLOW PROBE CLEANING

| BAGHOUSE | DATE | TIME | OPERATOR |
|------------------|---------|------|-------------|
| BLAST | | | |
| REVERB | | | |
| HARD LEAD | | | |
| SUPPLEMENTAL | | | |
| SPECIALITY ALLOY | | | |
| SOFT LEAD | | | |
| DRYER | | | |
| TORIT | | | |
| SLAG TREATMENT | 12-8-09 | 3pm | Mungo Clean |

MONTHLY BAGHOUSE OPERATOR REPORT FORM

SMT043
Rev 2
6/14/04

DATE:

12-4-09

BY:

Mingo R

BAGHOUSE (CYCLE ONE)

BLAST

REVERB HL SL SUPP SP TORIT DRYER SLAG

FOLLOW SEVERAL COMPLETE SHAKE CYCLES OF THE BAGHOUSE. FOR EACH CELL DETERMINE THE FOLLOWING

| SET PT TIME PERIOD BETWEEN CYCLES - MINUTES | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|---|---------|---------|--------|---------|---------|--------|
| ACTUAL TIME BETWEEN CYCLES - MINUTES | 9min | 9min | 9min | 9min | 9min | |
| SET PT TIME FOR SHAKE CYCLES - SEC | 17.8sec | 17.8sec | 17 | 17.8sec | 17.8sec | |
| ACTUAL TIME FOR SHAKE CYCLES - SEC | 17.8sec | 17.8sec | 17 | 17.8sec | 17.8sec | |
| PRESSURE ACROSS CELL BEFORE SHAKE | 2 1/4 | 2 1/2 | 2 | 2 | 2 | |
| PRESSURE ACROSS CELL AFTER SHAKE | 1 1/2 | 2 | 1 | 1 | 2 | |

DAMPER CHECK

| CLOSE INLET DAMPER OK/BAD SEAL | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| CLOSE OUTLET DAMPER OK/BAD SEAL | OK | OK | OK | OK | OK | |
| PRESSURE ACROSS CELL ZERO? YES/NO | Y | Y | Y | Y | Y | |
| DAMPER CYLINDER CONNECTION LEAK? | Y | Y | Y | Y | Y | |

MONTHLY BAG TENSION CHECK

| YES OR NO | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|--------------------------------|--------|--------|--------|--------|--------|--------|
| BAG TENSION CHECKED & ADJUSTED | OK | OK | OK | OK | OK | |

PULSE JET CLEANING CYCLES

| SET PT TIME PERIOD BETWEEN PULSES | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| ACTUAL TIME PERIOD BETWEEN PULSES | | | | | | |

COMMENTS

FRISCO SMELTER (862)

MONTHLY BAGHOUSE OPERATOR REPORT FORM

SMT043
Rev 2
6/14/04

DATE:

12-4-09

BY:

Mmpo R

BAGHOUSE (CYCLE ONE): BLAST REVERB HL SL SUPP SP TORIT DRYER SLAG

FOLLOW SEVERAL COMPLETE SHAKE CYCLES OF THE BAGHOUSE. FOR EACH CELL DETERMINE THE FOLLOWING

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|---|---------------|---------------|---------------|---------------|---------------|---------------|
| SET PT TIME PERIOD BETWEEN CYCLES - MINUTES | <u>20min</u> | <u>12min</u> | <u>12min</u> | <u>12min</u> | <u>12min</u> | <u>12min</u> |
| ACTUAL TIME BETWEEN CYCLES - MINUTES | <u>12min</u> | <u>12min</u> | <u>12min</u> | <u>12min</u> | <u>12min</u> | <u>12min</u> |
| SET PT TIME FOR SHAKE CYCLES - SEC | <u>15 sec</u> | <u>15 sec</u> | <u>15 sec</u> | <u>15 sec</u> | <u>15 sec</u> | <u>15 sec</u> |
| ACTUAL TIME FOR SHAKE CYCLES - SEC | <u>15 sec</u> | <u>15 sec</u> | <u>15 sec</u> | <u>15 sec</u> | <u>15 sec</u> | <u>15 sec</u> |
| PRESSURE ACROSS CELL BEFORE SHAKE | <u>1</u> | <u>1 1/2</u> | <u>2</u> | <u>2</u> | <u>2</u> | <u>2</u> |
| PRESSURE ACROSS CELL AFTER SHAKE | <u>same</u> | <u>1</u> | <u>1</u> | <u>2</u> | <u>1</u> | <u>1</u> |

DAMPER CHECK

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| CLOSE INLET DAMPER OK/BAD SEAL | <u>OK</u> | <u>OK</u> | <u>OK</u> | <u>OK</u> | <u>OK</u> | <u>OK</u> |
| CLOSE OUTLET DAMPER OK/BAD SEAL | <u>OK</u> | <u>OK</u> | <u>OK</u> | <u>OK</u> | <u>OK</u> | <u>OK</u> |
| PRESSURE ACROSS CELL ZERO? YES/NO | <u>Y</u> | <u>Y</u> | <u>Y</u> | <u>Y</u> | <u>Y</u> | <u>Y</u> |
| DAMPER CYLINDER CONNECTION LEAK? | <u>Y</u> | <u>Y</u> | <u>Y</u> | <u>Y</u> | <u>Y</u> | <u>Y</u> |

MONTHLY BAG TENSION CHECK

| YES OR NO | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|--------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| BAG TENSION CHECKED & ADJUSTED | <u>OK</u> | <u>OK</u> | <u>OK</u> | <u>OK</u> | <u>OK</u> | <u>OK</u> |

PULSE JET CLEANING CYCLES

| SET PT TIME PERIOD BETWEEN PULSES | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|----------|----------|----------|----------|----------|----------|
| ACTUAL TIME PERIOD BETWEEN PULSES | <u>1</u> | <u>1</u> | <u>1</u> | <u>1</u> | <u>1</u> | <u>1</u> |

COMMENTS

MONTHLY BAGHOUSE OPERATOR REPORT FORM

SMT043
Rev 2
6/14/04

DATE:

12-4-09

BY:

Munroe

BAGHOUSE (CYCLE ONE): BLAST REVERB HL SL SUPP SP TORIT DRYER SLAG

FOLLOW SEVERAL COMPLETE SHAKE CYCLES OF THE BAGHOUSE. FOR EACH CELL DETERMINE THE FOLLOWING

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|---|--------|--------|--------|--------|--------|--------|
| SET PT TIME PERIOD BETWEEN CYCLES - MINUTES | 12 Min | 12 Min | 12 Min | 12 Min | 12 Min | 12 Min |
| ACTUAL TIME BETWEEN CYCLES - MINUTES | 12 Min | 12 Min | 12 Min | 12 Min | 12 Min | 12 Min |
| SET PT TIME FOR SHAKE CYCLES - SEC | 20 Sec | 20 Sec | 20 Sec | 20 Sec | 20 Sec | 20 Sec |
| ACTUAL TIME FOR SHAKE CYCLES - SEC | 20 Sec | 20 Sec | 20 Sec | 20 Sec | 20 Sec | 20 Sec |
| PRESSURE ACROSS CELL BEFORE SHAKE | 4 | 3 | 1 | 2 | | |
| PRESSURE ACROSS CELL AFTER SHAKE | 2 | 2 | same | 1 | | |

DAMPER CHECK

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| CLOSE INLET DAMPER OK/BAD SEAL | OK | OK | OK | OK | | |
| CLOSE OUTLET DAMPER OK/BAD SEAL | OK | OK | OK | OK | | |
| PRESSURE ACROSS CELL ZERO? YES/NO | Y | Y | Y | Y | | |
| DAMPER CYLINDER CONNECTION LEAK? | Y | Y | Y | Y | | |

MONTHLY BAG TENSION CHECK

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|--------------------------------|--------|--------|--------|--------|--------|--------|
| YES OR NO | OK | OK | OK | OK | | |
| BAG TENSION CHECKED & ADJUSTED | OK | OK | OK | OK | | |

PULSE JET CLEANING CYCLES

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| SET PT TIME PERIOD BETWEEN PULSES | | | | | | |
| ACTUAL TIME PERIOD BETWEEN PULSES | | | | | | |

COMMENTS

MONTHLY BAGHOUSE OPERATOR REPORT FORM

SMT043
Rev 2
6/14/04

DATE:

12-7-09

BY:

MurphyBAGHOUSE (CYCLE ONE): BLAST REVERB HL SL SUPP SP TORIT DRYER SLAG

FOLLOW SEVERAL COMPLETE SHAKE CYCLES OF THE BAGHOUSE. FOR EACH CELL DETERMINE THE FOLLOWING

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|---|--------|--------|--------|--------|--------|--------|
| SET PT TIME PERIOD BETWEEN CYCLES - MINUTES | 13 Min | 13 Min | 13 Min | 13 Min | 13 Min | 13 Min |
| ACTUAL TIME BETWEEN CYCLES - MINUTES | 13 Min | 13 Min | 13 Min | 13 Min | 13 Min | 13 Min |
| SET PT TIME FOR SHAKE CYCLES - SEC | 10 Sec | 10 Sec | 10 Sec | 10 Sec | 10 Sec | 10 Sec |
| ACTUAL TIME FOR SHAKE CYCLES - SEC | 10 Sec | 10 Sec | 10 Sec | 10 Sec | 10 Sec | 10 Sec |
| PRESSURE ACROSS CELL BEFORE SHAKE | 1 | 3 | 5 | 5 | 6 | 5 |
| PRESSURE ACROSS CELL AFTER SHAKE | same | 2 | 3 | 2 | 4 | 2 |

DAMPER CHECK

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| CLOSE INLET DAMPER OK/BAD SEAL | OK | OK | OK | OK | OK | OK |
| CLOSE OUTLET DAMPER OK/BAD SEAL | OK | OK | OK | OK | OK | OK |
| PRESSURE ACROSS CELL ZERO? YES/NO | N | Y | N | Y | Y | Y |
| DAMPER CYLINDER CONNECTION LEAK? | N | N | N | N | N | N |

MONTHLY BAG TENSION CHECK

| YES OR NO | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|--------------------------------|--------|--------|--------|--------|--------|--------|
| BAG TENSION CHECKED & ADJUSTED | OK | OK | OK | OK | OK | OK |

PULSE JET CLEANING CYCLES

| SET PT TIME PERIOD BETWEEN PULSES | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| ACTUAL TIME PERIOD BETWEEN PULSES | | | | | | |

COMMENTS

MONTHLY BAGHOUSE OPERATOR REPORT FORM

SMT043
Rev 2
6/14/04DATE: 12-4-09BY: Mingo BAGHOUSE (CYCLE ONE): BLAST REVERB HL SL (SUPP) SP TORIT DRYER SLAG

FOLLOW SEVERAL COMPLETE SHAKE CYCLES OF THE BAGHOUSE. FOR EACH CELL DETERMINE THE FOLLOWING

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|---|--------|--------|--------|--------|--------|--------|
| SET PT TIME PERIOD BETWEEN CYCLES - MINUTES | 16 Min | 16 Min | 16 Min | 16 Min | 16 Min | 16 Min |
| ACTUAL TIME BETWEEN CYCLES - MINUTES | 16 Min | 16 Min | 16 Min | 16 Min | 16 Min | 16 Min |
| SET PT TIME FOR SHAKE CYCLES - SEC | 10 sec | 10 sec | 10 sec | 10 sec | 10 sec | 10 sec |
| ACTUAL TIME FOR SHAKE CYCLES - SEC | 10 sec | 10 sec | 10 sec | 10 sec | 10 sec | 10 sec |
| PRESSURE ACROSS CELL BEFORE SHAKE | 2 | 1 | 3 | 3 | 2 | 0 |
| PRESSURE ACROSS CELL AFTER SHAKE | 1 | same | 2 | 2 | same | same |

DAMPER CHECK

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| CLOSE INLET DAMPER OK/BAD SEAL | OK | OK | OK | OK | OK | OK |
| CLOSE OUTLET DAMPER OK/BAD SEAL | OK | OK | OK | OK | OK | OK |
| PRESSURE ACROSS CELL ZERO? YES/NO | Y | Y | Y | Y | Y | Y |
| DAMPER CYLINDER CONNECTION LEAK? | Y | Y | Y | Y | Y | Y |

MONTHLY BAG TENSION CHECK

| YES OR NO | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|--------------------------------|--------|--------|--------|--------|--------|--------|
| BAG TENSION CHECKED & ADJUSTED | Y | Y | Y | Y | Y | Y |

PULSE JET CLEANING CYCLES

| SET PT TIME PERIOD BETWEEN PULSES | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| ACTUAL TIME PERIOD BETWEEN PULSES | 1 | 1 | 1 | 1 | 1 | 1 |

COMMENTS #6 Cell was off going through cleaning cycle

MONTHLY BAGHOUSE OPERATOR REPORT FORM

SMT043
Rev 2
6/14/04DATE: 12-7-09BY: maurice BAGHOUSE (CYCLE ONE): BLAST REVERB HL SL SUPP (C) TORIT DRYER SLAG

FOLLOW SEVERAL COMPLETE SHAKE CYCLES OF THE BAGHOUSE. FOR EACH CELL DETERMINE THE FOLLOWING

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|---|---------|---------|---------|--------|--------|--------|
| SET PT TIME PERIOD BETWEEN CYCLES - MINUTES | 10 mins | 10 mins | 10 mins | | | |
| ACTUAL TIME BETWEEN CYCLES - MINUTES | 10 mins | 10 mins | 10 mins | | | |
| SET PT TIME FOR SHAKE CYCLES - SEC | 10 sec | 10 sec | 10 sec | | | |
| ACTUAL TIME FOR SHAKE CYCLES - SEC | 10 sec | 10 sec | 10 sec | | | |
| PRESSURE ACROSS CELL BEFORE SHAKE | 2 | 2 | 2 1/2 | | | |
| PRESSURE ACROSS CELL AFTER SHAKE | same | same | 2 | | | |

DAMPER CHECK

| | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| CLOSE INLET DAMPER OK/BAD SEAL | OK | OK | OK | | | |
| CLOSE OUTLET DAMPER OK/BAD SEAL | OK | OK | OK | | | |
| PRESSURE ACROSS CELL ZERO? YES/NO | Y | Y | Y | | | |
| DAMPER CYLINDER CONNECTION LEAK? | | | | | | |

MONTHLY BAG TENSION CHECK

| YES OR NO | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|--------------------------------|--------|--------|--------|--------|--------|--------|
| BAG TENSION CHECKED & ADJUSTED | OK | OK | OK | | | |

PULSE JET CLEANING CYCLES

| SET PT TIME PERIOD BETWEEN PULSES | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| ACTUAL TIME PERIOD BETWEEN PULSES | | | | | | |

COMMENTS

MONTHLY BAGHOUSE OPERATOR REPORT FORM

SMT043
Rev 2
6/14/04DATE: 12-7-09BY: Murphy BAGHOUSE (CYCLE ONE): BLAST REVERB HL SL SUPP SP TORIT DRYER SLAG

FOLLOW SEVERAL COMPLETE SHAKE CYCLES OF THE BAGHOUSE. FOR EACH CELL DETERMINE THE FOLLOWING

| SET PT TIME PERIOD BETWEEN CYCLES - MINUTES | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|---|--------|--------|--------|--------|--------|--------|
| ACTUAL TIME BETWEEN CYCLES - MINUTES | / | / | / | / | / | / |
| SET PT TIME FOR SHAKE CYCLES - SEC | / | / | / | / | / | / |
| ACTUAL TIME FOR SHAKE CYCLES - SEC | 5 | 1 1/2 | 6 | 6 | / | / |
| PRESSURE ACROSS CELL BEFORE SHAKE | None | None | None | None | / | / |
| PRESSURE ACROSS CELL AFTER SHAKE | None | None | None | None | / | / |

DAMPER CHECK

| CLOSE INLET DAMPER OK/BAD SEAL | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| CLOSE OUTLET DAMPER OK/BAD SEAL | OK | OK | OK | OK | / | / |
| PRESSURE ACROSS CELL ZERO? YES/NO | OK | OK | OK | OK | / | / |
| DAMPER CYLINDER CONNECTION LEAK? | Y | Y | Y | Y | / | / |

MONTHLY BAG TENSION CHECK

| YES OR NO | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|--------------------------------|--------|--------|--------|--------|--------|--------|
| BAG TENSION CHECKED & ADJUSTED | / | / | / | / | / | / |

PULSE JET CLEANING CYCLES

| SET PT TIME PERIOD BETWEEN PULSES | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|---------|---------|---------|---------|--------|--------|
| ACTUAL TIME PERIOD BETWEEN PULSES | 5.5 sec | 5.5 sec | 5.5 sec | 5.5 sec | / | / |

COMMENTS

MONTHLY BAGHOUSE OPERATOR REPORT FORM

SMT043
Rev 2
6/14/04DATE: 12-7-09BY: Marpk BAGHOUSE (CYCLE ONE): BLAST REVERB HL SL SUPP SP TORIT DRYER SLAG

FOLLOW SEVERAL COMPLETE SHAKE CYCLES OF THE BAGHOUSE. FOR EACH CELL DETERMINE THE FOLLOWING

| SET PT TIME PERIOD BETWEEN CYCLES - MINUTES | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|---|--------|--------|--------|--------|--------|--------|
| ACTUAL TIME BETWEEN CYCLES - MINUTES | / | / | / | / | / | / |
| SET PT TIME FOR SHAKE CYCLES - SEC | / | / | / | / | / | / |
| ACTUAL TIME FOR SHAKE CYCLES - SEC | 2 | 4 | 4 | / | / | / |
| PRESSURE ACROSS CELL BEFORE SHAKE | same | same | same | / | / | / |
| PRESSURE ACROSS CELL AFTER SHAKE | / | / | / | / | / | / |

DAMPER CHECK

| CLOSE INLET DAMPER OK/BAD SEAL | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| CLOSE OUTLET DAMPER OK/BAD SEAL | OK | OK | OK | / | / | / |
| PRESSURE ACROSS CELL ZERO? YES/NO | OK | OK | OK | / | / | / |
| DAMPER CYLINDER CONNECTION LEAK? | Y | Y | Y | / | / | / |

MONTHLY BAG TENSION CHECK

| YES OR NO | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|--------------------------------|--------|--------|--------|--------|--------|--------|
| BAG TENSION CHECKED & ADJUSTED | OK | OK | OK | / | / | / |

PULSE JET CLEANING CYCLES

| SET PT TIME PERIOD BETWEEN PULSES | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|---------|---------|---------|--------|--------|--------|
| ACTUAL TIME PERIOD BETWEEN PULSES | 5.5 sec | 5.5 sec | 5.5 sec | / | / | / |

COMMENTS

MONTHLY BAGHOUSE OPERATOR REPORT FORM

SMT043
Rev 2
6/14/04

DATE:

12-7-09

BY:

Murphy

BAGHOUSE (CYCLE ONE): BLAST REVERB HL SL SUPP SP TORIT DRYER

SLAG

FOLLOW SEVERAL COMPLETE SHAKE CYCLES OF THE BAGHOUSE. FOR EACH CELL DETERMINE THE FOLLOWING

| SET PT TIME PERIOD BETWEEN CYCLES - MINUTES | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|---|--------|--------|--------|--------|--------|--------|
| ACTUAL TIME BETWEEN CYCLES - MINUTES | / | / | / | / | / | / |
| SET PT TIME FOR SHAKE CYCLES - SEC | / | / | / | / | / | / |
| ACTUAL TIME FOR SHAKE CYCLES - SEC | 3 | / | / | / | / | / |
| PRESSURE ACROSS CELL BEFORE SHAKE | / | / | / | / | / | / |
| PRESSURE ACROSS CELL AFTER SHAKE | / | / | / | / | / | / |

DAMPER CHECK

| CLOSE INLET DAMPER OK/BAD SEAL | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| CLOSE OUTLET DAMPER OK/BAD SEAL | OK | / | / | / | / | / |
| PRESSURE ACROSS CELL ZERO? YES/NO | OK | / | / | / | / | / |
| DAMPER CYLINDER CONNECTION LEAK? | OK | / | / | / | / | / |

MONTHLY BAG TENSION CHECK

| YES OR NO | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|--------------------------------|--------|--------|--------|--------|--------|--------|
| BAG TENSION CHECKED & ADJUSTED | OK | / | / | / | / | / |

PULSE JET CLEANING CYCLES

| SET PT TIME PERIOD BETWEEN PULSES | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| ACTUAL TIME PERIOD BETWEEN PULSES | / | / | / | / | / | / |

COMMENTS

QUARTERLY BAGHOUSE INSPECTION REPORT

NAME: JOSEL, Ming R. Kenneth W. Ernesto 6 SHIFT: A

BAGHOUSE FAN INSPECTION

1ST 2ND 3RD 4TH

| BAGHOUSE FAN NAME | DATE INSPECTED | BEARINGS INSPECTED | FAN BLADE CHECKED AND | INITIALS |
|--------------------|----------------|--------------------|-----------------------|----------|
| REVERB BAGHOUSE | 10-6-09 | yes | yes | MR KH |
| BLAST BAGHOUSE | 10-6-09 | yes | yes | MR KH |
| HARD LEAD BAGHOUSE | 10-6-09 | yes | yes | MR KH |
| SOFT LEAD BAGHOUSE | 10-6-09 | yes | yes | MR KH |
| DRYER BAGHOUSE | 10-6-09 | yes | yes | MR KH |
| SUPPLIMENTAL | 10-6-09 | yes | yes | MR KH |
| SPECIALTY ALLOY | 10-6-09 | yes | yes | MR KH |
| TORIT | 10-6-09 | yes | yes | MR KH |
| SLAG TREATMENT | 10-6-09 | yes | yes | MR KH |

BAGHOUSE CLEAN SIDE INSPECTION

RECORD EACH CELL AS CHECKED AFTER INSPECTION AND CLEAN UP

| BAGHOUSE NAME | DATE | CELL 1 | CELL 2 | CELL 3 | CELL 4 | CELL 5 | CELL 6 |
|--------------------|---------|--------|--------|--------|--------|--------|--------|
| REVERB BAGHOUSE | 10/6/09 | OK | OK | OK | OK | OK | OK |
| BLAST BAGHOUSE | 10/6/09 | OK | OK | OK | OK | OK | OK |
| HARD LEAD BAGHOUSE | 10/6/09 | OK | OK | OK | OK | OK | OK |
| SOFT LEAD BAGHOUSE | 10/6/09 | OK | OK | OK | OK | OK | OK |
| DRYER BAGHOUSE | 10/6/09 | OK | OK | OK | OK | OK | OK |
| SUPPLIMENTAL | 10/8/09 | OK | ✓ | ✓ | ✓ | ✓ | ✓ |
| SPECIALTY ALLOY | 10/6/09 | OK | OK | OK | OK | OK | OK |
| TORIT | 10/6/09 | OK | OK | OK | OK | OK | OK |
| SLAG TREATMENT | 10/6/09 | OK | OK | OK | OK | OK | OK |

COMMENTS SUPPLIMENTAL Bd. Cells 2 thru 6 needs to be
VACUUM



FRISCO SMELTER (862)

Baghouse Broken Bag Detector Alarm Occurrences

SMT048
Rev 1
6/21/04

NOV
09

All broken bag detector alarms were corrected using the procedures in Appendix D of the Frisco Baghouse SOP.

| DATE | LOCATION | CAUSE | CORRECTIVE ACTION* |
|---------|----------|----------------------|---|
| 11-1-09 | Dryer BH | 220AM False Alarm | Reset |
| 11-4-09 | Leach BH | 9AM False Alarm | #2 Cell found 3 bags with small holes replaced all 5 bags |
| 11-4-09 | Leach BH | 10:15 AM False Alarm | Reset |
| 11-4-09 | Leach BH | 11AM False Alarm | Reset |
| 11-4-09 | Leach BH | 12:50pm False Alarm | Reset |
| 11-5-09 | Leach BH | 7:30AM False Alarm | Clean probe Reset |
| 11-5-09 | Leach BH | 8:10AM False Alarm | Clean probe Reset |
| 11-5-09 | Leach BH | 9AM False Alarm | Clean probe Reset |
| 11-5-09 | Leach BH | 5PM False Alarm | Clean probe Reset |
| 11-5-09 | Leach BH | 7:40pm False Alarm | Clean probe Reset |
| 11-5-09 | Leach BH | 10 PM False Alarm | Reset |
| 11-5-09 | Leach BH | 10:40pm False Alarm | Reset |
| 11-5-09 | Leach BH | 12:40AM False Alarm | Reset |
| 11-5-09 | Leach BH | 2AM False Alarm | Reset |
| 11-5-09 | Dryer BH | 2:10AM False Alarm | Reset |
| 11-6-09 | Dryer BH | 7:22AM False Alarm | Clean probe Reset |

* As specified in the Baghouse SOP, Bag replacement includes isolation of the cell, inspection, replacement and cleaning of the cell.



bohr

mc

Appendix CAA D

Page 53 of 80

Visible Emissions Observation Form Quarterly Inspection

The following sources were observed for visible emissions:

- ☒ Stationary Vents.
- ☒ Building, enclosed facility, or other structure.
- ☒ All other sources.

I, CARLOS LISCANO, affirm that visible emissions were not present during the visible observation of the sources listed above on this date 11/19/09.

Signed: Carlos Liscano

Dated: 11/19/09

Vent - Any duct, stack, chimney, flue, conduit, or other device used to conduct air contaminants into the atmosphere.

EXIDE TECHNOLOGIES

FRISCO

FISCAL MONTH OF:

November 2009

| DATE: | BREAKER SCHEDULE | | | REVERB SCHEDULE | | | BLAST SCHEDULE | | | CASTING SCHEDULE | | | OXIDE PRODUCTION | | | LEAD SHIPPED | | SALT | |
|-------|------------------|-------|-------|-----------------|-------|-------|----------------|-------|-------|------------------|-------|--------|------------------|-------|-------|--------------|-------|-------|-------|
| | FCST | MTD | DAILY | FCST | MTD | DAILY | FCST | MTD | DAILY | Hard | Soft | ACTUAL | FCST | MTD | DAILY | DAILY | MTD | DAILY | MTD |
| 11/01 | 142 | 83 | 185 | 189 | 185 | 189 | 90 | 89 | 89 | 217 | 217 | 117 | 116 | 232 | 0 | 0 | 0 | 88 | 88 |
| TOTAL | 142 | 83 | 185 | 189 | 185 | 189 | 90 | 89 | 89 | 217 | 217 | 117 | 116 | 232 | 0 | 0 | 0 | 88 | 88 |
| 11/02 | 284 | 289 | 186 | 186 | 186 | 186 | 90 | 104 | 104 | 217 | 217 | -24 | 97 | 73 | 86 | 138 | 804 | 48 | 48 |
| 11/03 | 142 | 0 | 186 | 143 | 186 | 143 | 90 | 97 | 111 | 217 | 217 | 216 | 111 | 326 | 86 | 111 | 327 | 21 | 21 |
| 11/04 | 284 | 271 | 186 | 186 | 186 | 186 | 90 | 116 | 116 | 217 | 217 | 118 | 108 | 326 | 87 | 42 | 244 | 44 | 44 |
| 11/05 | 284 | 240 | 186 | 186 | 186 | 186 | 90 | 104 | 104 | 217 | 217 | 114 | 234 | 348 | 87 | 0 | 392 | 64 | 64 |
| 11/06 | 284 | 288 | 186 | 180 | 186 | 180 | 90 | 90 | 90 | 217 | 217 | 0 | 227 | 227 | 0 | 0 | 270 | 35 | 35 |
| 11/07 | 142 | 77 | 186 | 186 | 186 | 186 | 90 | 108 | 108 | 217 | 217 | 123 | 118 | 241 | 0 | 0 | 0 | 36 | 36 |
| 11/08 | 142 | 144 | 186 | 183 | 186 | 183 | 90 | 117 | 117 | 217 | 217 | 0 | 116 | 116 | 0 | 0 | 0 | 36 | 36 |
| TOTAL | 1,704 | 1,372 | 1,808 | 1,408 | 1,808 | 1,408 | 720 | 825 | 825 | 1,336 | 1,336 | 840 | 1,336 | 1,708 | 348 | 201 | 4,837 | 371 | 371 |
| 11/09 | 284 | 285 | 185 | 179 | 185 | 179 | 90 | 118 | 118 | 217 | 217 | -8 | 69 | 81 | 87 | 0 | 322 | 63 | 63 |
| 11/10 | 284 | 283 | 185 | 199 | 185 | 199 | 90 | 119 | 119 | 217 | 217 | 0 | 226 | 226 | 87 | 47 | 333 | 43 | 43 |
| 11/11 | 142 | 144 | 186 | 172 | 186 | 172 | 90 | 140 | 140 | 217 | 217 | 119 | 229 | 348 | 87 | 103 | 288 | 86 | 86 |
| 11/12 | 284 | 287 | 186 | 197 | 186 | 197 | 90 | 107 | 107 | 217 | 217 | 239 | 116 | 344 | 87 | 96 | 427 | 61 | 61 |
| 11/13 | 284 | 282 | 186 | 172 | 186 | 172 | 90 | 109 | 109 | 217 | 217 | 0 | 221 | 221 | 0 | 0 | 370 | 47 | 47 |
| 11/14 | 142 | 129 | 186 | 160 | 186 | 160 | 90 | 116 | 116 | 217 | 217 | 118 | 117 | 236 | 0 | 0 | 0 | 47 | 47 |
| 11/15 | 142 | 124 | 186 | 177 | 186 | 177 | 90 | 84 | 84 | 217 | 217 | 109 | 116 | 226 | 0 | 0 | 0 | 49 | 49 |
| TOTAL | 5,208 | 2,916 | 2,828 | 2,732 | 2,828 | 2,732 | 1,200 | 1,200 | 1,200 | 1,385 | 1,385 | 1,385 | 1,385 | 1,408 | 804 | 606 | 3,877 | 737 | 737 |
| 11/16 | 284 | 288 | 186 | 187 | 186 | 187 | 90 | 103 | 103 | 218 | 218 | 121 | 109 | 230 | 87 | 0 | 287 | 0 | 0 |
| 11/17 | 284 | 181 | 186 | 190 | 186 | 190 | 90 | 118 | 118 | 218 | 218 | -14 | 206 | 191 | 87 | 63 | 226 | 26 | 26 |
| 11/18 | 142 | 131 | 186 | 194 | 186 | 194 | 90 | 108 | 108 | 218 | 218 | 116 | 116 | 232 | 87 | 100 | 327 | 80 | 80 |
| 11/19 | 284 | 213 | 186 | 172 | 186 | 172 | 90 | 106 | 106 | 218 | 218 | 0 | 111 | 111 | 87 | 47 | 367 | 62 | 62 |
| 11/20 | 284 | 230 | 186 | 199 | 186 | 199 | 90 | 101 | 101 | 218 | 218 | 122 | 223 | 346 | 0 | 0 | 369 | 66 | 66 |
| 11/21 | 142 | 211 | 186 | 189 | 186 | 189 | 90 | 105 | 105 | 218 | 218 | 116 | 111 | 226 | 0 | 0 | 0 | 66 | 66 |
| 11/22 | 142 | 70 | 186 | 187 | 186 | 187 | 90 | 74 | 74 | 218 | 218 | 110 | 218 | 326 | 0 | 0 | 0 | 66 | 66 |
| TOTAL | 4,828 | 4,108 | 4,398 | 4,048 | 4,398 | 4,048 | 1,908 | 2,441 | 2,441 | 4,791 | 4,791 | 1,908 | 2,393 | 4,124 | 1,443 | 704 | 4,132 | 1,446 | 1,446 |
| 11/23 | 284 | 261 | 185 | 201 | 185 | 201 | 90 | 86 | 86 | 218 | 218 | 0 | 111 | 111 | 87 | 49 | 281 | 73 | 73 |
| 11/24 | 284 | 288 | 186 | 141 | 186 | 141 | 90 | 116 | 116 | 218 | 218 | 0 | 228 | 228 | 87 | 118 | 327 | 70 | 70 |
| 11/25 | 284 | 275 | 186 | 144 | 186 | 144 | 90 | 119 | 119 | 218 | 218 | 113 | 219 | 332 | 87 | 163 | 410 | 69 | 69 |
| 11/26 | 0 | 0 | 186 | 186 | 186 | 186 | 90 | 98 | 98 | 218 | 218 | 0 | 0 | 0 | 87 | 0 | 0 | 69 | 69 |
| 11/27 | 284 | 165 | 186 | 182 | 186 | 182 | 90 | 112 | 112 | 218 | 218 | 118 | 211 | 329 | 0 | 0 | 0 | 69 | 69 |
| 11/28 | 142 | 103 | 186 | 164 | 186 | 164 | 90 | 92 | 92 | 218 | 218 | 125 | 114 | 239 | 0 | 0 | 0 | 69 | 69 |
| 11/29 | 142 | 28 | 186 | 164 | 186 | 164 | 90 | 92 | 92 | 218 | 218 | 116 | 114 | 229 | 0 | 0 | 0 | 61 | 61 |
| TOTAL | 6,308 | 6,291 | 6,468 | 6,231 | 6,468 | 6,231 | 2,818 | 3,208 | 3,208 | 6,297 | 6,297 | 2,818 | 3,208 | 6,287 | 1,308 | 1,808 | 6,198 | 1,408 | 1,408 |
| 11/30 | 284 | 239 | 186 | 166 | 186 | 166 | 90 | 112 | 112 | 218 | 218 | 123 | 226 | 346 | 0 | 0 | 371 | 46 | 46 |
| TOTAL | 6,552 | 6,204 | 6,308 | 6,297 | 6,308 | 6,297 | 3,270 | 3,448 | 3,448 | 6,534 | 6,534 | 3,270 | 3,448 | 6,506 | 1,308 | 1,808 | 6,403 | 1,446 | 1,446 |

6X6
 Actual 7,227
 % 96%
 Forecast 6,960
 Actual 6,936
 % 100%

MONTH OF

PRISCO CASTING PRODUCTION SHEET

November
Today's Date 12/2/2006

BUSINESS

PLAN

8525

| ALLOT | | OW AG | | SOUTH | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | SHIP | | | |
|-------|--|-------|--|-------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------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|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|------|--|--|--|

Hard 2.405
Soft 4.830

W48

DATE: 12-17-09

SHIFT: 4G1

OPERATOR: JH

SMT003

LOADER: 924H

BUCKET SIZE: 6000

FEEDER SET PT: 28

Rev: 4

6/04/04

| MATERIAL | HOUR 1 | HOUR 2 | HOUR 3 | HOUR 4 | HOUR 5 | HOUR 6 | HOUR 7 | HOUR 8 |
|---------------------------|------------|--------|--------|--------|--------|--------|--------|--------|
| TIME OF DAY | 7-8 | 8-9 | 9-10 | 10-11 | 11-12 | 12-1 | 1-2 | 2-3 |
| NUMBER OF BUCKETS | 1111 | 111 | 1111 | 1111 | 1111 | 1111 | 0 | 1 |
| NUMBER OF COKE SHOVELS | 12x4 48 | 36 | 48 | 48 | 48 | 48 | / | 12 |
| NUMBER OF SODA ASH SHOVEL | 40 | 30 | 40 | 40 | 40 | 40 | / | 10 |
| TOTAL | 4 | 3 | 4 | 4 | 4 | 4 | 0 | 1 |

OPERATING PROBLEMS

| | | | |
|--------------------|------------------------|-------------------------|-----------------------------|
| 1 Hot Molds | 21 Brick Damage | 41 Air Clutch Problems | 61 Burner Problems |
| 2 Furnace Full | 22 Burner Filters | 42 Bag House Problems | 62 Cascading Screw Belts |
| 3 Hole in Launder | 23 Crust in Slag | 43 Baghouse Problems | 63 Cascading Screw Broken |
| 4 Limit Switch | 24 Dirty Launder | 44 Baghouse Screws | 64 Cascading Screw Jammed |
| 5 Mixer On | 25 Dross Chunks | 45 Broken Feed Belt | 65 Clean Heat Exchange |
| 6 No Material | 26 Dryer Belt Broken | 46 Large Pieces of Feed | 66 Cold Lead Well |
| 7 No Oxygen | 27 Dryer Belt Jammed | 47 Large Plastics | 67 Cooling Water Problems |
| 8 No Pot Dross | 28 Dryer Chute Plugged | 48 Lead Level Too High | 68 No Space to Set Slag Pot |
| 9 No Power | 29 Dryer Duct Problems | 49 Lead Well Problems | 69 Pay Loader Problems |
| 10 No Tape | 30 Feed Belt Jam | 50 No Coke Fines | 70 Ram Feed Hopper Plugged |
| 11 Ram Jammed | 31 Fork Lift Problems | 51 No Natural Gas | 71 Ram Feed Screw Belts |
| 12 Skim Bay Dirty | 32 Full Kettle | 52 No Room to Dump | 72 Ram Feed Screw Broken |
| 13 Slag Breakout | 33 Hydraulic Problems | 53 No Slag Pots | 73 Ram Feed Screw Jammed |
| 14 Slag Foaming | 34 Lack of Ventilation | 54 No Soda Ash | 74 Reverb Too Hot / Cold |
| 15 Slag Level Bad | 35 Pump in Kettle | 55 Plugged Lead Well | 75 Too Little Coke Fines |
| 16 Slag Thick | 36 Slag in Lead Well | 56 Ram Hopper Clogged | 76 Too Many People in RMSB |
| 17 Tap Burners | 37 Slag Y Problems | 57 Reverb Smoking | 77 Too Much Dross in Kettle |
| 18 Too Little Feed | 38 Too Little Soda Ash | 58 Scale Problems | 78 Too Much Flue Dust |
| 19 Too Much Feed | 39 Weather Conditions | 59 Screen Problems | 79 Other |
| 20 Too Much Slag | 40 WWT Problems | 60 Shredder Operation | |

| FROM | TO | REASON NUMBER | COMMENTS |
|------|----|---------------|----------|
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DATE: 12/12/09

SHIFT: B-6-H2

OPERATOR: P-L-E

SMT003

LOADER: 924 H

BUCKET SIZE: 6000

FEEDER SET PT: 9

Rev: 4

6/04/04

| MATERIAL | HOUR 1 | HOUR 2 | HOUR 3 | HOUR 4 | HOUR 5 | HOUR 6 | HOUR 7 | HOUR 8 |
|---------------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| TIME OF DAY | 3=4 | 4=5 | 5=6 | 6=7 | 7=8 | 8=9 | 9=10 | 10=11 |
| NUMBER OF BUCKETS | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 |
| NUMBER OF COKE SHOVELS | 15x4 60 | 15x4 60 | 15x4 60 | 18x4 60 | 15x4 60 | 18x4 60 | 15x4 60 | 15x4 60 |
| NUMBER OF SODA ASH SHOVEL | 10x4 40 | 10x4 40 | 10x4 40 | 10x4 40 | 10x4 40 | 16x4 40 | 10x4 40 | 10x4 40 |
| TOTAL | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |

OPERATING PROBLEMS

| | | | |
|--------------------|------------------------|-------------------------|-----------------------------|
| 1 Hot Molds | 21 Brick Damage | 41 Air Clutch Problems | 61 Burner Problems |
| 2 Furnace Full | 22 Burner Filters | 42 Bag House Problems | 62 Cascading Screw Belts |
| 3 Hole in Launder | 23 Crust in Slag | 43 Baghouse Problems | 63 Cascading Screw Broken |
| 4 Limit Switch | 24 Dirty Launder | 44 Baghouse Screws | 64 Cascading Screw Jammed |
| 5 Mixer On | 25 Dross Chunks | 45 Broken Feed Belt | 65 Clean Heat Exchange |
| 6 No Material | 26 Dryer Belt Broken | 46 Large Pieces of Feed | 66 Cold Lead Well |
| 7 No Oxygen | 27 Dryer Belt Jammed | 47 Large Plastics | 67 Cooling Water Problems |
| 8 No Pot Dross | 28 Dryer Chute Plugged | 48 Lead Level Too High | 68 No Space to Set Slag Pot |
| 9 No Power | 29 Dryer Duct Problems | 49 Lead Well Problems | 69 Pay Loader Problems |
| 10 No Tape | 30 Feed Belt Jam | 50 No Coke Fines | 70 Ram Feed Hopper Plugged |
| 11 Ram Jammed | 31 Fork Lift Problems | 51 No Natural Gas | 71 Ram Feed Screw Belts |
| 12 Skim Bay Dirty | 32 Full Kettle | 52 No Room to Dump | 72 Ram Feed Screw Broken |
| 13 Slag Breakout | 33 Hydraulic Problems | 53 No Slag Pots | 73 Ram Feed Screw Jammed |
| 14 Slag Foaming | 34 Lack of Ventilation | 54 No Soda Ash | 74 Reverb Too Hot / Cold |
| 15 Slag Level Bad | 35 Pump in Kettle | 55 Plugged Lead Well | 75 Too Little Coke Fines |
| 16 Slag Thick | 36 Slag in Lead Well | 56 Ram Hopper Clogged | 76 Too Many People in RMSB |
| 17 Tap Burners | 37 Slag Y Problems | 57 Reverb Smoking | 77 Too Much Dross in Kettle |
| 18 Too Little Feed | 38 Too Little Soda Ash | 58 Scale Problems | 78 Too Much Flue Dust |
| 19 Too Much Feed | 39 Weather Conditions | 59 Screen Problems | 79 Other |
| 20 Too Much Slag | 40 WWT Problems | 60 Shredder Operation | |

| FROM | TO | REASON NUMBER | COMMENTS |
|------|----|---------------|----------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

DATE: 12/17/09

SHIFT: C G#4

OPERATOR: JR

SMT003

LOADER: 924-H

BUCKET SIZE: 6000

FEEDER SET PT: 28

Rev: 4
6/04/04

| MATERIAL | HOUR 1 | HOUR 2 | HOUR 3 | HOUR 4 | HOUR 5 | HOUR 6 | HOUR 7 | HOUR 8 |
|---------------------------|------------|------------|------------|------------|------------|------------|------------|--------------|
| TIME OF DAY | 11:00 | 12:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 7:00 |
| NUMBER OF BUCKETS | 111 | 1111 | 111 | 1111 | 111 | 111 | 11 | 0 |
| NUMBER OF COKE SHOVELS | 20x3 60 | 20x4 80 | 20x3 60 | 15x4 60 | 15x3 45 | 15x3 45 | 15x2 30 | 0 |
| NUMBER OF SODA ASH SHOVEL | 10x3 30 | 10x4 40 | 10x3 30 | 10x4 40 | 10x3 30 | 10x3 30 | 10x2 20 | 0 |
| TOTAL | 3 | 4 | 3 | 4 | 3 | 3 | 2 | 0 |

OPERATING PROBLEMS

| | | | |
|--------------------|------------------------|-------------------------|-----------------------------|
| 1 Hot Molds | 21 Brick Damage | 41 Air Clutch Problems | 61 Burner Problems |
| 2 Furnace Full | 22 Burner Filters | 42 Bag House Problems | 62 Cascading Screw Belts |
| 3 Hole in Launder | 23 Crust in Slag | 43 Baghouse Problems | 63 Cascading Screw Broken |
| 4 Limit Switch | 24 Dirty Launder | 44 Baghouse Screws | 64 Cascading Screw Jammed |
| 5 Mixer On | 25 Dross Chunks | 45 Broken Feed Belt | 65 Clean Heat Exchange |
| 6 No Material | 26 Dryer Belt Broken | 46 Large Pieces of Feed | 66 Cold Lead Well |
| 7 No Oxygen | 27 Dryer Belt Jammed | 47 Large Plastics | 67 Cooling Water Problems |
| 8 No Pot Dross | 28 Dryer Chute Plugged | 48 Lead Level Too High | 68 No Space to Set Slag Pot |
| 9 No Power | 29 Dryer Duct Problems | 49 Lead Well Problems | 69 Pay Loader Problems |
| 10 No Tape | 30 Feed Belt Jam | 50 No Coke Fines | 70 Ram Feed Hopper Plugged |
| 11 Ram Jammed | 31 Fork Lift Problems | 51 No Natural Gas | 71 Ram Feed Screw Belts |
| 12 Skim Bay Dirty | 32 Full Kettle | 52 No Room to Dump | 72 Ram Feed Screw Broken |
| 13 Slag Breakout | 33 Hydraulic Problems | 53 No Slag Pots | 73 Ram Feed Screw Jammed |
| 14 Slag Foaming | 34 Lack of Ventilation | 54 No Soda Ash | 74 Reverb Too Hot / Cold |
| 15 Slag Level Bad | 35 Pump in Kettle | 55 Plugged Lead Well | 75 Too Little Coke Fines |
| 16 Slag Thick | 36 Slag in Lead Well | 56 Ram Hopper Clogged | 76 Too Many People in RMSB |
| 17 Tap Burners | 37 Slag Y Problems | 57 Reverb Smoking | 77 Too Much Dross in Kettle |
| 18 Too Little Feed | 38 Too Little Soda Ash | 58 Scale Problems | 78 Too Much Flue Dust |
| 19 Too Much Feed | 39 Weather Conditions | 59 Screen Problems | 79 Other |
| 20 Too Much Slag | 40 WWT Problems | 60 Shredder Operation | |

| FROM | TO | REASON NUMBER | COMMENTS |
|------|----|---------------|---|
| | | 79 Dross | Burner problems shut off by |
| | | | Hwy $\approx 2\frac{1}{2}$ down |
| | | 79 | stop feeding to empty Dryer |
| | | | shut, 5:40 am / $\approx 1\frac{1}{2}$ hr |
| | | | ≈ 4 hr total |
| | | | |
| | | | |
| | | | |

**BLAST FURNACE
CHARGE SHEET**

SHIFT: **AG#1**

DATE: **12-17-09**

SUPERVISOR'S INITIALS: **M.S.**

| TIME OF TAP | | KETTLE MEASUREMENTS | | | BLAST DOWNTIME | | | | | |
|-------------|------------|------------------------|-------------------|-------------|--------------------|------------------|------|----|--|--|
| | | KETTLE | TIME | INCHES DOWN | TOTAL INCHES | PROBLEM | FROM | TO | | |
| 1 | 7:21 | B- B- | 7:00 | 50 | | FRONTEND LOADER | | | | |
| 2 | 7:52 | | 8:00 | 46" | 4" | FORK LIFT | | | | |
| 3 | 8:18 | | 9:00 | 42" | 4" | SKIP HOIST | | | | |
| 4 | 8:40 | | 10:00 | 37" | 5" | BLAST JACKET | | | | |
| 5 | 9:10 | | 11:00 | 31" | 5" | TAP BLOCK | | | | |
| 6 | 9:35 | | 12:00 | 27" | 5" | LANCE BLAST | | | | |
| 7 | 9:59 | | 1:00 | 22" | 5" | THIMBLE | | | | |
| 8 | 10:10 | | 2:00 | 17" | 5" | UPCOMMER | | | | |
| 9 | 10:20 | | 3:00 | 12" | 5" | AFTERBURNER | | | | |
| 10 | 10:30 | | | | | HEAT EXCHANGE | | | | |
| 11 | 10:57 | | | | BAG HOUSE | | | | | |
| 12 | 11:25 | | | | SHAFT JACKET | | | | | |
| 13 | 11:50 | | | | DONUT LEAKS | | | | | |
| 14 | 12:11 | | | | CRUCIBLE | | | | | |
| 15 | 12:35 | | | | POWER FAILURE | | | | | |
| 16 | 12:59 | | | | TUYERS | | | | | |
| 17 | 1:21 | | | | COLD FURNACE | | | | | |
| 18 | 1:47 | | | | THERMOCOUPLE | | | | | |
| 19 | 2:10 | TOTAL INCHES FOR SHIFT | | | 38" | BURN DOWN | | | | |
| 20 | 2:20 | TOTAL TONS FOR SHIFT | | | 32.5 tons | WWT | | | | |
| 21 | 2:40 | | | | | FURNACE SMOKING | | | | |
| 22 | 2:58 | | | | | FURNACE PRESSURE | | | | |
| 23 | | | | | | OTHER | | | | |
| 24 | | CHARGE MAKE UP | | | TOTAL # OF CHARGES | OPERATORS | | | | |
| 25 | | MATERIAL | WEIGHT | | | | | | | |
| 26 | | COKE | 300 | | 18 | Miguel - Daniel | | | | |
| 27 | | CAST IRON | 280 | | | | | | | |
| 28 | | REV SLAG | 4000/3000 | | COMMENTS | | | | | |
| 29 | | POT DROSS | | | | | | | | |
| 30 | | RERUN SLAG | | | | | | | | |
| | TOTAL SLAG | PLATES | 0/1000 | | | | | | | |
| | BUTTONS | PLANT SCRAP | | | | | | | | |
| | | SAND | | | | | | | | |
| | | ROCK | 250 | | | | | | | |
| | | OTHER | 1 SB every charge | | | | | | | |

**BLAST FURNACE
CHARGE SHEET**

SHIFT: **B**

DATE: **12-17-09**

SUPERVISOR'S INITIALS: **G-G**

| TIME OF TAP | | KETTLE MEASUREMENTS | | | BLAST DOWNTIME | | | | | |
|-------------|-------|---------------------------|---------------|-------------|--------------------|------------------|------|----|----|---------------|
| | | KETTLE | TIME | INCHES DOWN | TOTAL INCHES | PROBLEM | FROM | TO | | |
| 1 | 3:00 | B- A | 3:00 | 12" | 7" | FRONTEND LOADER | | | | |
| 2 | 3:20 | | 4:00 | 5" | | FORK LIFT | | | | |
| 3 | 3:40 | | 4:00 | 63" | | SKIP HOIST | | | | |
| 4 | 4:00 | | 5:00 | 57" | | BLAST JACKET | | | | |
| 5 | 4:25 | | 6:00 | 51" | | TAP BLOCK | | | | |
| 6 | 4:45 | | 7:00 | 45" | | LANCE BLAST | | | | |
| 7 | 5:10 | | 8:00 | 39" | | THIMBLE | | | | |
| 8 | 5:30 | | 9:00 | 33" | | UPCOMMER | | | | |
| 9 | 5:50 | | 10:00 | 26" | | AFTERBURNER | | | | |
| 10 | 6:10 | | A | 11:00 | | 19" | | | 7" | HEAT EXCHANGE |
| 11 | 6:30 | | | | | BAG HOUSE | | | | |
| 12 | 6:50 | | | | | SHAFT JACKET | | | | |
| 13 | 7:10 | | | | | DONUT LEAKS | | | | |
| 14 | 7:30 | | | | | CRUCIBLE | | | | |
| 15 | 7:50 | | | | | POWER FAILURE | | | | |
| 16 | 8:10 | | | | | TUYERS | | | | |
| 17 | 8:30 | | | | | COLD FURNACE | | | | |
| 18 | 8:55 | | | | | THERMOCOUPLE | | | | |
| 19 | 9:15 | | | | | | | | | |
| 20 | 9:40 | TOTAL INCHES FOR SHIFT | | | 51" | BURN DOWN | | | | |
| 21 | 10:00 | | | | | WWT | | | | |
| 22 | 10:20 | TOTAL TONS FOR SHIFT | | | 36.8 | FURNACE SMOKING | | | | |
| 23 | 10:45 | | | | | FURNACE PRESSURE | | | | |
| 24 | 11:00 | CHARGE MAKE UP | | | TOTAL # OF CHARGES | OTHER | | | | |
| 25 | | MATERIAL | WEIGHT | | | OPERATORS | | | | |
| 26 | | COKE | 300 | | 19 | O.G. S.P. | | | | |
| 27 | | CAST IRON | 280 | | | | | | | |
| 28 | | REV SLAG | 3000 | | | | | | | |
| 29 | | POT DROSS | | | | | | | | |
| 30 | | RERUN SLAG | | | | | | | | |
| TOTAL SLAG | | PLATES | 1000 | | | | | | | |
| BUTTONS | | PLANT SCRAP | | | | | | | | |
| 24 | | SAND | | | | | | | | |
| | | ROCK | 250 | | | | | | | |
| | | OTHER | 1.56 X charge | | | | | | | |

**BLAST FURNACE
CHARGE SHEET**

SHIFT: 0644

DATE: 12/17/09

SUPERVISOR'S INITIALS: J3

| TIME OF TAP | | KETTLE MEASUREMENTS | | | BLAST DOWNTIME | | | |
|-------------|-------|------------------------|-----------|-------------|---|------------------|-------|------|
| | | KETTLE | TIME | INCHES DOWN | TOTAL INCHES | PROBLEM | FROM | TO |
| 1 | 11:15 | | | | | | | |
| 2 | 4:00 | A | 11:00 | 19" | | FRONTEND LOADER | | |
| 3 | 4:30 | | 12:00 | 19" | 0 | FORK LIFT | | |
| 4 | 5:00 | | 1:00 | 19" | 0 | SKIP HOIST | | |
| 5 | 5:30 | | 2:00 | 19" | 0 | BLAST JACKET | | |
| 6 | 6:00 | | 3:00 | 16" | 3" | TAP BLOCK | | |
| 7 | 6:30 | A | 4:00 | 11" | 5" | LANCE BLAST | | |
| 8 | 6:50 | | 5:00 | 5" | 6" | THIMBLE | | |
| 9 | | B | 5:00 | 74 | | UPCOMMER | | |
| 10 | | | 6:00 | 69 | 5" | AFTERBURNER | | |
| 11 | | B | 7:00 | 60 | 9 | HEAT EXCHANGE | | |
| 12 | | | | | | BAG HOUSE | | |
| 13 | | | | | | SHAFT JACKET | | |
| 14 | | | | | | DONUT LEAKS | 11:00 | 3:30 |
| 15 | | | | | | CRUCIBLE | | |
| 16 | | | | | | POWER FAILURE | | |
| 17 | | | | | | TUYERS | | |
| 18 | | | | | | COLD FURNACE | | |
| 19 | | | | | | THERMOCOUPLE | | |
| 20 | | TOTAL INCHES FOR SHIFT | | | 28" | BURN DOWN | | |
| 21 | | | | | | WWT | | |
| 22 | | TOTAL TONS FOR SHIFT | | | 17.6 tons | FURNACE SMOKING | | |
| 23 | | | | | | FURNACE PRESSURE | | |
| 24 | | CHARGE MAKE UP | | | TOTAL # OF | OTHER | | |
| 25 | | MATERIAL | WEIGHT | | CHARGES | OPERATORS | | |
| 26 | | COKE | 300 | | 8 | RKL 76 | | |
| 27 | | CAST IRON | 280 | | | | | |
| 28 | | REV SLAG | 4000/3000 | | | | | |
| 29 | | POT DROSS | | | Donut Water at 11:00 pm Same till 3:30 pm | | | |
| 30 | | RERUN SLAG | | | | | | |
| | | TOTAL SLAG BUTTONS | 1000 | | | | | |
| | | PLANT SCRAP | | | | | | |
| | | SAND | | | | | | |
| | | ROCK | 250 | | | | | |
| | | OTHER | 1.56 | | | | | |

DATE: 12-17-09

Supervisor Initial: [Signature]

| KETTLES | INCHES DOWN |
|---------|--------------------|
| A | 7 |
| B | E |
| 2 | E |
| 3 | E |
| 4 | 7 |
| 5 | 7 |
| 6 | 7 |
| 7 | E |
| C | 65" |
| D | 7 |
| E | 70 tons. scrap pb. |

COMMENTS

Kettle 6 - SPT
4 - 6455
5 - 6455

KETTLES CAST TODAY

| ALLOY | LOT No. | AMOUNT | AVG. WEIGHT | TOTAL LBS. | TOTAL TONS |
|-------|---------|--------|-------------|------------|------------|
| 9500 | 5507 | 118 | 1967 | 232,106 | 116 |
| | | | | | |
| | | | | | |

KETTLES TO BE CAST TOMORROW

| ALLOY | KETTLE No. |
|-------|------------|
| SPT | 6 |
| 6455 | 4 |
| | |

COMMENTS

INVENTORY USAGE

| ALLOY | | | |
|------------------|------------|-----|--|
| Antimony | 9500 | | |
| Arsenic | | | |
| Calcium | 140 | | |
| Calcium-Aluminum | 65 | | |
| Silver | | | |
| Selenium | | | |
| Tin | | | |
| Caustic | 550 | | |
| Potash | | | |
| Sulfur | | | |
| Iron Pyrite | 800 | | |
| Red Phosphorus | 30 | | |
| Sodium Nitrate | 550 | | |
| Other | coal fines | 300 | |

LOTS BACK IN PROCESS

| LOT No. | QUANTITY |
|---------|----------|
| | |
| | |
| | |

INCHES PUMPED TO REVERB

| KETTLE | INCHES |
|--------|--------|
| | |
| | |
| | |

DROSS GENERATED

| ALLOY | DROSS |
|-------|-------|
| 9500 | 49000 |
| | |
| | |

TAP / SLAG POT BOARD

DAY: Thurs.

DATE: 12/17/09

| Shift | Period | Slag Pots | Lead Temp 650 to 1320 | | Kettle C | Kettle D |
|--------------|--------|-----------|--------------------------|--------------|-----------------------------|----------|
| FIRST SHIFT | 1 | 6 | | Start Inches | | 50 |
| | 2 | 4 | | End Inches | | 39 4 2 |
| | 3 | 6 | | Total Inches | | 11 8 |
| | 4 | 6 | | Total Tons | 13 10 Tons | |
| | 5 | 6 | | Comments | Seems to be lots of lead | |
| | 6 | 5 | | | In the slag. Robot @ 1:30 p | |
| | 7 | 4 | | | open lead up. | |
| | 8 | 4 | | | | |
| Total Pots | | 41 | | | | |
| SECOND SHIFT | 1 | 5 | 1159° | Start Inches | 14" | 42 |
| | 2 | 4 | 1149 | End Inches | 4 | 15 |
| | 3 | 4 | 1141 | Total Inches | 10" + | 27 = 37 |
| | 4 | 4 | | Total Tons | 6.14 | |
| | 5 | 4 | | Comments: | Problems with dryer burner. | |
| | 6 | 4 | | | | |
| | 7 | 4 | | | | |
| | 8 | 4 | | | | |
| Total Pots | | 33 | | | | |
| THIRD SHIFT | 1 | 4 | 1296 | Start Inches | 84" | 15" |
| | 2 | 3 | 1285 | End Inches | 65 | 4" |
| | 3 | 4 | 1295 | Total Inches | 19 | 11" = 30 |
| | 4 | 4 | | Total Tons | 38.2 tons | |
| | 5 | 3 | | Comments: | Dryer Burner problems | |
| | 6 | 4 | | | | |
| | 7 | 3 | | | | |
| | 8 | 4 | | | | |
| Total Pots | | 29 | | | | |
| Total Slag | | 103 | Daily Total Tons | | 113 Tons | |

OXIDE BAGHOUSE REPORT

| REACTOR #1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|---|--------|---|---|---|---|--------|---|---|---|---|--------|---|----------|---|---|--------|---|---|--|---|--|--|--|--|---|--|--|--|---|--|--|
| TIME OFF: | | | | | | | | | | | | DATE: | | 12-11-09 | | | | | | | | | | | | | | | | | | |
| TIME ON: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 2 | CELL 1 | 3 | 4 | 1 | 2 | CELL 2 | 3 | 4 | 1 | 2 | CELL 3 | 3 | 4 | 1 | 2 | CELL 4 | 3 | 4 | | | | | | | | | | | | | |
| | | E | | | | | E | | | | | E | | | | | E | | | | | | | | | | | | | | | |
| | | D | Reactor Not Running | | | | | | | | | | | | | | D | | | | | | | | | | | | | | | |
| | | C | | | | | | | | | | | | | | | | | | | | | | | | | | | | C | | |
| | | B | | | | | | | | | | | | | | | | | | | B | | | | | B | | | | B | | |
| | | A | | | | | A | | | | | A | | | | | A | | | | | | | | | | | | | | | |
| OUTLET DAMPER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| INLET DAMPER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MAGNAHELIC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BAGHOUSE TEMP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TRIBOFLOW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| COMMENTS: | | | Running 4 reactors only #3, 4, 5 and 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| REACTOR #2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TIME OFF: | | | | | | | | | | | | DATE: | | 12-11-09 | | | | | | | | | | | | | | | | | | |
| TIME ON: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 2 | CELL 1 | 3 | 4 | 1 | 2 | CELL 2 | 3 | 4 | 1 | 2 | CELL 3 | 3 | 4 | 1 | 2 | CELL 4 | 3 | 4 | | | | | | | | | | | | | |
| | | E | | | | | E | | | | | E | | | | | E | | | | | | | | | | | | | | | |
| | | D | Reactor Not Running | | | | | | | | | | | | | | D | | | | | | | | | | | | | | | |
| | | C | | | | | | | | | | | | | | | | | | | | | | | | | | | | C | | |
| | | B | | | | | | | | | | | | | | | | | | | B | | | | | B | | | | B | | |
| | | A | | | | | A | | | | | A | | | | | A | | | | | | | | | | | | | | | |
| OUTLET DAMPER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| INLET DAMPER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MAGNAHELIC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BAGHOUSE TEMP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TRIBOFLOW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| COMMENTS: | | | Running 4 reactors only #3, 4, 5 and 6. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

OXIDE BAGHOUSE REPORT

| REACTOR #3 | | | | | | | | | | | | | | | | | | | |
|-------------------|---|-----------------------|---|---|---|---|--------|---|---|---|---|--------|---|----------|---|---|--------|---|---|
| TIME OFF: | | | | | | | | | | | | DATE: | | 12-11-09 | | | | | |
| TIME ON: | | | | | | | | | | | | | | | | | | | |
| 1 | 2 | CELL 1 | 3 | 4 | 1 | 2 | CELL 2 | 3 | 4 | 1 | 2 | CELL 3 | 3 | 4 | 1 | 2 | CELL 4 | 3 | 4 |
| | | E | | | | | E | | | | | E | | | | | E | | |
| | | D | | | | | D | | | | | D | | | | | D | | |
| | | C | | | | | C | | | | | C | | | | | C | | |
| | | B | | | | | B | | | | | B | | | | | B | | |
| | | A | | | | | A | | | | | A | | | | | A | | |
| OUTLET DAMPER | | OK | | | | | | | | | | | | | | | | | |
| INLET DAMPER | | OK | | | | | | | | | | | | | | | | | |
| FAN | | OK | | | | | | | | | | | | | | | | | |
| MAGNAHELIC | | 2.0 — 2.0 — 1.5 | | | | | | | | | | | | | | | | | |
| BAGHOUSE TEMP | | 225 — 235 — 220 | | | | | | | | | | | | | | | | | |
| TRIBOFLOW | | OK | | | | | | | | | | | | | | | | | |
| COMMENTS: | | turned off at 2:00 PM | | | | | | | | | | | | | | | | | |
| REACTOR #4 | | | | | | | | | | | | | | | | | | | |
| TIME OFF: | | | | | | | | | | | | DATE: | | 12-11-09 | | | | | |
| TIME ON: | | | | | | | | | | | | | | | | | | | |
| 1 | 2 | CELL 1 | 3 | 4 | 1 | 2 | CELL 2 | 3 | 4 | 1 | 2 | CELL 3 | 3 | 4 | 1 | 2 | CELL 4 | 3 | 4 |
| | | E | | | | | E | | | | | E | | | | | E | | |
| | | D | | | | | D | | | | | D | | | | | D | | |
| | | C | | | | | C | | | | | C | | | | | C | | |
| | | B | | | | | B | | | | | B | | | | | B | | |
| | | A | | | | | A | | | | | A | | | | | A | | |
| OUTLET DAMPER | | OK | | | | | | | | | | | | | | | | | |
| INLET DAMPER | | OK | | | | | | | | | | | | | | | | | |
| FAN | | OK | | | | | | | | | | | | | | | | | |
| MAGNAHELIC | | 3.5 — 3.0 — 3.5 | | | | | | | | | | | | | | | | | |
| BAGHOUSE TEMP | | 240 — 280 — 260 | | | | | | | | | | | | | | | | | |
| TRIBOFLOW | | OK | | | | | | | | | | | | | | | | | |
| COMMENTS: | | turned off at 2:00 PM | | | | | | | | | | | | | | | | | |

OXIDE BAGHOUSE REPORT
 OX006
 Rev 3
 2/01/05
REACTOR #5

TIME OFF:

DATE:

TIME ON:

12-11-09

| CELL #1 | | | | | | CELL #2 | | | | | | CELL #3 | | | | | | CELL #4 | | | | | |
|-----------------------|---|---|---|---|---|---------|---|---|---|---|---|---------|---|---|---|---|---|---------|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 |
| | | | | | | | | | | | | | | | | | | | | | | | |
| G | | | | | | G | | | | | | G | | | | | | G | | | | | |
| F | | | | | | F | | | | | | F | | | | | | F | | | | | |
| E | | | | | | E | | | | | | E | | | | | | E | | | | | |
| D | | | | | | D | | | | | | D | | | | | | D | | | | | |
| C | | | | | | C | | | | | | C | | | | | | C | | | | | |
| B | | | | | | B | | | | | | B | | | | | | B | | | | | |
| A | | | | | | A | | | | | | A | | | | | | A | | | | | |
| OUTLET DAMPER | | | | | | | | | | | | | | | | | | | | | | | |
| OK | | | | | | | | | | | | | | | | | | | | | | | |
| INLET DAMPER | | | | | | | | | | | | | | | | | | | | | | | |
| OK | | | | | | | | | | | | | | | | | | | | | | | |
| FAN | | | | | | | | | | | | | | | | | | | | | | | |
| OK | | | | | | | | | | | | | | | | | | | | | | | |
| MAGNAHELIC | | | | | | | | | | | | | | | | | | | | | | | |
| 4.0 — 4.0 — 1.0 — 1.0 | | | | | | | | | | | | | | | | | | | | | | | |
| BAGHOUSE TEMP | | | | | | | | | | | | | | | | | | | | | | | |
| 215 — 210 — 210 — 190 | | | | | | | | | | | | | | | | | | | | | | | |
| TRIBOFLOW | | | | | | | | | | | | | | | | | | | | | | | |
| OK | | | | | | | | | | | | | | | | | | | | | | | |
| COMMENTS: | | | | | | | | | | | | | | | | | | | | | | | |
| Turned off at 2:00 PM | | | | | | | | | | | | | | | | | | | | | | | |

OXIDE BAGHOUSE REPORTOX006
Rev 3
2/01/05

REACTOR #6

TIME OFF:

DATE:

12-11-09

TIME ON:

| CELL #1 | | | | | | CELL #2 | | | | | | CELL #3 | | | | | | CELL #4 | | | | | |
|---------|---|---|---|---|---|---------|---|---|---|---|---|---------|---|---|---|---|---|---------|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 |
| G | | | | | | G | | | | | | G | | | | | | G | | | | | |
| F | | | | | | F | | | | | | F | | | | | | F | | | | | |
| E | | | | | | E | | | | | | E | | | | | | E | | | | | |
| D | | | | | | D | | | | | | D | | | | | | D | | | | | |
| C | | | | | | C | | | | | | C | | | | | | C | | | | | |
| B | | | | | | B | | | | | | B | | | | | | B | | | | | |
| A | | | | | | A | | | | | | A | | | | | | A | | | | | |

OUTLET DAMPER

OK

INLET DAMPER

OK

FAN

OK

MAGNAHELIC

3.0 — 2.5 — 3.5 — 3.5

BAGHOUSE TEMP

210 — 215 — 210 — 205

TRIBOFLOW

OK

COMMENTS:

Turned off at 2:00 PM

OXIDE BAGHOUSE REPORTOX006
Rev 3
2/01/05SOUTH MILL

TIME OFF:

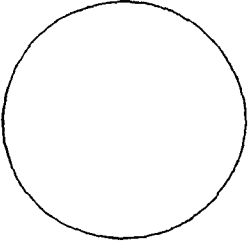
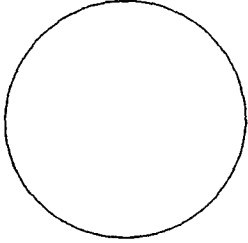
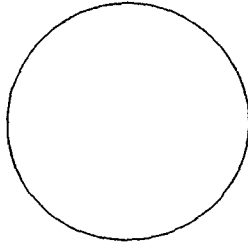
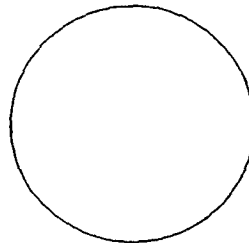
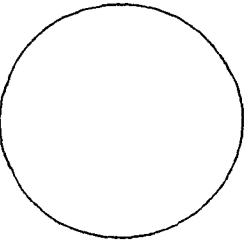
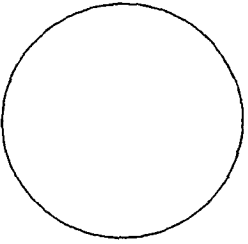
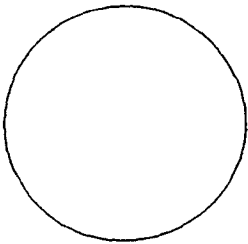
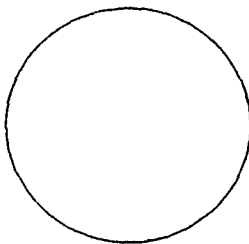
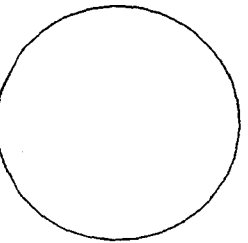
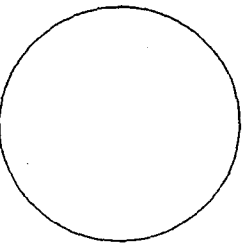
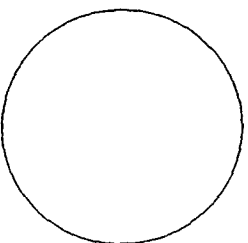
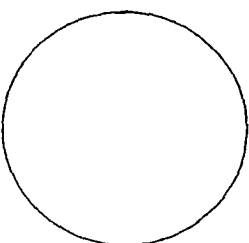
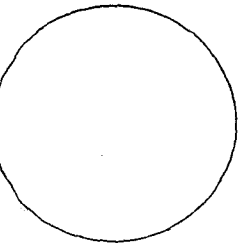
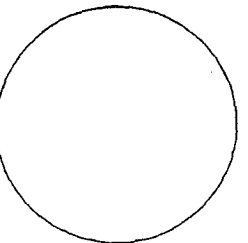
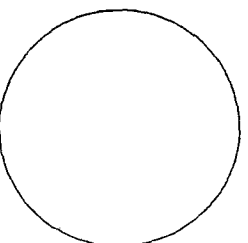
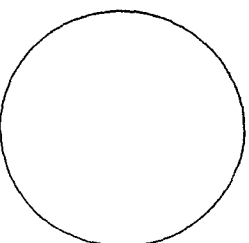
DATE:

12-11-09

TIME ON:

| | CELL #1 | | | | | | CELL #2 | | | | | | CELL #3 | | | | | | | |
|---------------|-----------------------|---|---|---|---|---|---------|---|---|---|---|---|---------|--|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | | 1 | 2 | 3 | 4 | 5 | 6 | | 1 | 2 | 3 | 4 | 5 | 6 |
| F | | | | | | | | F | | | | | | | F | | | | | |
| E | | | | | | | | E | | | | | | | E | | | | | |
| D | | | | | | | | D | | | | | | | D | | | | | |
| C | | | | | | | | C | | | | | | | C | | | | | |
| B | | | | | | | | B | | | | | | | B | | | | | |
| A | | | | | | | | A | | | | | | | A | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| OUTLET DAMPER | OK | | | | | | | | | | | | | | | | | | | |
| INLET DAMPER | OK | | | | | | | | | | | | | | | | | | | |
| FAN | OK | | | | | | | | | | | | | | | | | | | |
| MAGNAHELIC | 6.0 — 5.5 — 6.5 | | | | | | | | | | | | | | | | | | | |
| BAGHOUSE TEMP | 147 | | | | | | | | | | | | | | | | | | | |
| TRIBOFLOW | OK | | | | | | | | | | | | | | | | | | | |
| COMMENTS: | Turned off at 2:00 PM | | | | | | | | | | | | | | | | | | | |

Appendix CAA D

| CELL #2 | | CELL #1 | |
|---|---|--|---|
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| VENTILATION BAGHOUSE | | | |
| TRIBOFLOW A little dirty | | MAGNAHELIC 1.0 3 | |
| | | DATE: 12-11-09 | |
| | | SHIFT: 6:00 pm - 2:00 pm | |
| COMMENTS: Turned off at 2:00 pm | | | |



FRISCO SMELTER (862)

BAGHOUSE MAINTENANCE CHECKLIST - WEEKLY

OX005
Rev 3
2/01/05

DATE: 12-11-09

BY: Alberto Quintero

REACTOR # 1

FOLLOW ONE COMPLETE CYCLE ON THE BAGHOUSE
FOR EACH CELL DETERMINE THE FOLLOWING:

| | CELL #1 | CELL #2 | CELL #3 | CELL #4 |
|--|---------|---------|---------|---------|
| TIME PERIOD BETWEEN CYCLES - MINUTES | | | | |
| SHAKE TIME DURATION - SECONDS | | | | |
| PRESSURE DURING OPERATION - INCHES WATER (1) | | | | |
| PRESSURE DURING SHAKE CYCLE - INCHES WATER (1) | | | | |
| STACK CAPACITY AT START OF SHAKE | | | | |

Reactors Running
3, 4, 5 and 6.

| | | | | |
|-----------------------------------|--|--|--|--|
| MOTOR OPERATION FAN - | | | | |
| FAN DRIVE BELT TENSION* | | | | |
| CHECK DAMPER CYLINDERS | | | | |
| INLET DAMPER OPERATION & POSITION | | | | |
| OUTLET DAMPER OPERATION | | | | |
| CONDITION OF BAGS (2) | | | | |
| BAGHOUSE TEMPERATURE | | | | |
| MONTHLY CHECK | | | | |
| FAN MOTOR AMPERAGE: | | | | |
| FAN SHAFT RPM: | | | | |

*BEFORE CHECKING TENSION LOCK OUT MOTOR FOR SAFETY



FRISCO SMELTER (862)

OX005
Rev 3
2/01/05

BAGHOUSE MAINTENANCE CHECKLIST - WEEKLY

DATE: 12-11-09 BY: Alberto Quintana REACTOR # 2

FOLLOW ONE COMPLETE CYCLE ON THE BAGHOUSE
FOR EACH CELL DETERMINE THE FOLLOWING:

| TIME PERIOD BETWEEN CYCLES - MINUTES | CELL #1 | CELL #2 | CELL #3 | CELL #4 |
|--|---------|---------|---------|---------|
| SHAKE TIME DURATION - SECONDS | | | | |
| PRESSURE DURING OPERATION - INCHES WATER (1) | | | | |
| PRESSURE DURING SHAKE CYCLE - INCHES WATER (1) | | | | |
| STACK CAPACITY AT START OF SHAKE | | | | |

Running only 4 reactors
3, 4, 5 and 6.

| | | | | |
|-----------------|--|--|--|--|
| NORTH MILL BAGS | | | | |
| SOUTH MILL BAGS | | | | |
| REACTOR BAGS | | | | |
| CELL #1 | | | | |
| CELL #2 | | | | |
| CELL #3 | | | | |
| CELL #4 | | | | |

| | | | | |
|-----------------------------------|--|--|--|--|
| MOTOR OPERATION FAN - | | | | |
| FAN DRIVE BELT TENSION* | | | | |
| CHECK DAMPER CYLINDERS | | | | |
| INLET DAMPER OPERATION & POSITION | | | | |
| OUTLET DAMPER OPERATION | | | | |
| CONDITION OF BAGS (2) | | | | |
| BAGHOUSE TEMPERATURE | | | | |
| MONTHLY CHECK | | | | |
| FAN MOTOR AMPERAGE: | | | | |
| FAN SHAFT RPM: | | | | |

| | |
|-------------------------|--|
| DATE: | |
| OUTLET DAMPER POSITION: | |

*BEFORE CHECKING TENSION LOCK OUT MOTOR FOR SAFETY

BAGHOUSE MAINTENANCE CHECKLIST - WEEKLY

OX005
Rev 3
2/01/05

REACTOR # 3

FOR EACH CELL DETERMINE THE FOLLOWING:

| | | | | | |
|--|---------------------------|---------|---------|---------|---------|
| TIME PERIOD BETWEEN CYCLES - MINUTES | | CELL #1 | CELL #2 | CELL #3 | CELL #4 |
| SHAKE TIME DURATION - SECONDS | | 7 | 7 | 7 | / |
| PRESSURE DURING OPERATION - INCHES WATER (1) | | 40 | 40 | 40 | / |
| PRESSURE DURING SHAKE CYCLE - INCHES WATER (1) | | 2.0 | 2.0 | 1.5 | / |
| STACK CAPACITY AT START OF SHAKE | OK | 0 | 0 | 0 | / |
| | NORTH MILL BAGS | | | / | / |
| | SOUTH MILL BAGS | | | / | / |
| | REACTOR BAGS | | | / | / |
| MOTOR OPERATION FAN - | OK | CELL #1 | CELL #2 | CELL #3 | CELL #4 |
| FAN DRIVE BELT TENSION* | OK | | | | / |
| CHECK DAMPER CYLINDERS | OK | | | | / |
| INLET DAMPER OPERATION & POSITION | OK | OK | OK | OK | / |
| OUTLET DAMPER OPERATION | OK | OK | OK | OK | / |
| CONDITION OF BAGS (2) | / | / | / | / | / |
| BAGHOUSE TEMPERATURE: | 225 | 235 | 220 | / | / |
| MONTHLY CHECK | DATE: / / | | | | |
| FAN MOTOR AMPERAGE: | OUTLET DAMPER POSITION: / | | | | |
| FAN SHAFT RPM: | / | | | | |
| *BEFORE CHECKING TENSION LOCK OUT MOTOR FOR SAFETY | | | | | |

BAGHOUSE MAINTENANCE CHECKLIST - WEEKLY

OX005
Rev 3
2/01/05

DATE:

12-11-09

BY:

Albert

Quintero

REACTOR # 4

**FOLLOW ONE COMPLETE CYCLE ON THE BAGHOUSE
FOR EACH CELL DETERMINE THE FOLLOWING:**

| | CEL #1 | CELL #2 | CELL #3 | CELL #4 |
|--|-------------------------|---------|---------|---------|
| TIME PERIOD BETWEEN CYCLES - MINUTES | 7 | 7 | 7 | 7 |
| SHAKE TIME DURATION - SECONDS | 40 | 40 | 40 | 40 |
| PRESSURE DURING OPERATION - INCHES WATER (1) | 3.5 | 3.0 | 3.5 | 3.5 |
| PRESSURE DURING SHAKE CYCLE - INCHES WATER (1) | 0 | 0 | 0 | 0 |
| STACK CAPACITY AT START OF SHAKE | OK | | | |
| | NORTH MILL BAGS | | | |
| | SOUTH MILL BAGS | | | |
| | REACTOR BAGS | | | |
| | CEL #1 | CELL #2 | CELL #3 | CELL #4 |
| MOTOR OPERATION FAN- | OK | | | |
| FAN DRIVE BELT TENSION* | OK | | | |
| CHECK DAMPER CYLINDERS | OK | OK | OK | OK |
| INLET DAMPER OPERATION & POSITION | OK | OK | OK | OK |
| OUTLET DAMPER OPERATION | OK | OK | OK | OK |
| CONDITION OF BAGS (2) | OK | OK | OK | OK |
| BAGHOUSE TEMPERATURE: | 240 | 280 | 260 | |
| MONTHLY CHECK | DATE: | | | |
| FAN MOTOR AMPERAGE: | OUTLET DAMPER POSITION: | | | |
| FAN SHAFT RPM: | | | | |

***BEFORE CHECKING TENSION LOCK OUT MOTOR FOR SAFETY**

DATE: 12-11-09

BY: Alberto Quintana

REACTOR # 5

**FOLLOW ONE COMPLETE CYCLE ON THE BAGHOUSE
FOR EACH CELL DETERMINE THE FOLLOWING:**

| | CELL #1 | CELL #2 | CELL #3 | CELL #4 |
|--|-------------------------|----------|----------|----------|
| TIME PERIOD BETWEEN CYCLES - MINUTES | 7 | 7 | 7 | 7 |
| SHAKE TIME DURATION - SECONDS | 50 | 50 | 50 | 50 |
| PRESSURE DURING OPERATION - INCHES WATER (1) | 4.0 | 4.0 | 1.0 | 1.0 |
| PRESSURE DURING SHAKE CYCLE - INCHES WATER (1) | 0 | 0 | 0 | 0 |
| STACK CAPACITY AT START OF SHAKE | OK | | | |
| | NORTH MILL BAGS | | | |
| | SOUTH MILL BAGS | | | |
| | REACTOR BAGS | | | |
| | CELL #1 | CELL #2 | CELL #3 | CELL #4 |
| MOTOR OPERATION FAN- | OK | | | |
| FAN DRIVE BELT TENSION* | OK | | | |
| CHECK DAMPER CYLINDERS | OK | OK | OK | OK |
| INLET DAMPER OPERATION & POSITION | OK close | OK close | OK close | OK close |
| OUTLET DAMPER OPERATION | OK | OK | OK | OK |
| CONDITION OF BAGS (2) | ✓ | ✓ | ✓ | ✓ |
| BAGHOUSE TEMPERATURE: | 21.5 | 21.0 | 21.0 | 19.6 |
| MONTHLY CHECK | DATE: | | | |
| FAN MOTOR AMPERAGE: | OUTLET DAMPER POSITION: | | | |
| FAN SHAFT RPM: | | | | |

***BEFORE CHECKING TENSION LOCK OUT MOTOR FOR SAFETY**

BAGHOUSE MAINTENANCE CHECKLIST - WEEKLY

OX005
Rev 3
2/01/05

DATE: 12-11-09

BY: Alberto

Quirfelo

REACTOR # 6

FOLLOW ONE COMPLETE CYCLE ON THE BAGHOUSE FOR EACH CELL DETERMINE THE FOLLOWING:

| | CELL #1 | CELL #2 | CELL #3 | CELL #4 |
|--|-------------------------|----------|----------|----------|
| TIME PERIOD BETWEEN CYCLES - MINUTES | 7 | 7 | 7 | 7 |
| SHAKE TIME DURATION - SECONDS | 50 | 50 | 50 | 50 |
| PRESSURE DURING OPERATION - INCHES WATER (1) | 3.0 | 2.5 | 3.5 | 3.5 |
| PRESSURE DURING SHAKE CYCLE - INCHES WATER (1) | 0 | 0 | 0 | 0 |
| STACK CAPACITY AT START OF SHAKE | OK | | | |
| | NORTH MILL BAGS | | | |
| | SOUTH MILL BAGS | | | |
| | REACTOR BAGS | | | |
| | CELL #1 | CELL #2 | CELL #3 | CELL #4 |
| MOTOR OPERATION FAN- | OK | | | |
| FAN DRIVE BELT TENSION* | OK | | | |
| CHECK DAMPER CYLINDERS | OK | OK | OK | OK |
| INLET DAMPER OPERATION & POSITION | OK close | OK close | OK close | OK close |
| OUTLET DAMPER OPERATION | OK | OK | OK | OK |
| CONDITION OF BAGS (2) | 1 | 1 | 1 | 1 |
| BAGHOUSE TEMPERATURE: | 210 | 215 | 210 | 265 |
| MONTHLY CHECK | DATE: | | | |
| FAN MOTOR AMPERAGE: | OUTLET DAMPER POSITION: | | | |
| FAN SHAFT RPM: | | | | |

*BEFORE CHECKING TENSION LOCK OUT MOTOR FOR SAFETY

BAGHOUSE MAINTENANCE CHECKLIST - WEEKLY

OX005
Rev 3
2/01/05

| | | | | | |
|---|-------------------------|------------|----------|---------|--|
| DATE: 12-11-09 | BY: Alberb | SOUTH MILL | | | |
| FOLLOW ONE COMPLETE CYCLE ON THE BAGHOUSE FOR EACH CELL DETERMINE THE FOLLOWING: | | | | | |
| TIME PERIOD BETWEEN CYCLES - MINUTES | CELL #1 | CELL #2 | CELL #3 | CELL #4 | |
| SHAKE TIME DURATION - SECONDS | 7 | 7 | 7 | | |
| PRESSURE DURING OPERATION - INCHES WATER (1) | 50 | 50 | 50 | | |
| PRESSURE DURING SHAKE CYCLE - INCHES WATER (1) | 6.2 | 5.25 | 6.5 | | |
| STACK CAPACITY AT START OF SHAKE | OK | 0 | 0 | | |
| | NORTH MILL BAGS | | | | |
| | SOUTH MILL BAGS | | | | |
| | REACTOR BAGS | | | | |
| | CELL #1 | CELL #2 | CELL #3 | CELL #4 | |
| MOTOR OPERATION FAN- | | | | | |
| FAN DRIVE BELT TENSION* | OK | | | | |
| CHECK DAMPER CYLINDERS | | OK | OK | OK | |
| INLET DAMPER OPERATION & POSITION | OK close | OK close | OK close | | |
| OUTLET DAMPER OPERATION | OK | OK | OK | | |
| CONDITION OF BAGS (2) | | | | | |
| BAGHOUSE TEMPERATURE: | 147 | | | | |
| MONTHLY CHECK | DATE: | | | | |
| FAN MOTOR AMPERAGE: | OUTLET DAMPER POSITION: | | | | |
| FAN SHAFT RPM: | | | | | |

*BEFORE CHECKING TENSION LOCK OUT MOTOR FOR SAFETY

DATE: 12-11-04

BY: Alberto

NORTH MILL

**FOLLOW ONE COMPLETE CYCLE ON THE BAGHOUSE
FOR EACH CELL DETERMINE THE FOLLOWING:**

| | CELL #1 | CELL #2 | CELL #3 | CELL #4 |
|--|---------|---------|---------|---------|
| TIME PERIOD BETWEEN CYCLES - MINUTES | 7 | 7 | 7 | 7 |
| SHAKE TIME DURATION - SECONDS | 45 | 45 | 45 | 45 |
| PRESSURE DURING OPERATION - INCHES WATER (1) | 2.0 | 2.5 | 2.5 | 2.5 |
| PRESSURE DURING SHAKE CYCLE - INCHES WATER (1) | 0 | 0 | 0 | 0 |
| STACK CAPACITY AT START OF SHAKE | OK | | | |

NORTH MILL BAGS
SOUTH MILL BAGS
REACTOR BAGS
CELL #1 CELL #2 CELL #3 CELL #4

| | | | | |
|-----------------------------------|-------------------------|----|----|----|
| MOTOR OPERATION FAN- | OK | | | |
| FAN DRIVE BELT TENSION* | OK | | | |
| CHECK DAMPER CYLINDERS | OK | OK | OK | OK |
| INLET DAMPER OPERATION & POSITION | OK | OK | OK | OK |
| OUTLET DAMPER OPERATION | OK | OK | OK | OK |
| CONDITION OF BAGS (2) | 1 | 1 | 1 | 1 |
| BAGHOUSE TEMPERATURE: | 250 | | | |
| MONTHLY CHECK | DATE: | | | |
| FAN MOTOR AMPERAGE: | OUTLET DAMPER POSITION: | | | |
| FAN SHAFT RPM: | | | | |

***BEFORE CHECKING TENSION LOCK OUT MOTOR FOR SAFETY**

Appendix CAA-E

Copy of Exide Inspection Logbook and Process Overview Notes

Exide Technologies

Frisco Battery Recycling Plant
Frisco, Collin County, Texas

Lat: $33^{\circ} 8' 30''$ Lon: $096^{\circ} 49' 53''$

Secondary Lead Smelter

§ 63X (NEHAAP)

§ 60L (NSPS)

John Penland, David Robertson

December 14, 2009 - December 17, 2009

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- Process Overview

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Covered Material Storage

Raw Material Storage

Reverb Furnace

Blast Furnace

Slag Treatment

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Metallurgical Scrubber

Refining (Hard and Soft Lead)

12/15/2009

- Process Overview (cont.)

Waste Water Treatment

Oxide Production

- Process Walkthrough Photo log

12/16/2009

- File Review

12/17/2009

- Facility Walkthrough Photo log

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Appendix CAA E

Facility Contacts



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Plant Manager

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December 14, 2009

Cloudy, 53°F

Exide Technologies - Frisco, TX

0900 Arrive at Facility meet with James Messer
Plant Environ. Manager and Fred Ganster
Corp. enviro. manager. *JP*

0909 David Robertson presented credentials to
Fred Ganster. *JP*

Stack test scheduled for 12/15/2009

Introduction - (EPA) *JP*

David Robertson - Team Lead. *JP*

Patricia Willis - NPDES *JP*

Jamal Lewis - RCRA *JP*

Melissa Smith - RCRA - corrective Action *JP*

John Penland - Air *JP*

Lawrence Stramie - EPCRA 313 *JP*

(Exide) *JP*

James Messer - Manager Environmental
And Quality Control *JP*

Fred Ganster - Director Environment, Health + Safety

Don Barar - Plant Manager *JP*

- Don Barar is the facility's designated
Responsible official *JP*

- Following Introduction James Messer *JP*
gave process overview *JP*

Diagrams And notes from process overview
were printed and original notes can be *JP*
found in the envelope in this back *JP*
of the Log Book. Key points are transcribed
from the notes.

End of Day *JP*

Process Overview - James Messer (Exide)

Notes Transcribed from originals. JP

- Normal operations represent 200 TPD of miscellaneous Lead Acid Battery Feed. JP
- All sources exempt for NO_x except for 3 MBTU JP boiler in crystallizer unit According to James Messer JP
- Battery Breaker JP
 - operated 14 hours per day 5-6 days per week JP
 - capacity not known JP
 - partially enclosed. JP
 - Battery Breaker is a hammer mill with screens over liquid baths JP
 - emissions control is wet scrubber with collection hoods. JP
 - No draft measurements regularly taken at hoods JP
 - only H_2O in scrubber, no pH testing or maintenance schedule JP
 - Last emissions test of scrubber stack 1996 JP
 - visual inspection of nozzles quarterly JP
 - Natural gas fired dryer in battery breaker for plastic chips. NO emissions point. JP
 - No floor sweeping takes place in battery breaker JP
 - According to James Messer, scrubber is MACT exempt.

Covered Material Storage Building JP

- partial enclosure JP
- Wet operation. JP
- Floors swept JP

End of Page.

JP

December 2009

Process Overview - James Messer (Exide)

Notes Transcribed from originals. JP

Raw Material Storage JP

- Fully enclosed with ventilation to cartridge baghouse JP
- Has shredder for non-battery feed material JP
- Natural gas fired Feed dryer feeds directly to Reverb. furnace charge JP
- Metallurgical coke (coal derivative) fed in to dryer with feed JP
- Petroleum coke also used JP
- Dryer operates at $\sim 230^\circ\text{F}$
- Dryer exhaust vents through dryer baghouse to soft lead stack JP
- RMS ventilation exhausts through baghouse to RMS stack JP
- Monthly draft measurements taken at North Door JP
- RMS baghouse 84,000 cfm JP
- Last RMS baghouse stack test October 2009 JP
- Dryer Baghouse 20,000 cfm JP
- ~~Last Dryer~~ JP
- Magnahelics on baghouse cells monitored every shift JP
- no dp measurement system across whole baghouse JP
- RMS is wet swept as needed JP
- Waste oil is also used as feed to reverb furnace JP

- End of Page

JP

Process Overview - James Messer (Exide)

- prior to SP Notes Transcribed from original ~~go~~
- prior to 2008 EI Emissions were calculated as
operating hours \times stack test derived emission factor
 \times production correction factor ~~go~~
- RMS emissions no longer calculated with production
correction factor. ~~go~~
- This change is justified by the MACT preamble
According to James Messer ~~go~~
- Dryer baghouse also has "de mistar" for H_2SO_4
control ~~go~~
- Dryer operates 24 hours per day 7 days per week
- Normal dryer throughput is 12-15 tph. ~~go~~

Reverb Furnace ~~go~~

- Accounts for approx 60% of production ~~go~~
- Approx 165 tpd. 300 tpd potential if using
desulfurized feed ~~go~~
- fired with O_2 enriched natural gas through 4 burners
- 24-36 hour heating time on start up ~~go~~
- 250 ton molten lead capacity ~~go~~
- Requires partial rebuild of refractory material ~~go~~
once per year and full rebuild once per
year at approx 6 month intervals ~~go~~
- vents to heat exchanger \rightarrow "A" pipe \rightarrow baghouse ~~go~~
(reverb baghouse) then combines with blast furnace
exhaust to wet scrubber \rightarrow wet scrubber stack ~~go~~
- wet scrubber uses Soda Ash and H_2O with packing ~~go~~
- hood from reverb furnace charging area vents to
soft lead baghouse ~~go~~

End of Page ~~go~~

Process Overview - James Messer (Exide)

- Notes transcribed from originals ~~go~~
- Area also has hoods that vent to supplemental baghouse
- Hoods have Anemometer readings taken monthly ~~go~~
- Furnace has approx 12 hour residence time ~~go~~
- reverb furnace operates 24/7 at $\approx 1000^\circ F$ ~~go~~
- Blast furnace ~~go~~
- Blast furnace fired by ~~feed~~ ^{SP} ~~coke~~ ^{SP} Met. coke ~~go~~
- Hood at charge area and at tap area vents to
supplemental baghouse ~~go~~
- Blast furnace exhaust \rightarrow Afterburner \rightarrow Heat exchanger \rightarrow
"A" pipe \rightarrow Blast baghouse \rightarrow wet scrubber with ~~go~~
Reverb furnace exhaust \rightarrow Scrubber stack. ~~go~~
- Blast furnace operates at $1800^\circ F$ ~~go~~
- Afterburner operates at $1585^\circ \rightarrow 1625^\circ F$ ~~go~~
- Blast furnace processes 90 \rightarrow 120 tpd. ~~go~~

Slag Treatment ~~go~~

- fully enclosed ~~go~~
- transfer, screening, and crushing fugitives vent to
crusher and screen baghouse ~~go~~

Facility Roads ~~go~~

- water truck ~~go~~ ^{SP} keeps road surfaces damp ~~go~~
- Sweeper truck collects fugitive materials. ~~go~~
- Collected materials added to reverb feed ~~go~~

Metallurgical Scrubber ~~go~~

- Controls exhaust from both blast and reverb furnaces ~~go~~
- uses H_2O and Soda Ash through a packed column ~~go~~
- column packing is PN-fil ~~go~~
- Last stack test in 2009 ~~go~~

End of Page ~~go~~

Process Overview - James Messer (Eide)

- Notes transcribed from original *JP*
- Met. scrubber is checked by plant personnel quarterly *JP*
- Refining (Hard + Soft Lead) *JP*
- kettles 2,3,4,5 exhaust to Hard Lead Baghouse *JP*
- kettles C,D,E,6,7 exhaust to Soft Lead Baghouse *JP*
- burners from kettles exhaust to a joint ep. *JP*
- kettles E,D,C,4,5,6,7 ~~ASP~~ 100 ton capacity *JP*
- kettles 2,3 60 ton capacity *JP*
- kettle -B 72 ton capacity *JP*
- C,A serve as tapping kettles for reverb furnaces *JP*
- A,B used for blast tapping *JP*
- Residence time for kettles depends on final product requirements. *JP*

General Facility Notes *JP*

- Finished products (cast as pigs or hogs) determines production rate *JP*
- Facility operates 24/7 *JP*
- 2009 actual production will approach 71,900 tons *JP*
- PSD request for 85,000 tpy based on increases in efficiencies in waste water treatment *JP*

End of Day 12-14-2009
JP

Process Overview - James Messer (Eide)

- Notes transcribed from original *JP*
- Waste Water Treatment *JP*
- Added pressure oxidation tank in 2003 to control SO_3^{2-} levels in blow down water from Met. Scrubber *JP*
- Added 2nd leg to SP and Added cooling loop to *JP* increase treatment capacity *JP*
- Prior to modification feed rate to furnace was *JP* reduced to control SO_3^{2-} levels. Modification *JP* Allowed more consistent operation of furnaces *JP*

Oxide Production *JP*

- Uses "Barton Pot Reactors" *JP*
- pots operate at $750 \rightarrow 800^\circ\text{F}$ *JP*
- 6 reactors present in oxide plant *JP*
- 3 melting pots used to feed reactors *JP*
- Each reactor has one baghouse *JP*
- 2 hammer mills each with baghouse *JP*
- Oxide building is exempt from MACT according to James Messer *JP*
- building has no generalized fugitive controls *JP*
- operates up to 24/7 dependant on demand *JP*
- Requires 2-3 hour start up time *JP*
- Last stack testing in 1995 *JP*
- has a hygiene baghouse *JP*
- All transfer points covered or enclosed *JP*
- Load out to trucks has vacuum line that runs to hygiene baghouse to control fugitives *JP*

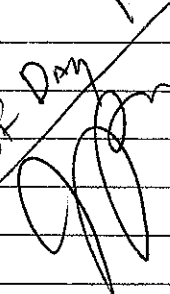
End of page
12-15-2009 *JP*

December 15, 2009

Appendix CAA E

Process Overview - James Messer (Encke)

- Transcribed from original go
- General Facility Notes go
- Facility built in 1963 by LNB go
- Purchased in 2000 by Encke go
- Originally produced only PbO from soft lead imported to the facility by rail and truck go
- 1971-1972 began recycling lead acid batteries go
- End of Process Overview go
- day to conclude with process Area tour go
- Attended safety lecture by Facility Health and Safety coordinator go

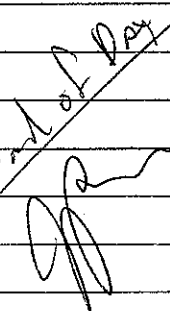
End of Day 12-15-2009


December 16, 2009

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~~Proc~~ Encke Technologies - Frisco, TX

- Daily activities for 12/16/2009 include go
- Limited file review, Storm Water discussion and go
- Limited site walk for RCRA purposes go
- Production data through 2008 is calculated including finished product derived from Reverb furnace lead, Blast furnace lead, and refined scrap lead. 2009 EI report will only include production from Blast and Reverb furnace lead. According to James Messer go

End of Day 12-16-2009


December 17, 2009
Appendix CAA E

Exide Technologies - Frisco, TX Photolog

- Daily Activities for 12/17/2009 will focus on an Air specific walkthrough of the Facility process areas. JP

Crystalizer JP

Photo: Exide Air 039 photo: John Penland Time: 0823

Desc: Na_2SO_4 load out area, feed out has vacuum line that exhaust to load out baghouse. JP

Photo: Exide Air 040 photo: John Penland Time 0831

Desc: Natural Gas fired crystalizer boiler, Exhaust Not routed through co-troll device. JP

Correction load out baghouse is no longer in use JP
load out fugitives are routed to main crystalizer baghouse. JP

Photo: Exide Air 041 photo: John Penland Time ~~1005~~ 0906

Desc: Crystalizer Flash Dryer pulls Ambient Air through Filters exhaust to main crystalizer baghouse. Natural gas fired. JP

Photo: ~~Exide Air 042~~ photo: John Penland Time: ~~1010~~ 0910

Desc: Crystalizer baghouse and exhaust outlet. Visible emissions present at outlet. JP

Photo: Exide Air 043 photo: John Penland Time ~~1023~~ 0923

Desc: Crystalizer boiler stack and boilerhouse roof vents.

Photo: Exide Air 044 photo: John Penland Time ~~1024~~ 0929

Desc: Facility Process Area view from crystalizer baghouse. Note open coke pile and battery breaker enclosure. JP

Facility Roads JP

Photo: Exide Air 045 photo: John Penland Time ~~1002~~ 1002

Desc: Wet sweeper JP

End of Penland

December 17, 2009
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Exide Technologies - Frisco, TX Photolog

Slag Treatment JP

Photo: Exide Air 046 photo: John Penland Time ~~1005~~ ~~1105~~

Desc: Blast slag pile and loading crusher hopper ~~1007~~

Photo: Exide Air 047 photo: John Penland Time ~~1107~~

Desc: Fugitive Hood for slag crusher outlet. JP ~~1009~~

Photo: Exide Air 048 photo: John Penland Time ~~1109~~

Desc: Slag Jaw crusher outlets to crusher baghouse ~~1010~~

Photo: Exide Air 049 photo: John Penland Time ~~1110~~

Desc: Fugitive hood from screening JP

Photo: Exide Air 050 photo: John Penland Time ~~1112~~ ~~1012~~

Desc: Load out and mixing operations for slag treatment ~~JP~~ vacuum control for fugitives JP
exhaust to cement truck ventilation baghouse JP

Photo: Exide Air 051 photo: John Penland Time: ~~1114~~ ~~1014~~

Desc: Front of slag treatment building and crush JP
and screen stack. note missing wall sections JP

Photo: Exide Air 052 photo: John Penland Time: 1017

Desc: Treatment reagent silos and baghouses JP
FF 100, portland cement. Cement Truck JP
Ventilation baghouses no pressure readings JP
taken inspected monthly JP

Photo: Exide Air 053 photo: John Penland Time 1021

Desc: Crush and screen baghouse. Due to be JP
replaced with larger waste Magnahelic chutes JP
Daily. JP

Photo: Exide Air 054 photo: John Penland Time: 1023

Desc: Battery breaker Area note Enclosure JP
End of Page

Exide Technologies - Frisco, TX Photolog

Battery Breaker - JP

Photo: Exide Air 055 photo: John Penhal Time 1026

Desc: Maple scrubber vents to Battery Breaker Stack JP

Photo: Exide Air 056 photo: John Penhal Time 1028

Desc: Plastic chip dryer natural gas fired exhaust JP

Photo: Exide Air 057 photo: John Penhal Time 1029

Desc: Fugitive capture vent above dryer exhaust JP through Metco scrubber JP

Photo: Exide Air 058 photo: John Penhal Time 1031

Desc: Fugitive capture vent above battery breaker JP outlet and screening JP

Photo: Exide Air 059 photo: John Penhal Time 1032

Desc: Hood enclosure at outlet of battery breaker JP and exhaust point from breaking chamber. JP

Photo: Exide Air 060 photo: John Penhal Time 1038

Desc: Battery breaker stack JP

Photo: Exide Air 061 photo: John Penhal Time 1040

Desc: RMS ventilation baghouse and stack 4 cells JP with 48 cartridges each MAGNAshots checked daily

Photo: Exide Air 062 photo: John Penhal Time 1045

Desc: Dryer (Fuel) baghouse exhausts to soft lead stack also JP in photo. JP

photo SR RMS

Photo: Exide Air 063 photo: John Penhal Time 1048

Desc: Dryer Fuel ~~exhaust~~ hood vents to RMS baghouse note p.-holes in walls. JP

End of Page JP

Exide Technologies - Frisco, TX Photolog

Photo: Exide Air 064 photo: John Penhal Time 1055

Desc: Feed Dryer. Exhaust through cyclone to dryer baghouse JP

Photo: Exide Air 065 photo: John Penhal Time 1056

Desc: Raw material load in doors on west side of building JP

Photo: Exide Air 066 photo: John Penhal Time 1057

Desc: RMS doors on east side of building high traffic area. JP

Photo: Exide Air 067 photo: John Penhal Time 1058

Desc: North door in RMS location draft readings. Taken no closure present JP

Photo: Exide Air 068 photo: John Penhal Time 1102

Desc: Transfer of material from dryer to reverb furnace. Covered with ventilation to soft lead baghouse. JP

Photo: Exide Air 069 photo: John Penhal Time 1104

Desc: Reverb baghouse magnetic panel. JP

#1 reading 0" H₂O JP#2 reading 2" H₂O JP#3 reading 710" H₂O → Reverb air ram reading to PA indicator line cleared. returned to 35" H₂O#4 reading 6" H₂O JP#5 reading 3" H₂O JP

Photo: Exide Air 070 photo: John Penhal Time 1112

Desc: Metal scrubber, combined exhaust from Blast + Reverb Baghouses JP

End of Page

Exide Technologies - Frisco, TX

Battery Breaker - JP

Photo: Exide Air 055 photo John Penland Time 1026

Desc: Mapco scrubber vents to Battery Breaker stack

Photo: Exide Air 056 photo John Penland Time 1026

Desc: plastic chip dryer natural gas fired exhaust in photo. JP

Photo: Exide Air 057 photo John Penland Time 1026

Desc: Fugitive capture vent above dryer. exhaust through Metco scrubber JP

Photo: Exide Air 058 photo John Penland Time 1031

Desc: Fugitive capture vent above battery breaker outlet and screening JP

Photo: Exide Air 059 photo John Penland Time 1032

Desc: Hood enclosure at outlet of battery breaker JP and exhaust point from breaking chamber JP

Photo: Exide Air 060 photo John Penland Time 1038

Desc: Battery breaker stack JP

Photo: Exide Air 061 photo John Penland Time 1040

Desc: RMS ventilation baghouse and stack 4 cells with 48 cartridges each magnetiches checked JP

Photo: Exide Air 062 photo John Penland Time 1045

Desc: Dyer (Feed) baghouse exhausts to soft lead stack in photo. JP

Photo 58 RMS

Photo: Exide Air 063 photo John Penland Time 1048

Desc: Dyer Feed ~~exhaust~~ hard vents to RMS baghouse note p-holes in walls. JP

End of Page

Exide Technologies - Frisco, TX Photology

Photo: Exide Air 064 photo John Penland Time 1055

Desc: Feed Dyer. Exhaust through cyclone to dryer baghouse JP

Photo: Exide Air 065 photo John Penland Time 1056

Desc: Raw material load in doors on west side of building JP

Photo: Exide Air 066 photo John Penland Time 1057

Desc: RMS doors on east side of building high traffic area JP

Photo: Exide Air 067 photo John Penland Time 1058

Desc: North door in RMS location draft ready. Taken in closure present JP

Photo: Exide Air 068 photo John Penland Time 1102

Desc: Transfer of material from dryer to reverb furnace. Covered with ventilation to soft lead baghouse JP

Photo: Exide Air 069 photo John Penland Time 1104

Desc: Reverb baghouse magnetiches paral. JP

#1 reading 0" H₂O JP

#2 reading 2" H₂O JP

#3 reading 710" H₂O → ~~Reverb air ram reading to JP~~ indicator line cleared. returned to 35" H₂O

#4 reading 6" H₂O JP

#5 reading 3" H₂O JP

Photo: Exide Air 070 photo John Penland Time 1112

Desc: Metal scrubber, combined exhaust from Blast + Reverb Baghouses JP

End of Page

December 17, 2009
Appendix CAA E

Exide Technologies - Frisco, TX Photo Log

Photo ~~Exide~~ Air 071 Phot: John Paul

Desc: Material escaping from covered conveyor system as a result of chipping roller screw conveyor to revert furnace

Photo Exide Air ⁰⁷³ ~~072~~ Phot: John Paul

Desc: Blast Furnace Magnahelic Pump

#1 3" ID

#2 4" ID

#3 2.5" ID

#4 4" ID

#5 4.25" ID

Photo: Exide Air 072 phot John Paul

Desc: Control Vacuum Bld and settling chamber with exhaust stacks

Photo Exide Air 074 phot John Paul

Desc: Vacuuming of baghouse area

Photo: Exide Air 075 phot John Paul

Desc: Soft lead baghouse and stack

Photo: Exide Air 076 phot John Paul

Desc: Hard Lead Baghouse

Photo: Exide Air 077 phot John Paul

Desc: Tapping of the blast furnace and enclosure Hood, exhaust to blast bld

Photo: Exide Air 078 phot John Paul

Desc: Blast Furnace Feed storage area yard walled

Photo: Exide Air 079 John Paul

Desc: Blast Furnace charging area exhaust to supplemental

End of Page

December 17, 2009
Page 11 of 45

Exide Technologies - Frisco, TX Photo Log

Photo Exide Air 080 Phot: John Paul Time: 1337

Desc: Blast Furnace lead tapping kettles with ventilation ducts. exhaust to special Alloy baghouse

~~Note tapping kettles not sealed JP hoods draw to special Alloy JP~~

Correction: hoods in Blast furnace charging exhaust to supplemental baghouse kettle hoods draw to supplemental hard lead bit

Photo Exide Air 082 Phot: John Paul Time 1348

Desc: Sn cross storage area to feed to blast furnace. Exhaust to supp JP special Alloy bld.

Photo Exide Air 081 P John Paul Time 1345

Desc: Hard lead refining kettles.

Photo Exide Air 083-084 P John Paul Time 1351

Desc: Reverb slag tapping area. hoods exhaust to supplemental bld

P Exide Air 085-086 P John Paul Time 1352

Desc: Reverb Furnace slag mold casting area

P Exide Air 087 P John Paul Time 1354

Desc: Reverb charging area hooding exhaust to SLBH

P Exide Air 088 P John Paul Time 1355

Desc: Reverb charging Ram enclosure.

P Exide Air 089 P John Paul Time 1358

Desc: Reverb lead tapping area exhaust to SLBH

End of Page

December 17, 2009
Appendix CAA E

Exide Technologies - Frisco, TX Photolog

Photo: Exide Air 090 Photo: John Pehl Time 1359
Desc: Soft lead refining area kettle hoods
exhaust to SLBH JP

Photo: Exide Air 091 Photo: John Pehl Time 1401

Desc: soft lead Hog castor no controls i

P. Exide Air 092 Photo: John Pehl Time 1404

Description: Soft lead pig castor hood vents to
SLBH JP

P. Exide Air 093 Photo: John Pehl Time 1406

Desc: Oxide Area floor sweeping JP

P. Exide Air 094 Photo: John Pehl Time 1406

Desc: oxide Reactors, not in operation JP
exhaust to individual reactor baghouses
melting exhaust to fume baghouse JP

P. Exide Air 095 Photo: John Pehl Time 1413

Desc: Melting kettle and reactor baghouses.
bH's check every 2 hours. JP

P. Exide Air 096 Photo: John Pehl Time 1414

Desc: Lead oxide Hammermill exhaust through
cyclone to hammermill baghouse.

P. Exide Air 097 Photo: John Pehl Time 1416

Desc: Central vacuum system baghouse and
settling chamber JP

P. Exide Air 098 Photo: John Pehl Time 1417

Description: Lead oxide fume baghouse JP

P. Exide Air 099 Photo: John Pehl Time 1417

Desc: lead oxide storage bin vents and open
roof vents.

End of Page

JP

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Exide Technologies - Frisco, TX Photolog

Photo: Exide Air 100 Photo: John Pehl Time 1421

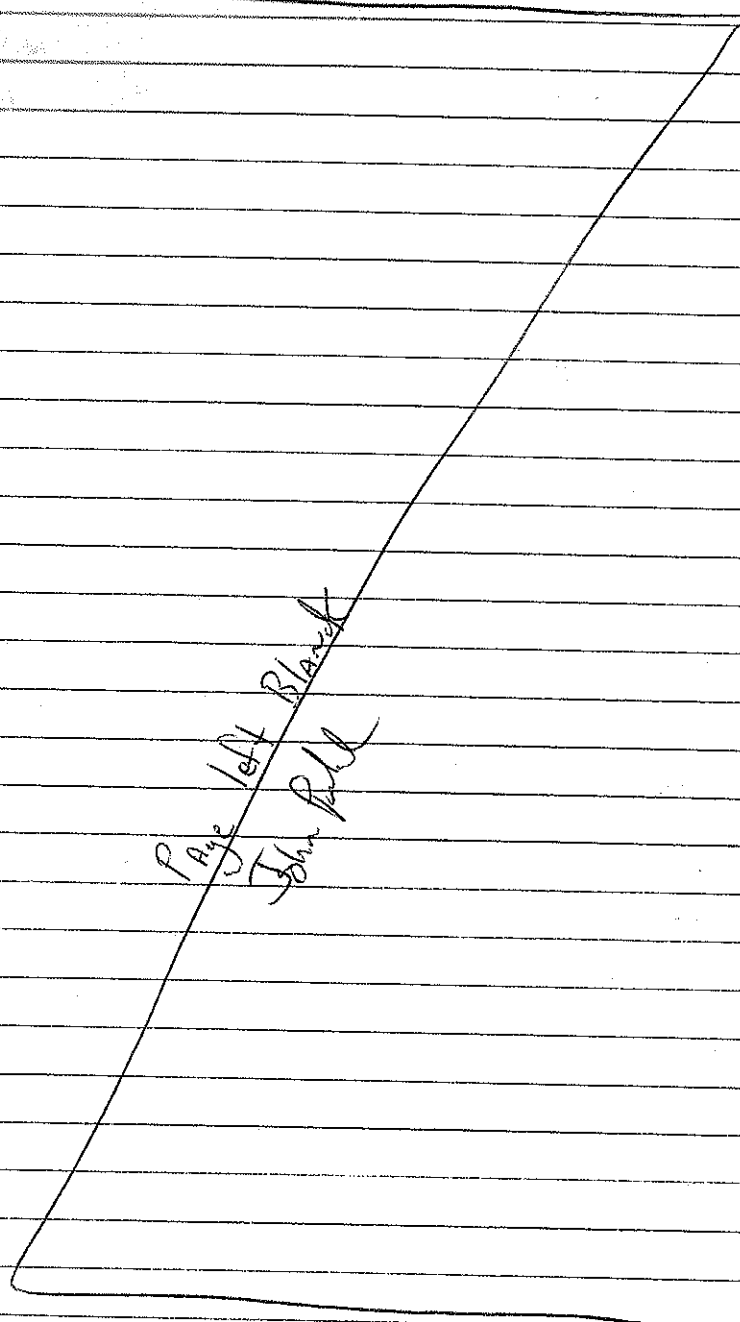
Desc: Specialty Alloys Baghouse JP

Photo: Exide Air 101 Photo: John Pehl Time 1421

Desc: Supp ~~MS~~ Ventilation Baghouse JP

End of Photolog
John Pehl

Exide Technologies - Frisco, TX



Paul Left Blank
John Felt

Exide Technologies - Frisco, TX

Inspector Walkthrough Notes

Crystalizer -

Slag Treatment -

Battery Breaker -

RMS - According to Exide environmental personnel draft measurements taken ONLY at north door. Ramp where forklift is driving is dry. no wheel washing of forklift.

Bayhouse Area - Active leak in conveyor observed about 1115. Exide env. personnel shut off conveyor and begin clean up. Area is partly but dry and dusty. Clean up uses vacuums.

Lunch Break

Blast furnace Area - Blast feed piles are dry at about 1330. Front end loader is generating dust. According to env. personnel it is not desired to put wet feed into the Blast furnace. Charging by ship hoist dusting. Appears to be circumventing hood.

Reverb furnace Area - Rabble door hood used to store slag molds for cooling. Lead doors for charging ram loose, partially open. Reverb furnace feed accumulating outside of ram enclosure pours out from top of ram. Reverb slag top hood does not look to enclose fully. Reverb lead hood does not appear to enclose fully.

Casting Area -

Refining Area - Floor Dusty, dry.

Fork lift driving through loading trucks with

Appendix CAA E

Exide Technologies - Frisco, TX

Casting Area - _____

Oxide Area - Product Silo Roof Vents directly below
powered building exhaust vents as

End Walk through _____

- According to James Messer, Blast furnace feed piles are wetted by the blast furnace operators sprinkler system is clogged and does not work.
- According to James Messer, Forklift for reverber slag routed thru RMs because elevator broken off
- Exide does not have any personnel method more certain than _____
- Only VE check is quarterly _____
- Close out meeting _____

Advised James, Messers And Fred Granger that I observed material leak from co-seper system,

not 38 Dry Fuel Piles At Blast Furnace I would Review Lead Oxide process for Rule Applicability. Advised that Exide should probably have one at least VE Method 9 person on site.

Deposited S. 1

~~End of Pay
12/17/2009~~

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Appendix CAA E

Photo log for 12-15-2009

Note: Photos taken during general process based facility walkthrough. During walkthrough the camera originally brought for documentation failed. Will share camera with David Robertson this new photo log will document only those photos taken for air compliance purposes.

Photo: Exide Air 001 Photographer: John Penland
Desc: Reverb Feed dryer bh on RMS building

Photo: Exide Air 002 Photo: John Penland
Desc: Torit bh for RMS building

Photo: Exide Air 003 Photo: John Penland
Desc: Slag loadout baghouse on slag treatment building

Photo: Exide Air 004 Photo: John Penland
Desc: Slag loadout baghouse on slag treatment building

Photo: Exide Air 005 Photo: David Robertson
Desc: Entrance to slag treatment building note signage.

Photo: Exide Air 006 Photo: John Penland
Desc: Slag treatment hopper crusher and conveyors (uncovered)

Photo: Exide Air 007 Photo: John Penland
Desc: Slag treatment sizing unit.

Photo: Exide Air 008 Photo: John Penland
Desc: Slag treatment loadout hopper and ventilation

Photo: Exide Air 009 Photo: John Penland
Desc: Slag treatment Loadout.

Photo: Exide Air 010 Photo: John Penland
Desc: Wet Scrubber At battery breaker.

End of Page

Noted

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Photo log 12-15-2009

Photo: Exide Air 011 Photo: John Penland
Desc: Crush And screen baghouse on slag treatment building

Photo: Exide Air 012 Photo: John Penland
Desc: Crush And screen baghouse on slag treatment building

Photo: Exide Air 013 Photo: John Penland
Desc: Outdoor battery storage area

Photo: Exide Air 014 Photo: John Penland
Desc: Outdoor battery storage area

Photo: Exide Air 015 Photo: John Penland
Desc: Battery Breaker Densly separator and wet scrubber intakes

Photo: Exide Air 016 Photo: John Penland
Desc: Natural gas chip dryer in battery breaker

Photo: Exide Air 017 Photo: John Penland
Desc: Battery Breaker Scrubber

Photo: Exide Air 018 Photo: John Penland
Desc: Battery Breaker Scrubber

Photo: Exide Air 019 Photo: John Penland
Desc: Battery Breaker material trailer

Photo: Exide Air 020 Photo: John Penland
Desc: scrap shredder in RMS building

Photo: Exide Air 021 Photo: John Penland
Desc: RMS Ventilation Van Duct to RMS baghouse

Photo: Exide Air 022 Photo: John Penland
Desc: Reverb feed dryer and cyclone

Photo: Exide Air 023 Photo: John Penland
Desc: Reverb Dryer conveyor And RMS Personnel door

Photo: Exide Air 024 Photo: John Penland
Desc: Reverb Dryer Feed hopper and hooding

End of Page

Appendix CAA E

Photo Log for 12/15/2009

Photo: Exide Air 025 Photo: John Paul goDesc: ~~Hard Lead~~ ^{Reverb} Baghouse and exhaust goPhoto: Exide Air 026 Photo: John Paul goDesc: Reverb Furnace Slag tap and Rubble door with goReverb Slag pots goPhoto: Exide Air 027 Photo: John Paul goDesc: Reverb Feed Room Enclosure goPhoto: Exide Air 028 Photo: John Paul goDesc: Reverb Slag tap goPhoto: Exide Air 029 Photo: John Paul goDesc: Reverb Lead tapping kettle goPhoto: Exide Air 030 Photo: John Paul goDesc: Lead molding and Casting Areas goPhoto: Exide Air 031 Photo: John Paul goDesc: Supplemental Blt fine dust bin goPhoto: Exide Air 032 Photo: John Paul goDesc: Supplemental Baghouse fine dust bag goPhoto: Exide Air 033 Photo: John Paul goDesc: Hard Lead and Blast baghouses goPhoto: Exide Air 034 Photo: John Paul goDesc: Blast furnace ~~feed~~ slag tap goPhoto: Exide Air 035 Photo: John Paul goDesc: Blast furnace slag tap goPhoto: Exide Air 036 Photo: John Paul goDesc: Lead Oxide Reactor goPhoto: Exide Air 037 Photo: John Paul goDesc: North Hammer mill baghouse Lead Oxide go~~End of Page~~

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Photo Log for 12/15/2009

Photo: Exide Air 038 Photo: John Paul goDesc: Lead Oxide Hygiene Baghouse go~~End of Page~~

James Messer

- 1.) 2.0 mg Pb / dscm
- 2.) 20 ppm VOC (located Blast-Reverb)
 - a) 360 ppm VOC w/o Reverb
 - b). 70 ppm VOC w/o Reverb, if Blast built after 1994
- 3.) Pb compliance test Annually
 - 1.) if ≤ 1.0 mg Pb/dscm then 2 years.
- 4.) SOP.
- 5.) Roadway sweepers 2x daily

Briefing Notes - James Messer
Feed Misc Batteries

200 TPD. operator

Boiler for crystalizer 3,000,000 BTU NO_x stack test
All other sources exempt for NO_x

Reverb → Blast

Reverb Furnace Refrac. Brick Annually Full Rebrick
every 6 months partial rebrick.

Major TAT

Minor TAT

Inspection Timing - 7:30-1300

Battery Breaker

24-7 operations facility wide.

14 hours per day breaker operations. 5-6 days per week.
unknown capacity for battery
partial enclosure

71,900 tpy Actual production

85,000 based increases on efficiencies. No Actual installs

Battery breaker - hammermill
screen has water sprayers as well as battery breaker
Screen is enclosed.

scrubber - hood collectors

No draft measure on hoods

only water in scrubber

emissions test 1996 last emissions

MACT exempt?

No maintenance schedule ~~no~~ no PFT testing.

Visual master inspection quarterly

Represented as breaker

Toyo pump. Large pump located in 'Battery Breaker

Supp electric

ⓓ Natural gas fired dryer for plaster

No floor sweeping

~~Raw Material Storage Building~~ Concerns Material Storage
Wet operations partial enclosure

Raw material Storage Building.

fully enclosed. shredder for non-battery material.

Feed dryer. Natural gas

Iron feed to blast furnace.

Pet coke. Green coke for sulfur

Met coke is coal product

Pet coke refining coke

Dryer temp $\approx 230^{\circ}\text{F}$

Dryer exhaust to individual baghouse
to soft lead stack

DIMS vent to Baggouse
monthly draft measurements

RMS Baggouse 100000 cfm

89,000 cfm

stack test Oct 2009

Cells = 4 192 cartridges

Every cell has magnetic no total baghouse dp
baghouse mag leak monitor routed to
central monitoring station

Dryer baghouse capacity 20,000 cfm has magnetic
And is monitored every shift

Dryer operates 24-7

Dryer has chamber for H_2SO_4 mist.

Wet sweeping as necessary

Waste oil used in conjunction w/ pet and mat coke
prior to 2008 EI emissions were calculated as

hours of operation \times em. fac \times production correction factor

Now = hours \times em factor, emissions from baghouse are
~~it is~~ independent of production As per preamble
to MACT?

Dryer through put = 12-15 tph
permit 26-30 tph

Feed Dryer is not a limit to the Revco Furnace

Reverb furnace - (oxidizing furnace)

60% of production

potential 300 - 165 Actual

potential based on desulfurized Pb feed.

four burners. Natural gas fired.

24-36 heating time 250 tons molten lead capacity

burners have O_2 enriched natural gas

vents to heat exchanger then to A pipe to baghouse. to scrubber (soda Ash and H_2O).

Baghouse - capacity

no flow meter on supplemental hoods to

supplemental baghouse. monthly air monitor readings.

hood from reverb furnace charging routed to soft lead bh

12 hour residence time

2100 °F 165 → 170 tpd.

Blast furnace - (Reducing furnace)

uses met coke as fuel.

supplemental hood at charge area
charging and top supplemental

Blast furnace → After burner → Heat ex → A pipe →

Blast baghouse. to scrubber.

Blast furnace - 1800°

After burner → 1585° F → 1625°

baghouses are shake bagh.

90 → 120 tpd

Blast furnace bh and Reverb Bh vent to wet scrubber.

Slag treatment

fully enclosed

Crusher and screen bh exp

Fugitive Dust Facility Roads

Water Truck → Dry sweeper

Scrubber met

combined stream from blast bh and reverb bh
Runs over soda ash

Packed column PN fill

~~PA~~ Last stack test 2009

Quarterly visual inspections by plant personnel.

Refining (Hard + Soft lead)

kettle 2,3,4,5 - Hard Lead BH

kettle C,D,E,6,7 Soft Lead BH

exhaust from burner to joint ep

* Large kettle 100t - EDC, 7, 6, 5, 1

tapping kettles CP reverb to SL BH

blast tapping - B, A

60 ton kettle - 2, 3

75 tonk - B

~~100~~ Residence time dependent on final product

Finished product rate is based on cast product.
 some lost in refining step. (purification). 10 → 30%
 efficiency increase based on ~~increase~~ WWT from
 wet scrubber. Consistent operation of reverberatory furnace.
 Refining Kettle refractory brick lifespan "a couple of years"

12/15 - WWT

Added oxidation in 2003 for $\text{H}_2\text{SO}_3^{-2}$ ion elim.

Added 2nd leg

Increase pressure 60 psi → 80 psi

Added cooling loop → increased treatment efficiency

~~reduced~~ increased function of scrubber, Scrubber

was limiter on furnace operation. Furnace operations
 were varied to control sulfite levels in the scrubber
 blow down water

Crystallizer

Some salt build up in heat exchanger

monthly "boil out" for cleaning heat ex tubes

Flash digester exempt from controls (process heater low capacity)

Boiler 3,000,000 BTU

12-16 hr startup

Facility built in 1963 by GNB Purchased in 2000 by Exide

Produced lead oxide by importing ~~from~~ soft lead by train
 And truck

1971-1972 began recycling
 SWT

12/16/2009
~~2008~~

EI up to 2008 includes = Reverb product + Blast product + scrap
EI up 2009 will be calculated as Reverb + Blast no scrap
Blast.

Feed (charge) to furnaces.

blast charge report -

dryer gpc charge sheet.

tap slag pot report board.

Title U

12/18

NO wetting Records in Blast Furnace Area

Battery Storage Area (NO MACT)

Battery Breaker - partial enclosure of storage piles. wet suppression

pavement cleaning 2x daily

partial enclosure requires 3/4 coverage with walls

RMS. - building walls intact ~~degraded~~

negative pressure to ensure in-draft through any doorway

full fugitive enclosure hoods for dryer transition pieces.

Reverb furnace partial enclosure pavement clean 2x daily

charging area hood enclosure

slag traps hooded enclosure

lead traps hooded enclosure

Blast furnace - piles metal partial enclosed

pavement cleaning 2x daily partial enclosure

slag and lead traps enclosed.

Blast charging area hooded.

Reverb kettles - partial enclosure (enclosure hoods?)

pavement cleaning

Slag treatment hoods

Oxide

Barton Pot Reactor

Operating temperature 750-800 °F

6 reactors in oxide plant

melting pots feed reactors 3 melting pots

Air inlet in reactor controlled by damper

1 baghouse per reactor

2 hammer mills 2 hammer mill baghouse,

melting pots NATURAL GAS fired

trough heater

Oxide building has no control for fug. fines

Oxide building is exempt from reslap

~~app~~ operating hours can range from 24/7 or less.

2-3 hour start up time

has bag leak detection system

10 years since last stack test 1995

has individual tank magnetoh

5 100,000 lb storage hoppers

1 hygiene baghouse

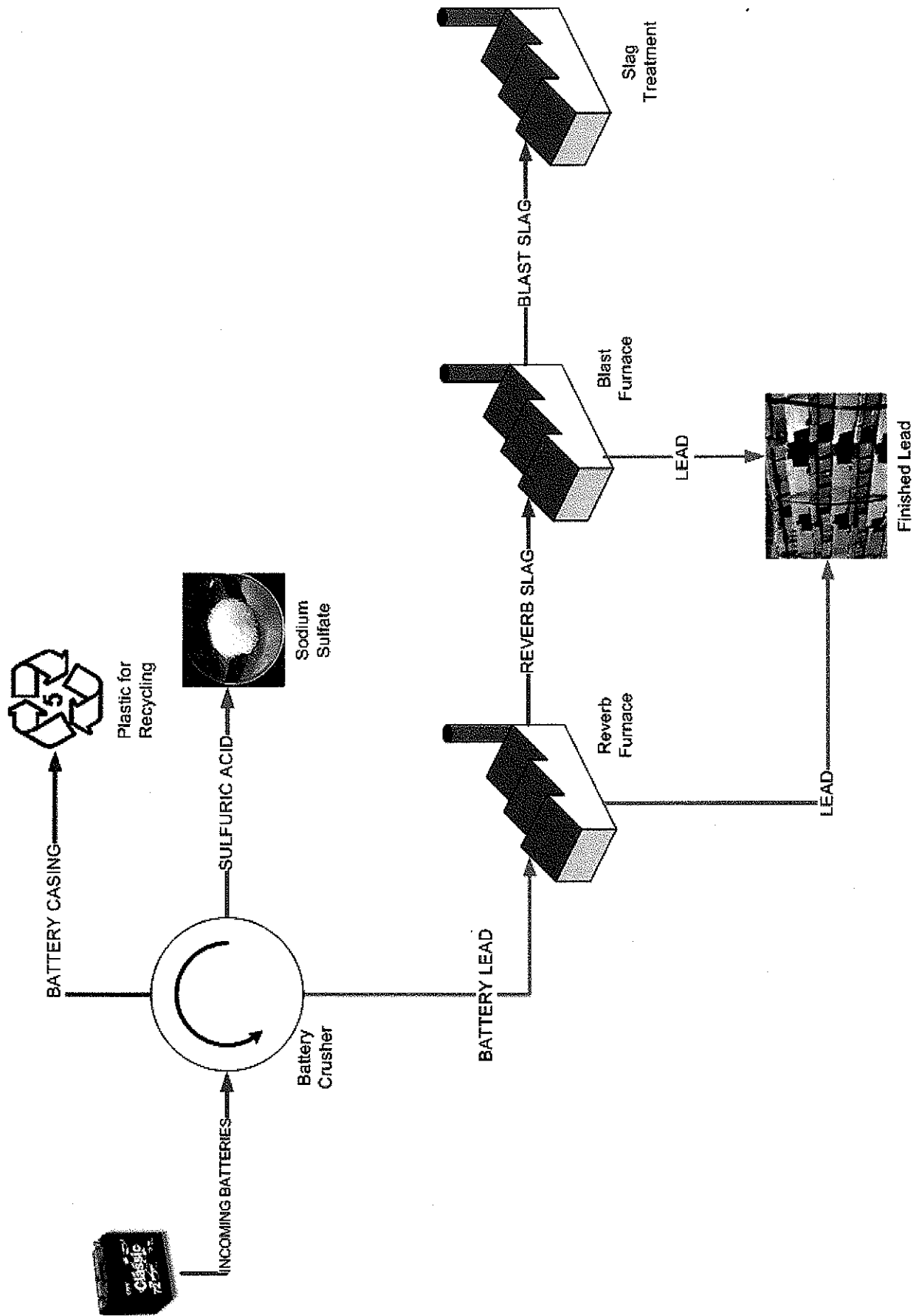
All shaken baghouses

All transfer points are covered or enclosed

loading not enclosed does have vacuum line to hygiene baghouse

PROCESS FLOW DIAGRAM

FRISCO RECYCLING



FRISCO SMELTER (862)

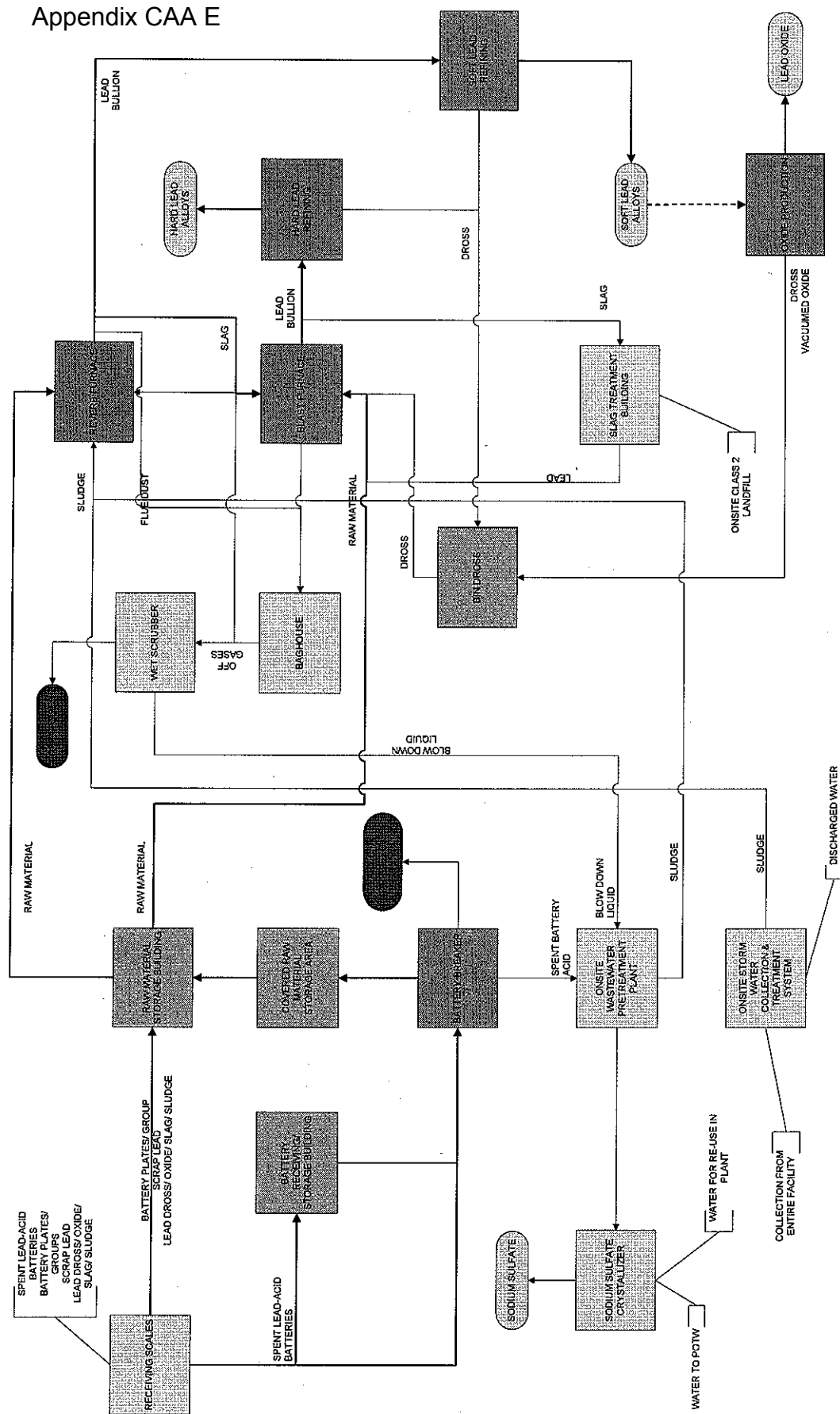
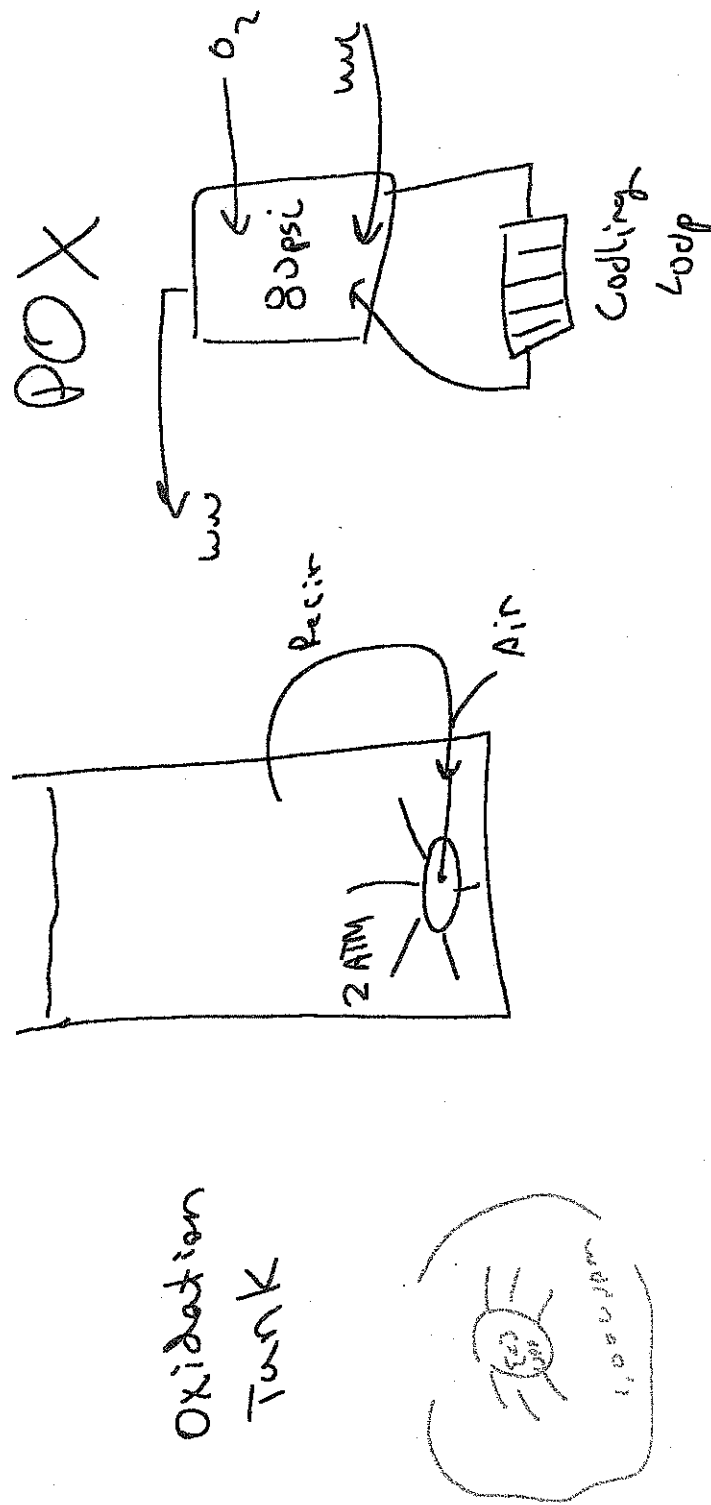
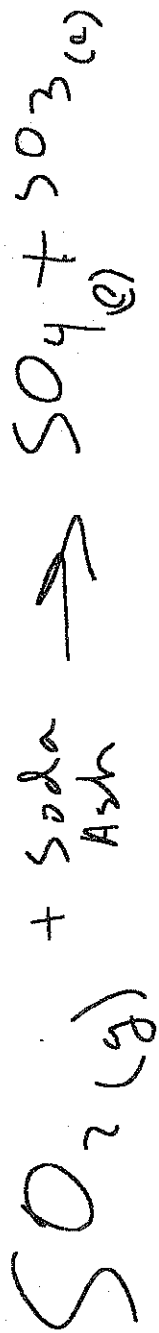


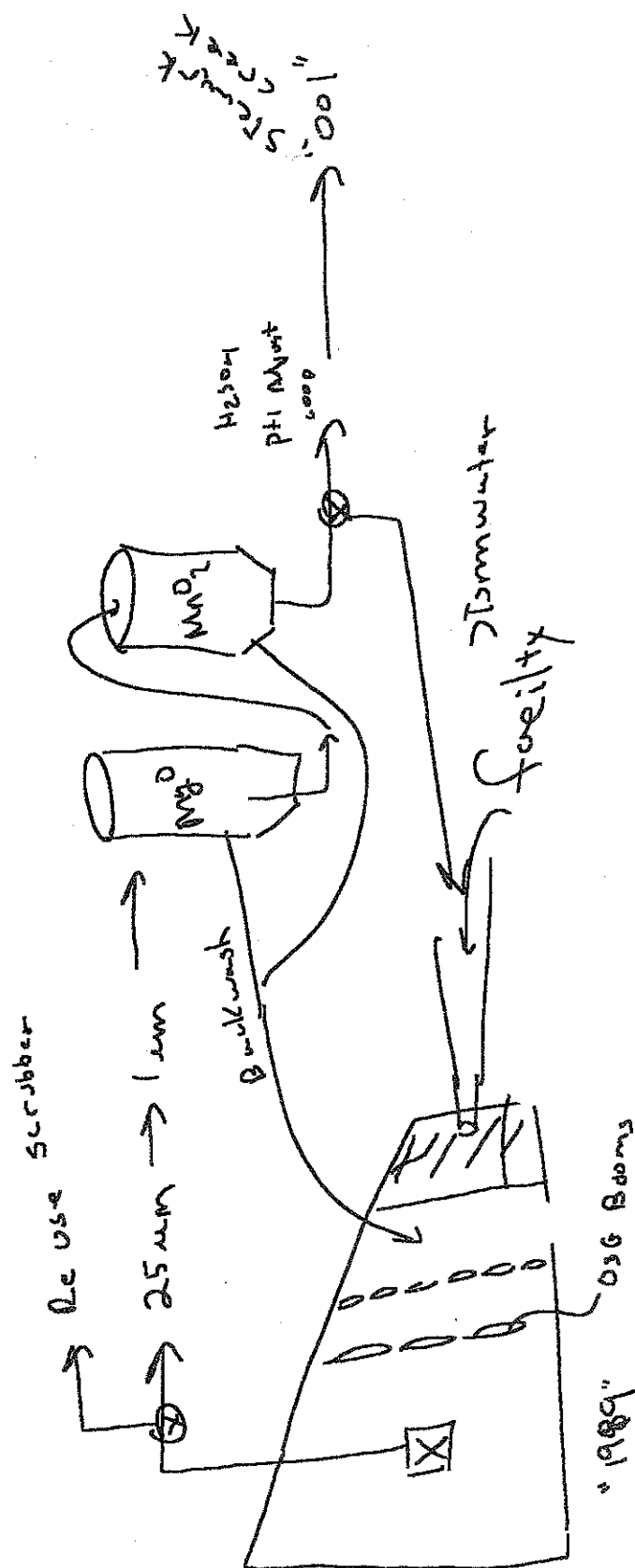


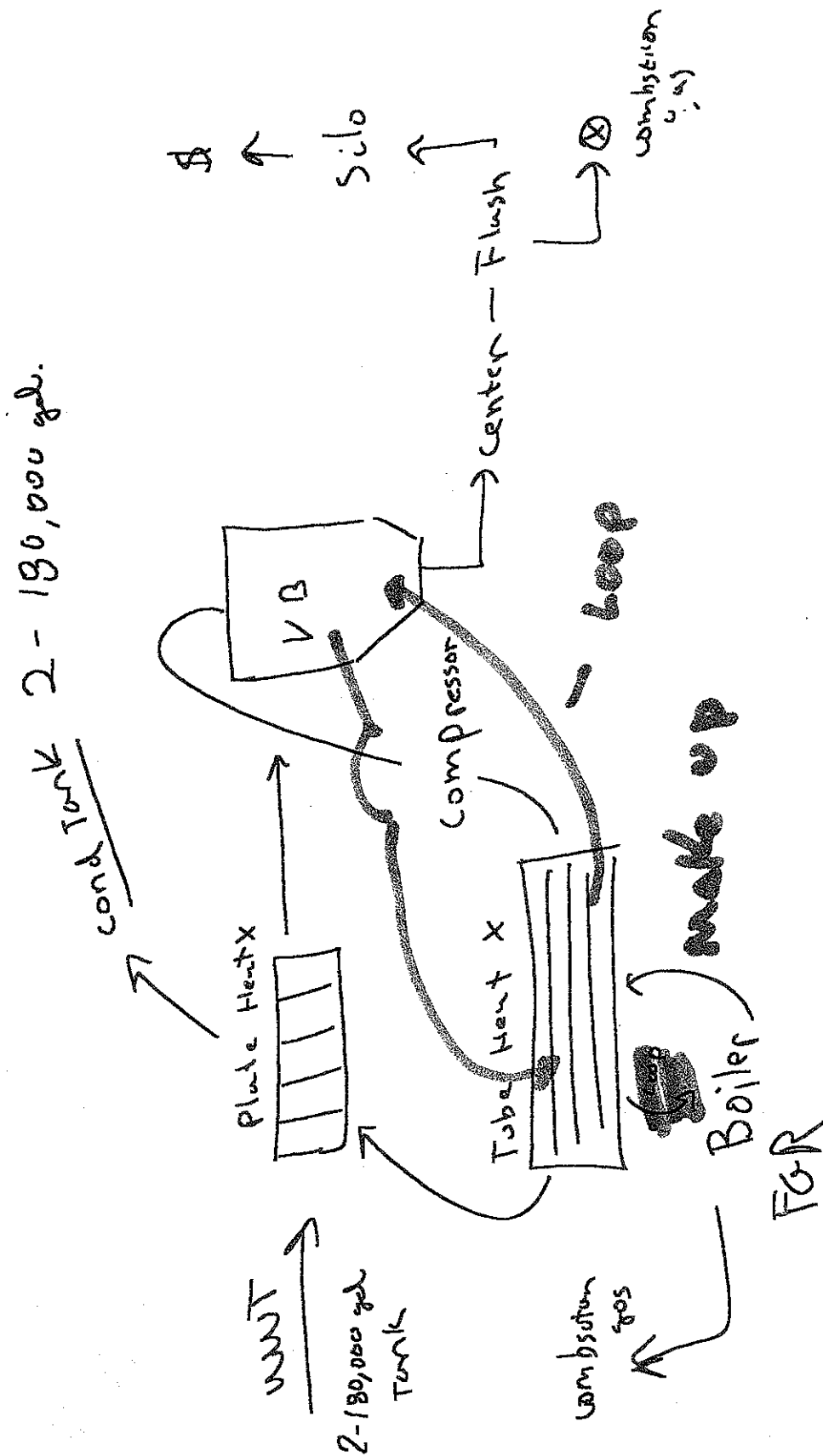
Figure 3
Wastewater Treatment
Process Flow Diagram
Exide Facility
Frisco, Texas



Scrubber

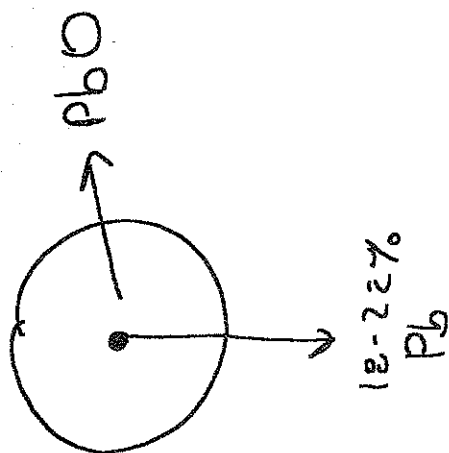


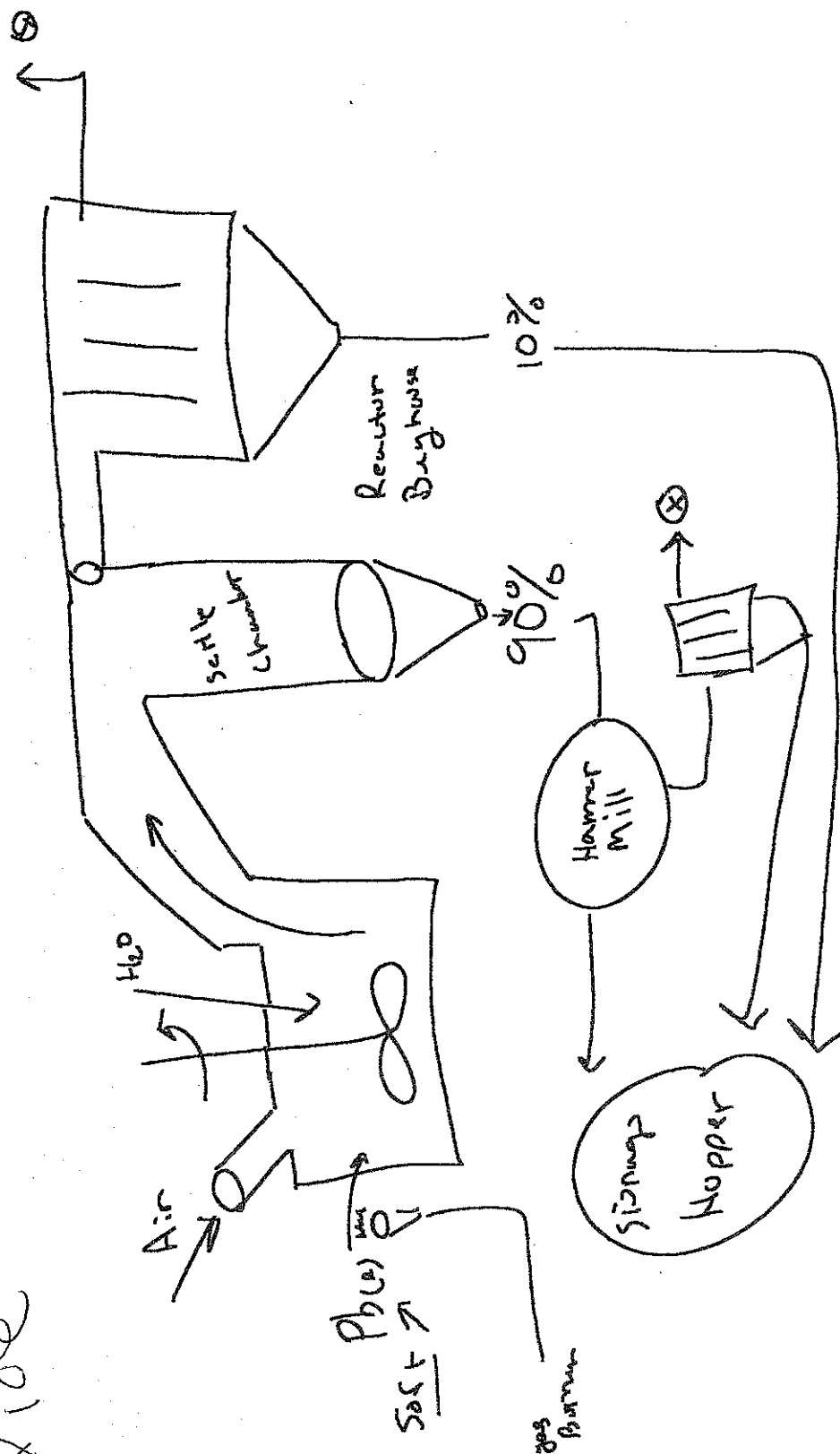




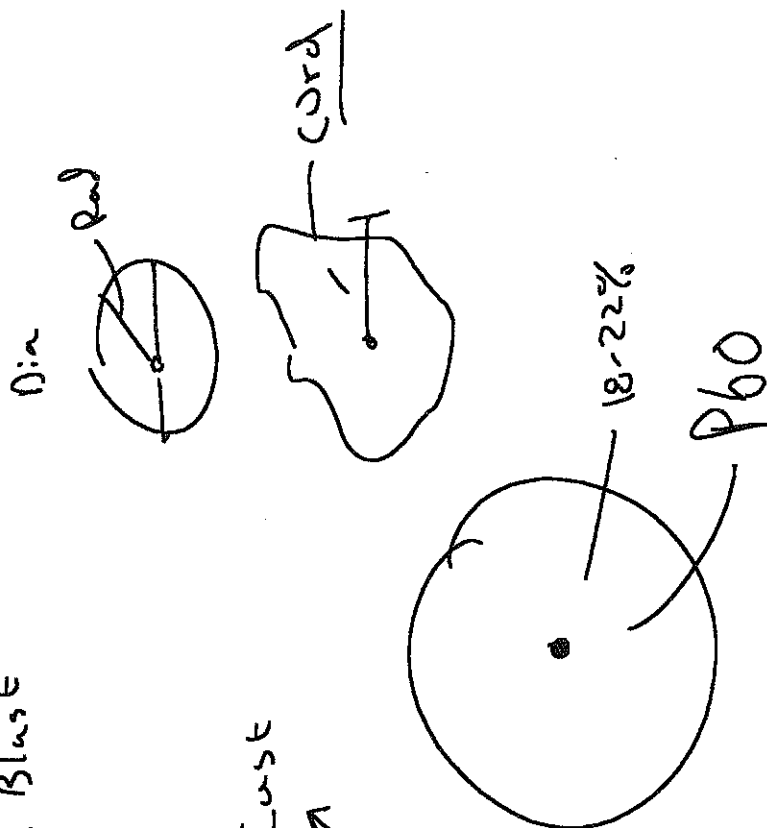
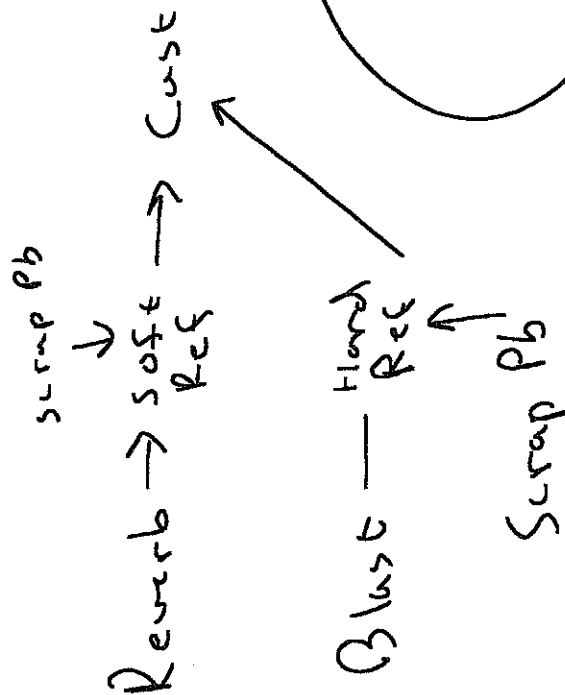
Crystallizer

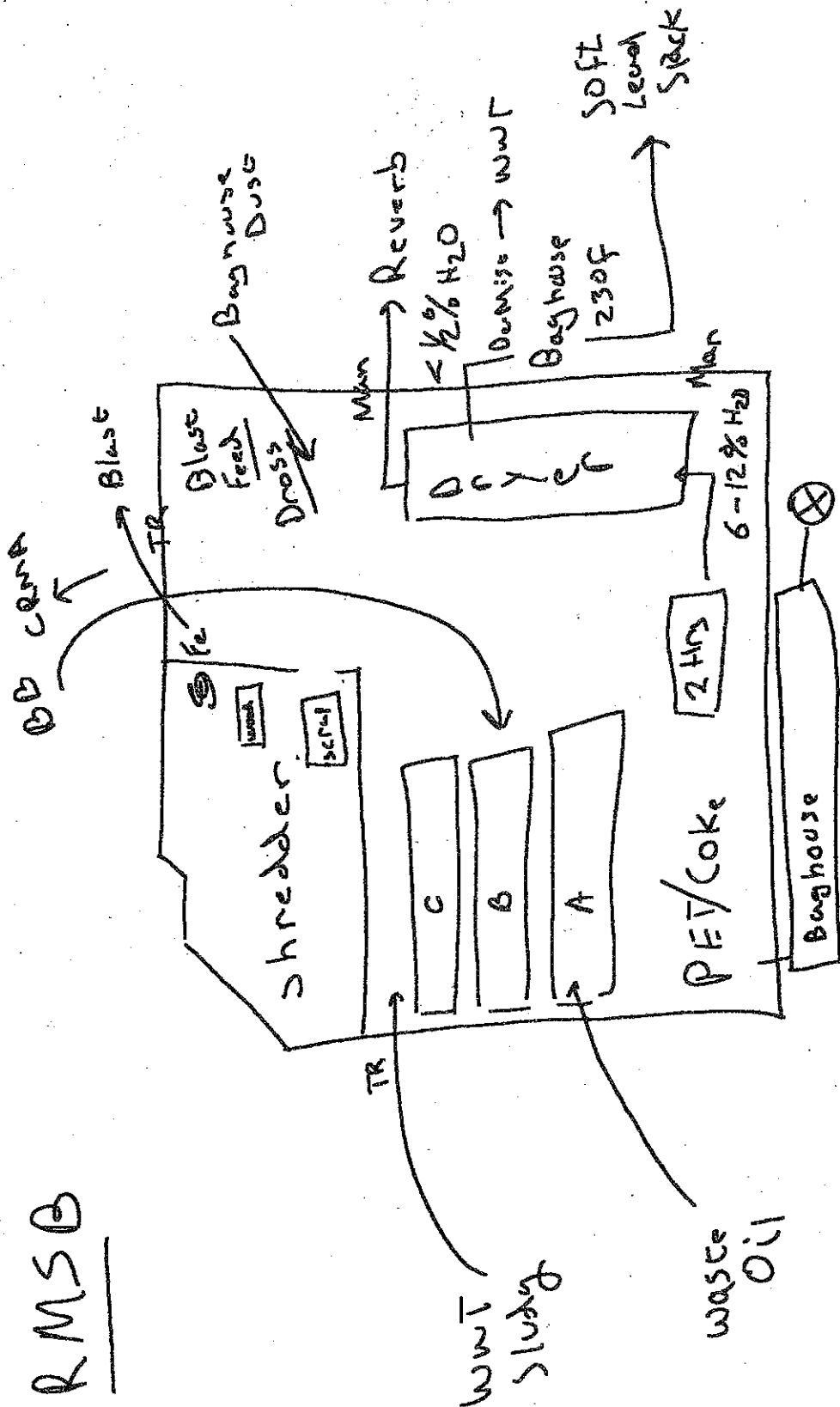
Oxide Barton Pot Reactor

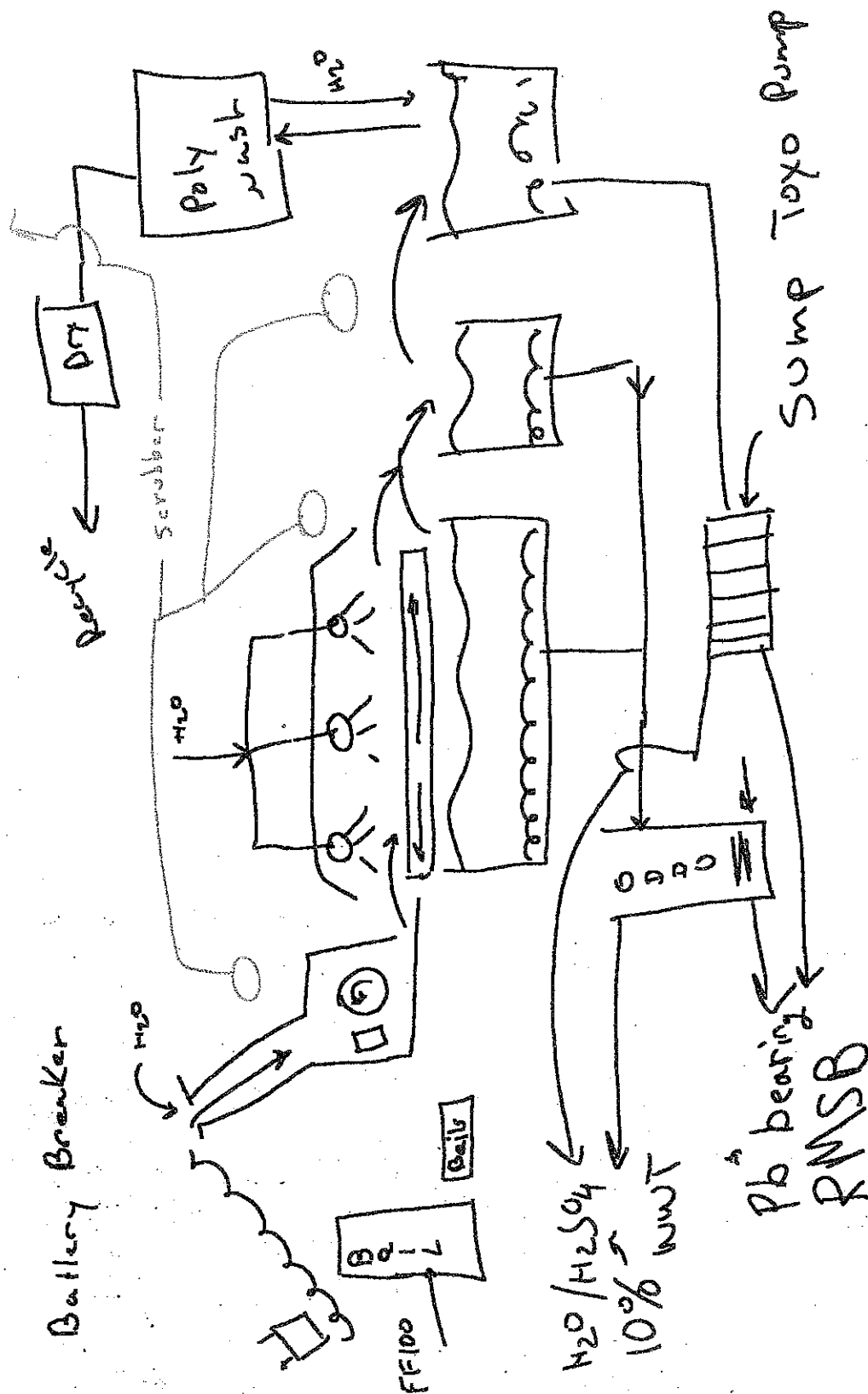




72,000 Tpy Finished goods
From Reverb & Blast







Feed

Batteries

Auto

Industrial

Misc

Scrap

Battery Manufacture

Lead based

Misc → Battery Plates

Scrap Lead

Products

Lead / Lead Alloys → Pigs (60 lbs)

Lead Oxide

By-Products

Sodium Sulfate

Tin Dross

Poly - Battery Cases

End Waste

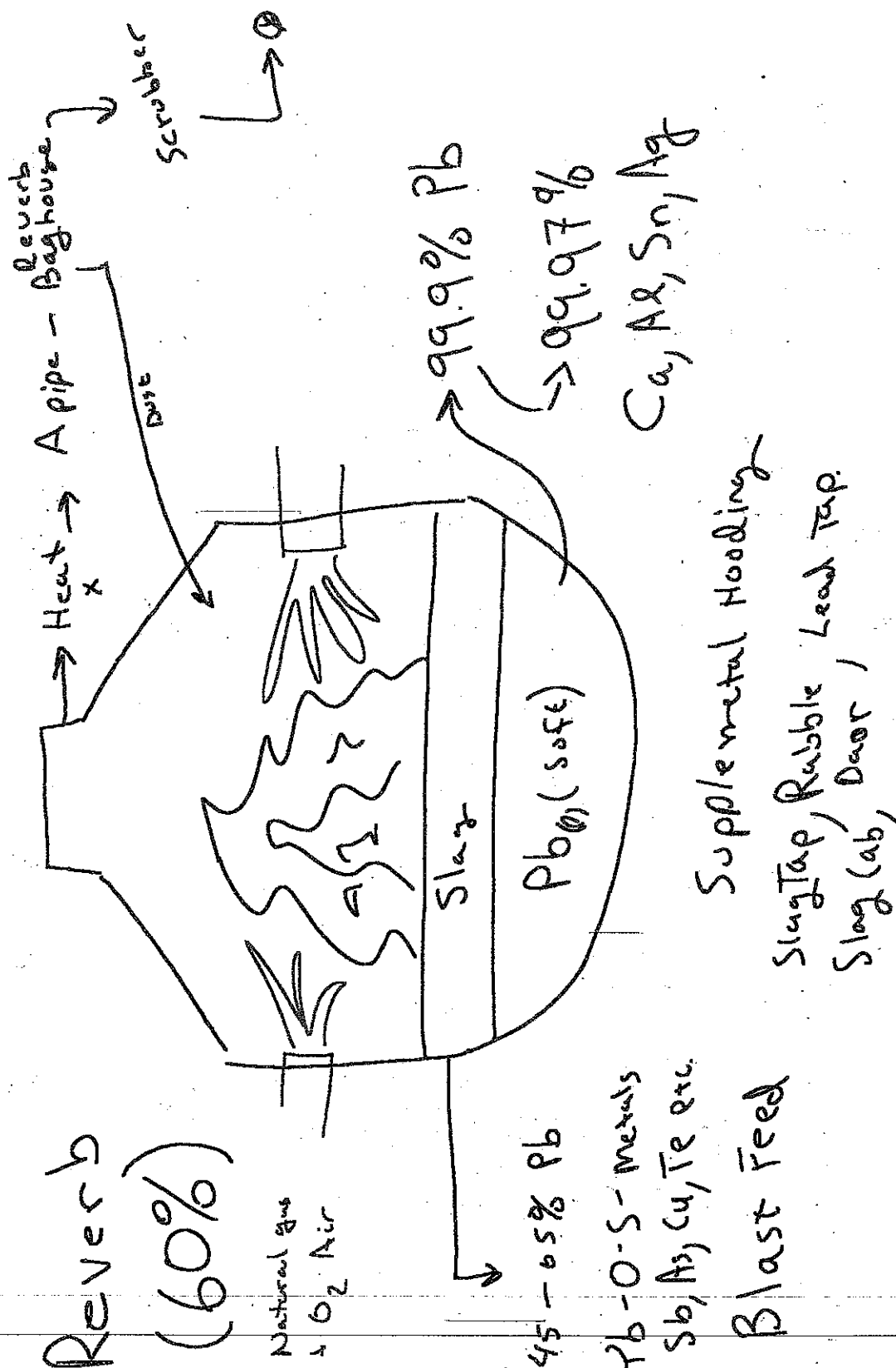
Blast Slag - Non-Haz onsite

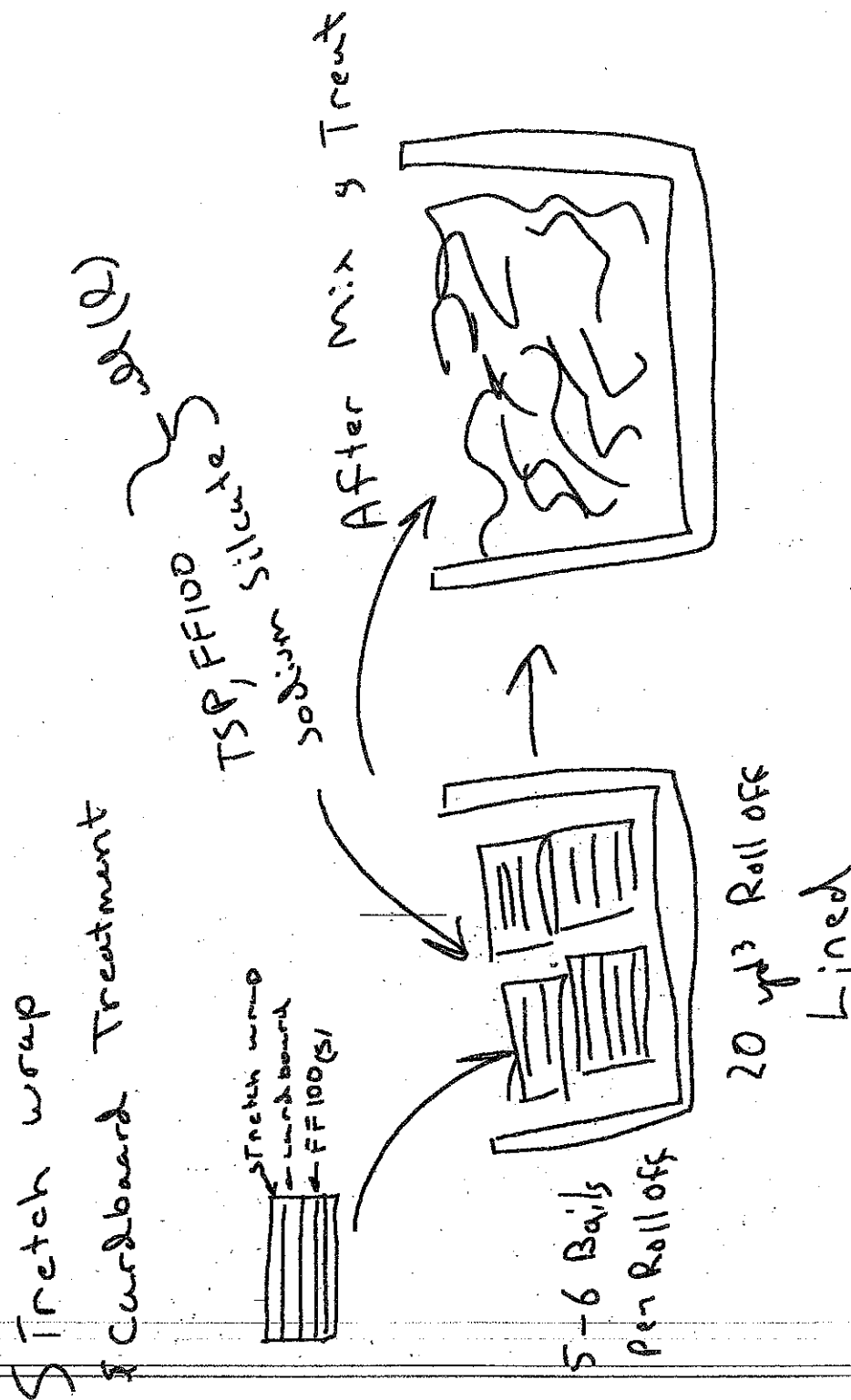
Furnace Brick - Haz / non-Haz on/off
Stretch wrap, Carbonized, non-Haz off

Misc

↳ Concrete, Debris / Plastic

MgO??

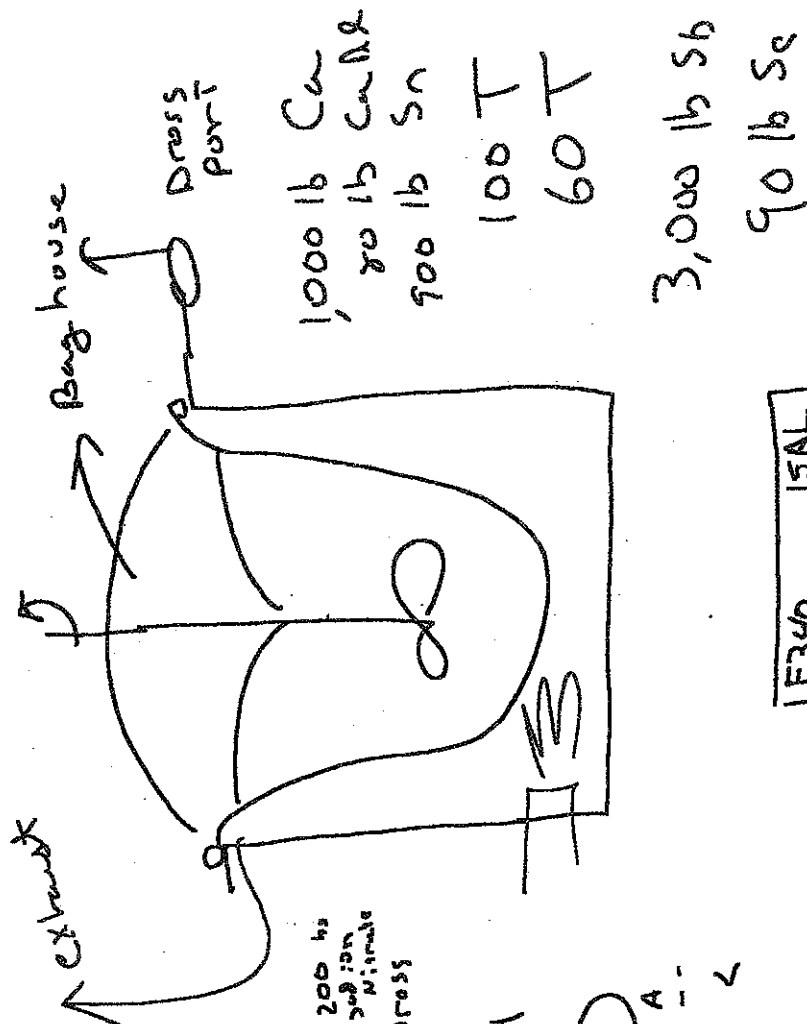




James
Lester

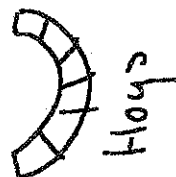
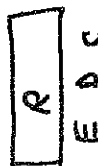
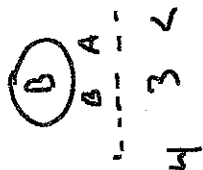
De-Time \rightarrow Hart 1200 / oxide reduction \rightarrow Remove Gross

Caustic wash 200 NaOH 200 NaNO_3

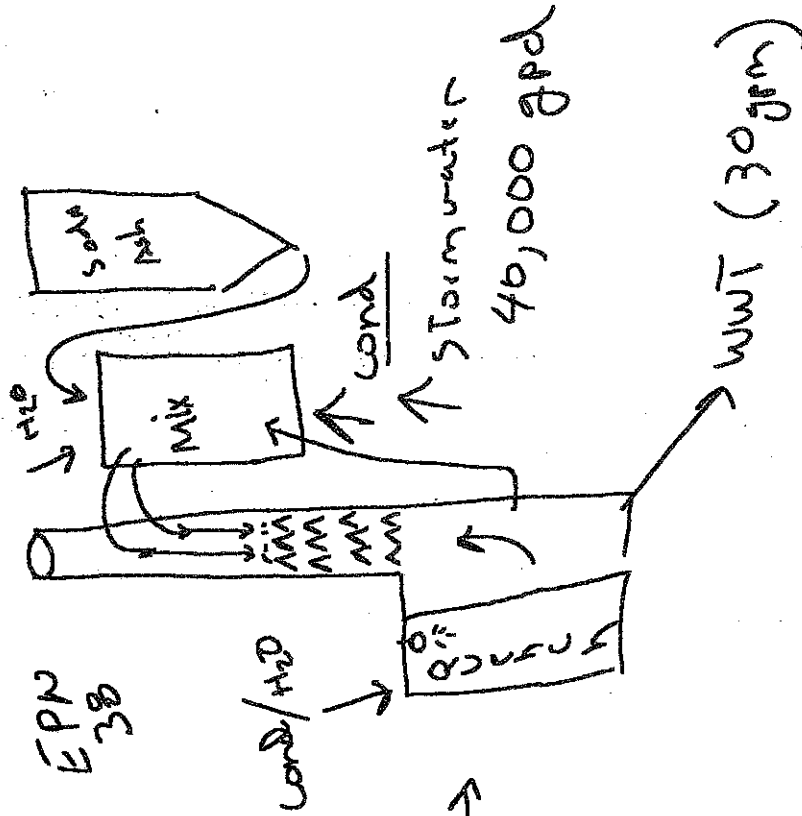
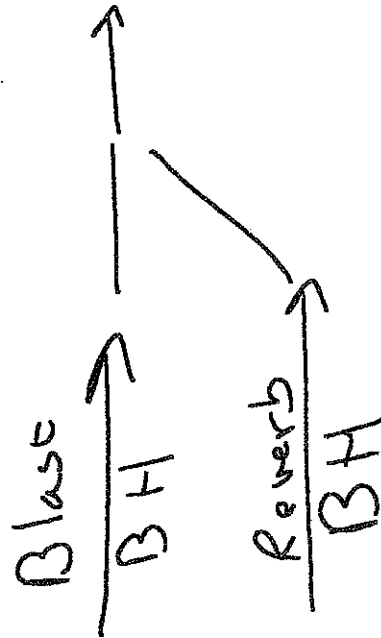


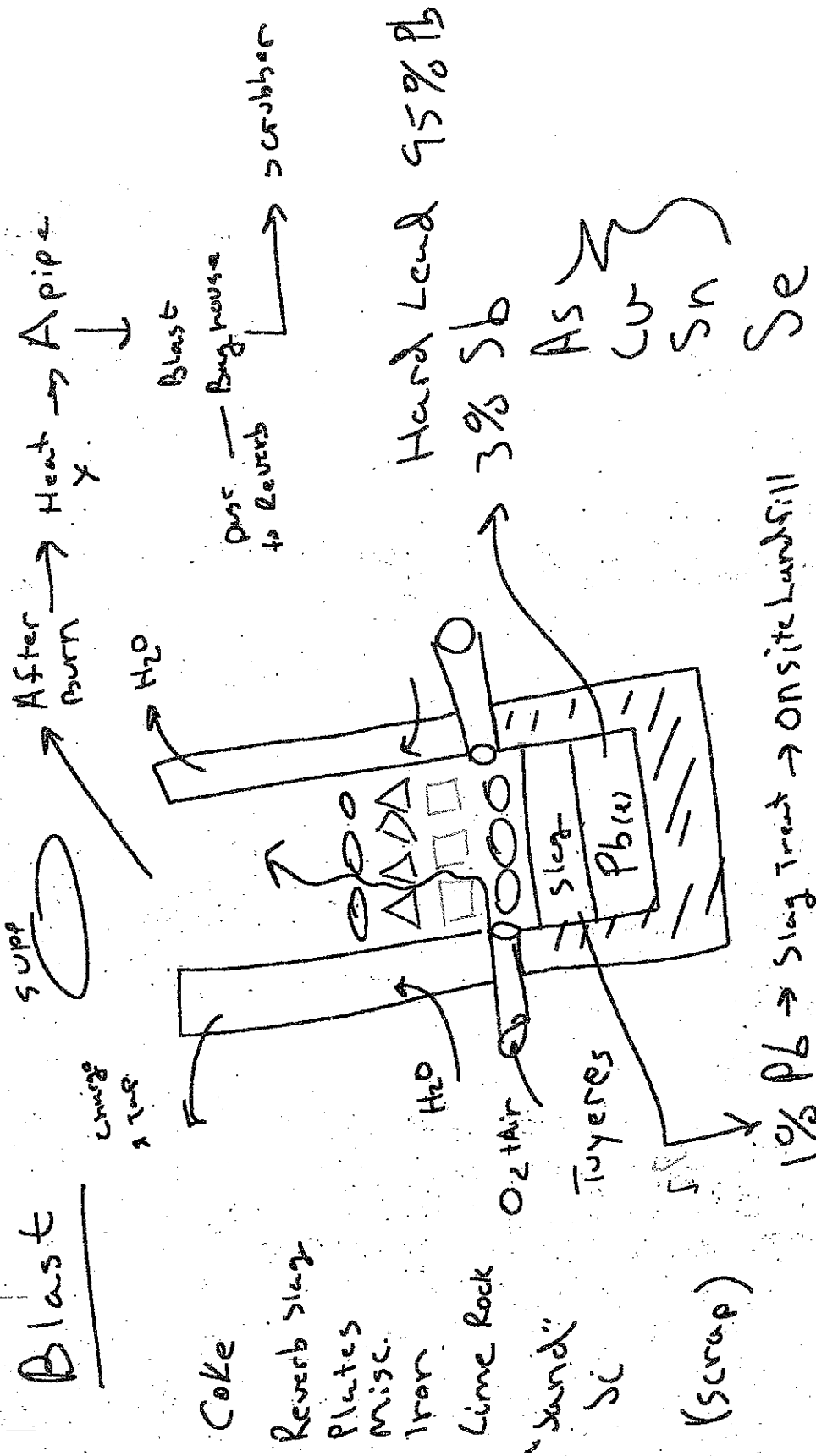
F340 15AL

76

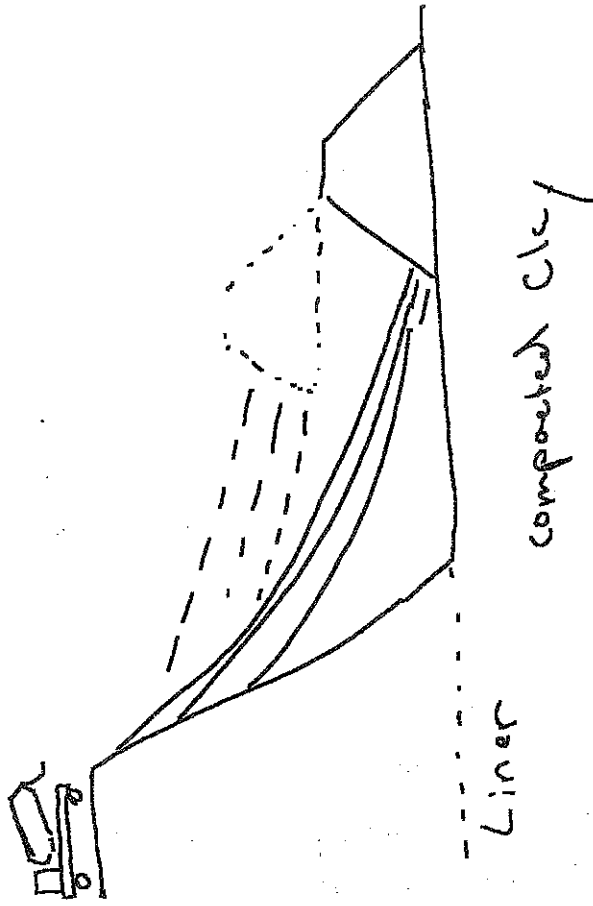
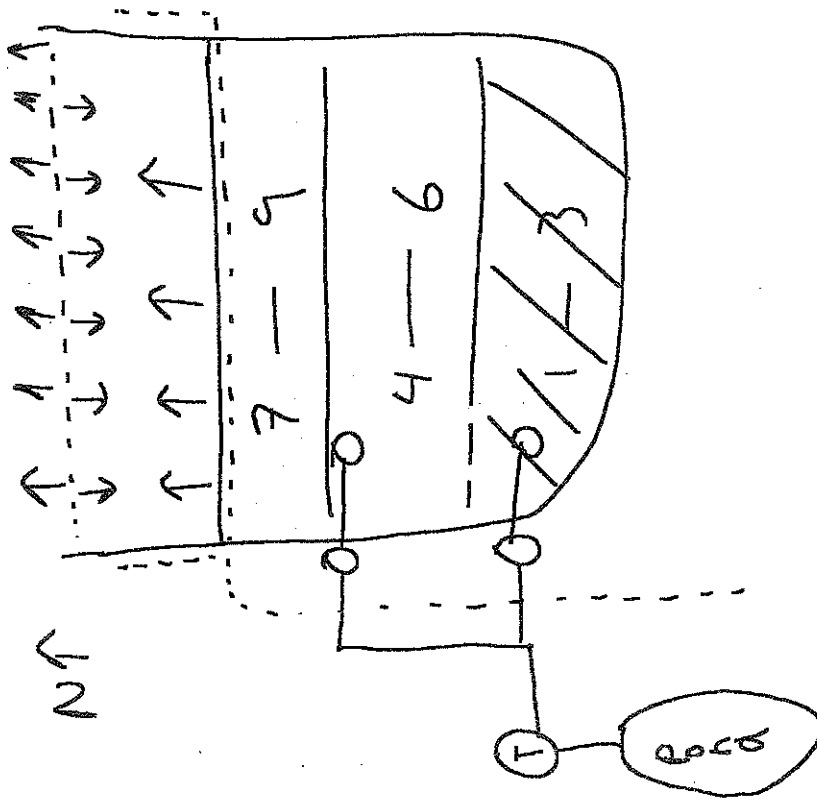


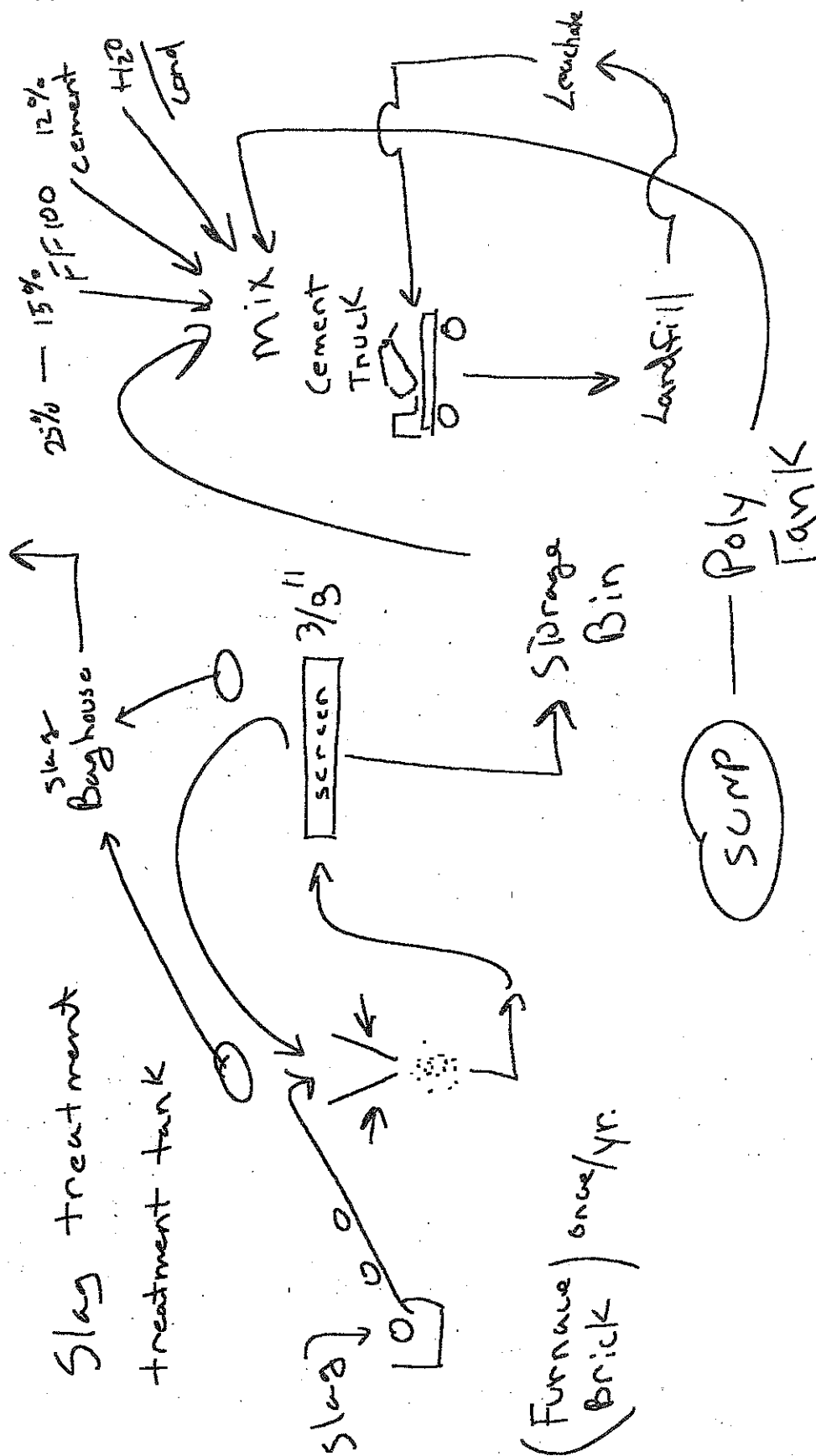
Scrubber





Landfill





Appendix CAA-F

Copy of Exide Title V Operating Permit O1649

Buddy Garcia, *Chairman*
Larry R. Soward, *Commissioner*
Bryan W. Shaw, Ph.D., *Commissioner*
Mark R. Vickery, P.G., *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Protecting Texas by Reducing and Preventing Pollution

April 27, 2009

MR DONALD G BARAR
PLANT MANAGER
EXIDE TECHNOLOGIES
PO BOX 250
FRISCO TX 75034-0250

Re: Effective Permit Approval
Renewal
Permit Number: O1649
Exide Technologies
Frisco Battery Recycling Plant
Frisco, Collin County
Regulated Entity Number: RN100218643
Customer Reference Number: CN600129787
Account Number: CP-0029-G

Dear Mr. Barar:

The effective federal operating permit (FOP) for Exide Technologies, Frisco Battery Recycling Plant, is enclosed. This FOP constitutes authority to operate the emission units identified in the FOP application.

All site operating permits are subject to public petition for 60 days following the expiration of the 45-day U.S. Environmental Protection Agency (EPA) review. The public petition period for the FOP extends from April 4, 2009, until June 2, 2009. If the EPA receives a valid petition and objects to the above-referenced permit, you will be notified promptly by the Texas Commission on Environmental Quality (TCEQ).

It should be noted that from the date of this letter Exide Technologies, Frisco Battery Recycling Plant, must operate in accordance with the requirements of Title 30 Texas Administrative Code Chapter 122 (30 TAC Chapter 122) and the FOP. Some of the terms and conditions contained in the FOP include recordkeeping conditions, reporting conditions (which includes deviation reporting), and compliance certification conditions. All reports, along with any questions regarding the reports, shall be forwarded to the Texas Commission on Environmental Quality Dallas/Fort Worth Regional Office, 2309 Gravel Drive, Fort Worth, Texas 76118-6951.

Consistent with 30 TAC Chapter 122, Subchapter C, the permit holder shall submit an application to the Air Permits Division (APD) for a revision to an FOP for those activities at a site which change, add, or remove one or more FOP terms or conditions. The permit holder shall

Mr. Donald G. Barar

Page 2

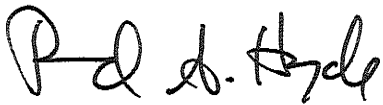
April 27, 2009

also submit an application to the APD for a revision to a permit to address the following: the adoption of an applicable requirement previously designated as federally enforceable only; the promulgation of a new applicable requirement; the adoption of a new state-only requirement; or a change in a state-only designation.

Thank you again for your cooperation in this matter. If you have questions concerning the review or this notice, please contact Ms. Angelyn Eastman at (512) 239-5945.

This action is taken under authority delegated by the Executive Director of the TCEQ.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard A. Hyde". The signature is stylized with a large initial "R" and a cursive "Hyde".

Richard A. Hyde, P.E., Director
Air Permits Division
Office of Permitting and Registration
Texas Commission on Environmental Quality

RAH/AE/ssl

cc: Mr. James Messer, Manager Environmental and Quality Control, Exide
Technologies, Frisco
Mr. Larry Eagan, Director, South Central Region, Exide Technologies, Frisco
Air Section Manager, Region 4 - Fort Worth

Enclosure: Effective Permit

cc: Air Permit Section Chief, U.S. Environmental Protection Agency, Region 6, Dallas

Project Number: 12270

FEDERAL OPERATING PERMIT

A FEDERAL OPERATING PERMIT IS HEREBY ISSUED TO

Exide Technologies

AUTHORIZING THE OPERATION OF

Frisco Battery Recycling Plant
Secondary Nonferrous Metals

LOCATED AT

Collin County, Texas

Latitude 33° 8' 30" Longitude 096° 49' 53"

Regulated Entity Number: RN100218643

This permit is issued in accordance with and subject to the Texas Clean Air Act (TCAA), Chapter 382 of the Texas Health and Safety Code and Title 30 Texas Administrative Code Chapter 122 (30 TAC Chapter 122), Federal Operating Permits. Under 30 TAC Chapter 122, this permit constitutes the permit holder's authority to operate the site and emission units listed in this permit. Operations of the site and emission units listed in this permit are subject to all additional rules or amended rules and orders of the Commission pursuant to the TCAA.

This permit does not relieve the permit holder from the responsibility of obtaining New Source Review authorization for new, modified, or existing facilities in accordance with 30 TAC Chapter 116, Control of Air Pollution by Permits for New Construction or Modification.

The site and emission units authorized by this permit shall be operated in accordance with 30 TAC Chapter 122, the general terms and conditions, special terms and conditions, and attachments contained herein.

This permit shall expire five years from the date of issuance. The renewal requirements specified in 30 TAC § 122.241 must be satisfied in order to renew the authorization to operate the site and emission units.

Permit No: 01649 Issuance Date: April 27, 2009


For the Commission

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GENERAL TERMS AND CONDITIONS

The permit holder shall comply with all terms and conditions contained in 30 TAC § 122.143 (General Terms and Conditions), 30 TAC § 122.144 (Recordkeeping Terms and Conditions), 30 TAC § 122.145 (Reporting Terms and Conditions), and 30 TAC § 122.146 (Compliance Certification Terms and Conditions).

If the permit holder chooses to demonstrate that this permit is no longer required, a written request to void this permit shall be submitted to the Texas Commission on Environmental Quality (TCEQ) by the Responsible Official in accordance with 30 TAC § 122.161(e). The permit holder shall comply with the permit's requirements, including compliance certification and deviation reporting, until notified by the TCEQ that this permit is voided.

The permit holder shall comply with 30 TAC Chapter 116 by obtaining a New Source Review authorization prior to new construction or modification of emission units located in the area covered by this permit.

All reports required by this permit shall be forwarded to the TCEQ Central Office and to the TCEQ Regional Office for your site. Reports submitted must include a cover letter which identifies the following information: company name, TCEQ regulated entity number, site name, area name (if applicable), and Air Permits Division permit number.

SPECIAL TERMS AND CONDITIONS:

Emission Limitations and Standards, Monitoring and Testing, and Recordkeeping and Reporting:

1. Permit holder shall comply with the following requirements:
 - A. Emission units (including groups and processes) in the Applicable Requirements Summary attachment shall meet the limitations, standards, equipment specifications, monitoring, recordkeeping, reporting, testing, and other requirements listed in the Applicable Requirements Summary attachment to assure compliance with the permit.
 - B. The textual description in the column titled "Textual Description" in the Applicable Requirements Summary attachment is not enforceable and is not deemed as a substitute for the actual regulatory language. The Textual Description is provided for information purposes only.
 - C. A citation listed on the Applicable Requirements Summary attachment, which has a notation [G] listed before it, shall include the referenced section and subsection for all commission rules, or paragraphs for all federal and state regulations and all subordinate paragraphs, subparagraphs and clauses, subclauses, and items contained within the referenced citation as applicable requirements.

2. The permit holder shall comply with the following sections of 30 TAC Chapter 101 (General Air Quality Rules):
 - A. Title 30 TAC § 101.1 (relating to Definitions), insofar as the terms defined in this section are used to define the terms used in other applicable requirements
 - B. Title 30 TAC § 101.3 (relating to Circumvention)
 - C. Title 30 TAC § 101.8 (relating to Sampling), if such action has been requested by the TCEQ
 - D. Title 30 TAC § 101.9 (relating to Sampling Ports), if such action has been requested by the TCEQ
 - E. Title 30 TAC § 101.10 (relating to Emissions Inventory Requirements)
 - F. Title 30 TAC § 101.201 (relating to Emission Event Reporting and Recordkeeping Requirements)
 - G. Title 30 TAC § 101.211 (relating to Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements)
 - H. Title 30 TAC § 101.221 (relating to Operational Requirements)
 - I. Title 30 TAC § 101.222 (relating to Demonstrations)
 - J. Title 30 TAC § 101.223 (relating to Actions to Reduce Excessive Emissions)
3. Permit holder shall comply with the following requirements of 30 TAC Chapter 111:
 - A. For stationary vents with a flow rate of less than 100,000 actual cubic feet per minute and constructed on or before January 31, 1972 that are not listed in the Applicable Requirements Summary attachment, the permit holder shall comply with the following requirements:
 - (i) Title 30 TAC § 111.111(a)(1)(A) (relating to Requirements for Specified Sources)
 - (ii) Title 30 TAC § 111.111(a)(1)(E)
 - (iii) Title 30 TAC §§ 111.111(a)(1)(F)(i), (ii), (iii), or (iv)
 - (iv) For emission units with vent emissions subject to 30 TAC § 111.111(a)(1)(A), complying with 30 TAC §§ 111.111(a)(1)(F)(ii), (iii), or (iv), and capable of producing visible emissions from (but not limited to) particulate matter, acid gases, and NO_x, the permit holder shall also comply with the following periodic monitoring requirements for the purpose of annual compliance certification under 30 TAC § 122.146.

These periodic monitoring requirements do not apply to vents that do not emit visible emissions such as vents that emit only VOC or vents that provide passive ventilation, such as plumbing vents; or vents that are subject to the emission limitation of 30 TAC § 111.111(a)(1)(A) and Compliance Assurance Monitoring, as specified in the attached Applicable Requirements Summary and “Additional Monitoring Requirements:”

1. An observation of stationary vents from emission units in operation shall be conducted at least once during each calendar quarter unless the emission unit is not operating for the entire quarter.
2. For stationary vents from a combustion source, if an alternative to the normally fired fuel is fired for a period greater than or equal to 24 consecutive hours, the permit holder shall conduct an observation of the stationary vent for each such period to determine if visible emissions are present. If such period is greater than three months, observations shall be conducted once during each quarter. Supplementing the normally fired fuel with natural gas or fuel gas to increase the net heating value to the minimum required value does not constitute creation of an alternative fuel.
3. Records of all observations shall be maintained.
4. Visible emissions observations of emission units operated during daylight hours shall be conducted no earlier than one hour after sunrise and no later than one hour before sunset. Visible emissions observations of emission units operated only at night must be made with additional lighting and the temporary installation of contrasting backgrounds. Visible emissions observations shall be made during times when the activities described in 30 TAC § 111.111(a)(1)(E) are not taking place. Visible emissions shall be determined with each stationary vent in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 mile, away from each stationary vent during the observation. For outdoor locations, the observer shall select a position where the sun is not directly in the observer’s eyes. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. A certified opacity reader is not required for visible emissions observations.

5. Compliance Certification:

- (a) If visible emissions are not present during the observation, the RO may certify that the source is in compliance with the applicable opacity requirement in 30 TAC §§ 111.111(a)(1) and (a)(1)(A).
 - (b) However, if visible emissions are present during the observation, the permit holder shall either list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2) or conduct the appropriate opacity test specified in 30 TAC § 111.111(a)(1)(F) to determine if the source is in compliance with the opacity requirements. If an opacity test is performed and the source is determined to be in compliance, the RO may certify that the source is in compliance with the applicable opacity requirement. However, if an opacity test is performed and the source is determined to be out of compliance, the permit holder shall list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2). The opacity test must be performed by a certified opacity reader.
 - (c) Some vents may be subject to multiple visible emission or monitoring requirements. All credible data must be considered when certifying compliance with this requirement even if the observation or monitoring was performed to demonstrate compliance with a different requirement.
- B. For stationary vents with a flow rate of less than 100,000 actual cubic feet per minute and constructed after January 31, 1972 that are not listed in the Applicable Requirements Summary attachment, the permit holder shall comply with the following requirements:
- (i) Title 30 TAC § 111.111(a)(1)(B) (relating to Requirements for Specified Sources)
 - (ii) Title 30 TAC § 111.111(a)(1)(E)
 - (iii) Title 30 TAC §§ 111.111(a)(1)(F)(i), (ii), (iii), or (iv)
 - (iv) For emission units with vent emissions subject to 30 TAC § 111.111(a)(1)(B), complying with 30 TAC §§ 111.111(a)(1)(F)(ii), (iii), or (iv), and capable of producing visible emissions from (but not limited to) particulate matter, acid gases, and NO_x, the permit holder shall also comply with the following periodic monitoring requirements for the purpose of annual compliance certification under 30 TAC § 122.146.

These periodic monitoring requirements do not apply to vents that do not emit visible emissions such as vents that emit only VOC or vents that provide passive ventilation, such as plumbing vents; or vents that are subject to the emission limitation of 30 TAC § 111.111(a)(1)(B) and Compliance Assurance Monitoring, as specified in the attached “Applicable Requirements Summary” and “Additional Monitoring Requirements.”

1. An observation of stationary vents from emission units in operation shall be conducted at least once during each calendar quarter unless the emission unit is not operating for the entire quarter.
2. For stationary vents from a combustion source, if an alternative to the normally fired fuel is fired for a period greater than or equal to 24 consecutive hours, the permit holder shall conduct an observation of the stationary vent for each such period to determine if visible emissions are present. If such period is greater than three months, observations shall be conducted once during each quarter. Supplementing the normally fired fuel with natural gas or fuel gas to increase the net heating value to the minimum required value does not constitute creation of an alternative fuel.
3. Records of all observations shall be maintained.
4. Visible emissions observations of emission units operated during daylight hours shall be conducted no earlier than one hour after sunrise and no later than one hour before sunset. Visible emissions observations of emission units operated only at night must be made with additional lighting and the temporary installation of contrasting backgrounds. Visible emissions observations shall be made during times when the activities described in 30 TAC § 111.111(a)(1)(E) are not taking place. Visible emissions shall be determined with each stationary vent in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 mile, away from each stationary vent during the observation. For outdoor locations, the observer shall select a position where the sun is not directly in the observer’s eyes. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. A certified opacity reader is not required for visible emissions observations.

5. Compliance Certification:

- (a) If visible emissions are not present during the observation, the RO may certify that the source is in compliance with the applicable opacity requirement in 30 TAC §§ 111.111(a)(1) and (a)(1)(B).
- (b) However, if visible emissions are present during the observation, the permit holder shall either list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2) or conduct the appropriate opacity test specified in 30 TAC § 111.111(a)(1)(F) to determine if the source is in compliance with the opacity requirements. If an opacity test is performed and the source is determined to be in compliance, the RO may certify that the source is in compliance with the applicable opacity requirement. However, if an opacity test is performed and the source is determined to be out of compliance, the permit holder shall list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2). The opacity test must be performed by a certified opacity reader.
- (c) Some vents may be subject to multiple visible emission or monitoring requirements. All credible data must be considered when certifying compliance with this requirement even if the observation or monitoring was performed to demonstrate compliance with a different requirement.

C. For visible emissions from a building, enclosed facility, or other structure; the permit holder shall comply with the following requirements:

- (i) Title 30 TAC § 111.111(a)(7)(A) (relating to Requirements for Specified Sources)
- (ii) Title 30 TAC §§ 111.111(a)(7)(B)(i) or (ii)
- (iii) For a building containing an air emission source, enclosed facility, or other structure containing or associated with an air emission source subject to 30 TAC § 111.111(a)(7)(A), complying with 30 TAC §§ 111.111(a)(7)(B)(i) or (ii), and capable of producing visible emissions from (but not limited to) particulate matter, acid gases, and NO_x, the permit holder shall also comply with the following periodic monitoring requirements for the purpose of annual compliance certification under 30 TAC § 122.146:

1. An observation of visible emissions from a building containing an air emission source, enclosed facility, or other structure containing or associated with an air emission source which is required to comply with 30 TAC § 111.111(a)(7)(A) shall be conducted at least once during each calendar quarter unless the air emission source or enclosed facility is not operating for the entire quarter.
2. Records of all observations shall be maintained.
3. Visible emissions observations of air emission sources or enclosed facilities operated during daylight hours shall be conducted no earlier than one hour after sunrise and no later than one hour before sunset. Visible emissions observations of air emission sources or enclosed facilities operated only at night must be made with additional lighting and the temporary installation of contrasting backgrounds. Visible emissions shall be determined with each emissions outlet in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 mile, away from each emissions outlet during the observation. For outdoor locations, the observer shall select a position where the sun is not directly in the observer's eyes. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. A certified opacity reader is not required for visible emissions observations.
4. Compliance Certification:
 - (a) If visible emissions are not present during the observation, the RO may certify that the source is in compliance with the applicable opacity requirement in 30 TAC §§ 111.111(a)(7) and (a)(7)(A).
 - (b) However, if visible emissions are present during the observation, the permit holder shall either list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2) or conduct the appropriate opacity test specified in 30 TAC § 111.111(a)(7)(B) to determine if the source is in compliance with the opacity requirements. If an opacity test is performed and the source is determined to be in compliance, the RO may certify that the source is in compliance with the applicable opacity requirement. However, if an opacity test is performed and the source is determined to be out of compliance, the permit holder shall

list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2). The opacity test must be performed by a certified opacity reader.

D. For visible emissions from all other sources not specified in 30 TAC §§ 111.111(a)(1), (4), or (7); the permit holder shall comply with the following requirements:

(i) Title 30 TAC § 111.111(a)(8)(A) (relating to Requirements for Specified Sources)

(ii) Title 30 TAC § 111.111(a)(8)(B)(i) or (ii)

(iii) For a source subject to 30 TAC § 111.111(a)(8)(A), complying with 30 TAC §§ 111.111(a)(8)(B)(i) or (ii), and capable of producing visible emissions from (but not limited to) particulate matter, acid gases, and NO_x, the permit holder shall also comply with the following periodic monitoring requirements for the purpose of annual compliance certification under 30 TAC § 122.146:

1. An observation of visible emissions from a source which is required to comply with 30 TAC § 111.111(a)(8)(A) shall be conducted at least once during each calendar quarter unless the source is not operating for the entire quarter.

2. Records of all observations shall be maintained.

3. Visible emissions observations of sources operated during daylight hours shall be conducted no earlier than one hour after sunrise and no later than one hour before sunset. Visible emissions observations of sources operated only at night must be made with additional lighting and the temporary installation of contrasting backgrounds. Visible emissions shall be determined with each source in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 mile, away from each source during the observation. For outdoor locations, the observer shall select a position where the sun is not directly in the observer's eyes. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. A certified opacity reader is not required for visible emissions observations.

4. Compliance Certification:

- (a) If visible emissions are not present during the observation, the RO may certify that the source is in compliance with the applicable opacity requirement in 30 TAC § 111.111(a)(8) and (a)(8)(A).
 - (b) However, if visible emissions are present during the observation, the permit holder shall either list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2) or conduct the appropriate opacity test specified in 30 TAC § 111.111(a)(8)(B) to determine if the source is in compliance with the opacity requirements. If an opacity test is performed and the source is determined to be in compliance, the RO may certify that the source is in compliance with the applicable opacity requirement. However, if an opacity test is performed and the source is determined to be out of compliance, the permit holder shall list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2). The opacity test must be performed by a certified opacity reader.
- E. Certification of opacity readers determining opacities under Method 9 (as outlined in 40 CFR Part 60, Appendix A) to comply with opacity monitoring requirements shall be accomplished by completing the Visible Emissions Evaluators Course, or approved agency equivalent, no more than 180 days before the opacity reading.
- F. For emission units with contributions from uncombined water, the permit holder shall comply with the requirements of 30 TAC § 111.111(b).
- G. Emission limits on nonagricultural processes, except for the steam generators specified in 30 TAC § 111.153, shall comply with the following requirements:
 - (i) Emissions of PM from any source may not exceed the allowable rates as required in 30 TAC § 111.151(a) (relating to Allowable Emissions Limits)
 - (ii) Sources with an effective stack height (h_e) less than the standard effective stack height (H_e), must reduce the allowable emission level by multiplying it by $[h_e/H_e]^2$ as required in 30 TAC § 111.151(b)
 - (iii) Effective stack height shall be calculated by the equation specified in 30 TAC § 111.151(c)
- H. Outdoor burning, as stated in 30 TAC § 111.201, shall not be authorized unless the following requirements are satisfied:
 - (i) Title 30 TAC § 111.205 (relating to Exception for Fire Training)

- (ii) Title 30 TAC § 111.207 (relating to Exception for Recreation, Ceremony, Cooking, and Warmth)
 - (iii) Title 30 TAC § 111.219 (relating to General Requirements for Allowable Outdoor Burning)
 - (iv) Title 30 TAC § 111.221 (relating to Responsibility for Consequences of Outdoor Burning)
- 4. For storage vessels maintaining working pressure as specified in 30 TAC Chapter 115, Subchapter B, Division 1: "Storage of Volatile Organic Compounds," the permit holder shall comply with the requirements of 30 TAC § 115.112(a)(1).
- 5. Permit holder shall comply with the following 30 TAC Chapter 115, Subchapter C requirements:
 - A. When filling stationary gasoline storage vessels (Stage I) for motor vehicle fuel dispensing facilities specified in 30 TAC Chapter 115, Subchapter C, the permit holder shall comply with the following requirements:
 - (i) Title 30 TAC § 115.221 (relating to Emission Specifications)
 - (ii) Title 30 TAC § 115.222 (relating to Control Requirements)
 - (iii) Title 30 TAC § 115.223 (relating to Alternate Control Requirements)
 - (iv) Title 30 TAC § 115.224(1) and (2) (relating to Inspection Requirements)
 - (v) Title 30 TAC § 115.225(1) - (4) (relating to Testing Requirements)
 - (vi) Title 30 TAC § 115.226 (relating to Recordkeeping Requirements)
- 6. The permit holder shall comply with the following requirements for units subject to any subpart of 40 CFR Part 60, unless otherwise stated in the applicable subpart:
 - A. Title 40 CFR § 60.7 (relating to Notification and Recordkeeping)
 - B. Title 40 CFR § 60.8 (relating to Performance Tests)
 - C. Title 40 CFR § 60.11 (relating to Compliance with Standards and Maintenance Requirements)
 - D. Title 40 CFR § 60.12 (relating to Circumvention)
 - E. Title 40 CFR § 60.13 (relating to Monitoring Requirements)
 - F. Title 40 CFR § 60.14 (relating to Modification)

- G. Title 40 CFR § 60.15 (relating to Reconstruction)
- H. Title 40 CFR § 60.19 (relating to General Notification and Reporting Requirements)
- 7. The permit holder shall comply with the requirements of 30 TAC Chapter 113, Subchapter C, § 113.100 for units subject to any subpart of 40 CFR Part 63, unless otherwise stated in the applicable subpart.
- 8. The permit holder shall comply with the following 40 CFR Part 63, Subpart X requirements to control fugitive dust emission sources (30 TAC Chapter 113, Subchapter C, § 113.290 incorporated by reference):
 - A. Title 40 CFR § 63.545(a) and (b) (relating to Standards for Fugitive Dust Sources), for standard operating procedure manual
 - B. Title 40 CFR § 63.545(c) (relating to Standards for Fugitive Dust Sources), for control requirements
 - C. Title 40 CFR § 63.545(d) (relating to Standards for Fugitive Dust Sources), for recordkeeping requirements
 - D. Title 40 CFR § 63.549(b) (relating to Notification Requirements)
- 9. The permit holder shall comply with certified registrations submitted to the TCEQ for purposes of establishing federally enforceable emission limits. A copy of the certified registration shall be maintained with the permit. Records sufficient to demonstrate compliance with the established limits shall be maintained. The certified registration and records demonstrating compliance shall be provided, on request, to representatives of the appropriate TCEQ regional office and any local air pollution control agency having jurisdiction over the site. The permit holder shall submit updated certified registrations when changes at the site require establishment of new emission limits. If changes result in emissions that do not remain below major source thresholds, the permit holder shall submit a revision application to codify the appropriate requirements in the permit.

New Source Review Authorization Requirements

- 10. Permit holder shall comply with the requirements of New Source Review authorizations issued or claimed by the permit holder for the permitted area, including permits, permits by rule, standard permits, flexible permits, special permits, permits for existing facilities including Voluntary Emissions Reduction Permits and Electric Generating Facility Permits issued under 30 TAC Chapter 116, Subchapter I, or special exemptions referenced in the New Source Review Authorization References attachment. These requirements:

- A. Are incorporated by reference into this permit as applicable requirements
 - B. Shall be located with this operating permit
 - C. Are not eligible for a permit shield
11. The permit holder shall comply with the general requirements of 30 TAC Chapter 106, Subchapter A or the general requirements, if any, in effect at the time of the claim of any PBR.
 12. The permit holder shall comply with the terms and conditions of the air addendum of the [Municipal Solid Waste], [Industrial Hazardous Waste] permits listed in the New Source Review Authorization Reference Attachment. Requirements other than those of the air addendum are not applicable to this operating permit.
 13. The permit holder shall comply with the following requirements of Air Quality Standard Permits:
 - A. Registration requirements listed in 30 TAC § 116.611
 - B. General Conditions listed in 30 TAC § 116.615

Compliance Requirements

14. The permit holder shall certify compliance with all permit terms and conditions using, at a minimum (but not limited to) the continuous or intermittent compliance method data from monitoring, recordkeeping, reporting, or testing required by the permit and any other credible evidence or information. The certification period may not exceed 12 months and the certification must be submitted within 30 days after the end of the period being certified.
15. Permit holder shall comply with the following 30 TAC Chapter 117 requirement:
 - A. The permit holder shall comply with the compliance schedules and submit written notification to the TCEQ Executive Director as required in 30 TAC Chapter 117, Subchapter H, Division 1:
 - (i) For sources in the Dallas-Fort Worth Nonattainment area, 30 TAC § 117.9010
 - (ii) For sources in the Dallas-Fort Worth Eight-Hour Nonattainment area, 30 TAC § 117.9030
 - B. The permit holder shall comply with the Initial Control Plan unit identification requirements in 30 TAC § 117.450(a) and (a)(1)

- C. The permit holder shall comply with the requirement in 30 TAC § 117.450(a)(2) for identification of exempt units in the Initial Control Plan
16. Use of Emission Credits to Comply with Applicable Requirements:
- A. Unless otherwise prohibited, the permit holder may use emission credits to comply with the following applicable requirements listed elsewhere in this permit:
 - (i) Title 30 TAC Chapter 115
 - (ii) Title 30 TAC Chapter 117
 - (iii) Offsets for 30 TAC Chapter 116
 - B. The permit holder shall comply with the following requirements in order to use the emission credits to comply with the applicable requirements:
 - (i) The permit holder must notify the TCEQ according to 30 TAC § 101.306(c)(2)
 - (ii) The emission credits to be used must meet all the geographic, timeliness, applicable pollutant type, and availability requirements listed in 30 TAC Chapter 101, Subchapter H, Division 1
 - (iii) The executive director has approved the use of the credit according to 30 TAC § 101.306(c)(2)
 - (iv) The permit holder keeps records of the use of credits towards compliance with the applicable requirements in accordance with 30 TAC § 101.302(g) and 30 TAC Chapter 122
17. Use of Discrete Emission Credits to Comply with Applicable Requirements:
- A. Unless otherwise prohibited, the permit holder may use discrete emission credits to comply with the following applicable requirements listed elsewhere in this permit:
 - (i) Title 30 TAC Chapter 115
 - (ii) Title 30 TAC Chapter 117
 - (iii) If applicable, offsets for Title 30 TAC Chapter 116
 - (iv) Temporarily exceed state NSR permit allowables

- B. The permit holder shall comply with the following requirements in order to use the credit to comply with the applicable requirements:
- (i) The permit holder must notify the TCEQ according to 30 TAC § 101.376(d)
 - (ii) The discrete emission credits to be used must meet all the geographic, timeliness, applicable pollutant type, and availability requirements listed in 30 TAC Chapter 101, Subchapter H, Division 4
 - (iii) The executive director has approved the use of the discrete emission credits according to 30 TAC § 101.376(d)(1)(A)
 - (iv) The permit holder keeps records of the use of credits towards compliance with the applicable requirements in accordance with 30 TAC § 101.372(h) and 30 TAC Chapter 122

Protection of Stratospheric Ozone

18. Permit holders at a site subject to Title VI of the FCAA Amendments shall meet the following requirements for protection of stratospheric ozone:
- A. Any on-site servicing, maintenance, and repair on refrigeration and nonmotor vehicle air-conditioning appliances using ozone-depleting refrigerants or non-exempt substitutes shall be conducted in accordance with 40 CFR Part 82, Subpart F. Permit holders shall ensure that repairs on or refrigerant removal from refrigeration and nonmotor vehicle air-conditioning appliances using ozone-depleting refrigerants are performed only by properly certified technicians using certified equipment. Records shall be maintained as required by 40 CFR Part 82, Subpart F.
 - B. Any on-site servicing, maintenance, and repair of fleet vehicle air conditioning using ozone-depleting refrigerants shall be conducted in accordance with 40 CFR Part 82, Subpart B. Permit holders shall ensure that repairs or refrigerant removal are performed only by properly certified technicians using certified equipment. Records shall be maintained as required by 40 CFR Part 82, Subpart B.
 - C. The permit holder shall comply with 40 CFR Part 82, Subpart A for controlling the production, transformation, destruction, export or import of a controlled (ozone-depleting) substance or product as specified in 40 CFR §§ 82.1 - 82.24 and the applicable Part 82 Appendices.
 - D. The permit holder shall comply with 40 CFR Part 82, Subpart A, § 82.13 related to Recordkeeping and Reporting Requirements for the production and consumption of ozone depleting substances.

Permit Location

19. The permit holder shall maintain a copy of this permit and records related to requirements listed in this permit on-site.

Permit Shield (30 TAC § 122.148)

20. A permit shield is granted for the emission units, groups, or processes specified in the attached "Permit Shield." Compliance with the conditions of the permit shall be deemed compliance with the specified potentially applicable requirements or specified potentially applicable state-only requirements listed in the attachment "Permit Shield." Permit shield provisions shall not be modified by the executive director until notification is provided to the permit holder. No later than 90 days after notification of a change in a determination made by the executive director, the permit holder shall apply for the appropriate permit revision to reflect the new determination. Provisional terms are not eligible for this permit shield. Any term or condition, under a permit shield, shall not be protected by the permit shield if it is replaced by a provisional term or condition or the basis of the term and condition changes.

ATTACHMENTS

Applicable Requirements Summary

Permit Shield

New Source Review Authorization References

Applicable Requirements Summary

| | |
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Note: A “none” entry may be noted for some emission sources in this permit’s “Applicable Requirements Summary” under the heading of “Monitoring and Testing Requirements” and/or “Recordkeeping Requirements” and/or “Reporting Requirements.” Such a notation indicates that there are no requirements for the indicated emission source as identified under the respective column heading(s) for the stated portion of the regulation when the emission source is operating under the conditions of the specified SOP Index Number. However, other relevant requirements pursuant to 30 TAC Chapter 122 including Recordkeeping Terms and Conditions (30 TAC § 122.144), Reporting Terms and Conditions (30 TAC § 122.145), and Compliance Certification Terms and Conditions (30 TAC § 122.146) continue to apply.

Unit Summary

| Unit/Group/Process ID No. | Unit Type | Group/Inclusive Units | SOP Index No. | Regulation | Requirement driver |
|---------------------------|---|---|---------------|---------------------------------------|-------------------------|
| BLAST | Miscellaneous Units | N/A | 63X-1 | 40 CFR Part 63, Subpart X | No changing attributes. |
| BLASTPFS | Miscellaneous Units | N/A | 63X-1 | 40 CFR Part 63, Subpart X | No changing attributes. |
| BLASTVENT | Emission Points/Stationary Vents/Process Vents | N/A | R5121 | 30 TAC Chapter 115, Vent Gas Controls | No changing attributes. |
| CRYSTLBLR | Boilers/Steam Generators/Steam Generating Units | N/A | R7400-1 | 30 TAC Chapter 117, Subchapter B | No changing attributes. |
| DROSSBIN | Miscellaneous Units | N/A | 63X-1 | 40 CFR Part 63, Subpart X | No changing attributes. |
| DRYTPICE | Miscellaneous Units | N/A | 63X-1 | 40 CFR Part 63, Subpart X | No changing attributes. |
| FDRYHOP | Miscellaneous Units | N/A | 63X-1 | 40 CFR Part 63, Subpart X | No changing attributes. |
| FEEDDRYER | Miscellaneous Units | N/A | 63X-1 | 40 CFR Part 63, Subpart X | No changing attributes. |
| GRPBREAKER | Miscellaneous Units | BREAKER, BREAKERFUG | 63X-1 | 40 CFR Part 63, Subpart X | No changing attributes. |
| GRPFURNFUG | Miscellaneous Units | BLASTFUG, REVERBFUG | 63X-1 | 40 CFR Part 63, Subpart X | No changing attributes. |
| GRPHANDFUG | Miscellaneous Units | COVRMSB44, MATLHNFUG, RMSBFUG47, SLAGHNDFUG | 63X-1 | 40 CFR Part 63, Subpart X | No changing attributes. |
| GRPKETTLE2 | Lead Smelting Attributes | KETTLE4, KETTLE5, KETTLE6, KETTLE7, KETTLEC, KETTLED, KETTLEE | 60L-1 | 40 CFR Part 60, Subpart L | No changing attributes. |

Unit Summary

| Unit/Group/Process ID No. | Unit Type | Group/Inclusive Units | SOP Index No. | Regulation | Requirement driver |
|---------------------------|--------------------------|---|---------------|----------------------------------|-------------------------|
| GRPKETTLE2 | Lead Smelting Attributes | KETTLE4, KETTLE5, KETTLE6, KETTLE7, KETTLEC, KETTLED, KETTLEE | 63X-1 | 40 CFR Part 63, Subpart X | No changing attributes. |
| GRPKETTLES | Lead Smelting Attributes | KETTLE2, KETTLE3, KETTLEA, KETTLEB, KETTLESA | 60L-1 | 40 CFR Part 60, Subpart L | No changing attributes. |
| GRPKETTLES | Miscellaneous Units | KETTLE2, KETTLE3, KETTLEA, KETTLEB, KETTLESA | 63X-1 | 40 CFR Part 63, Subpart X | No changing attributes. |
| GRPMELTCMB | Process Heaters/Furnaces | KETTLE2, KETTLE3, KETTLE4, KETTLE5, KETTLE6, KETTLE7, KETTLEA, KETTLEB, KETTLEC, KETTLED, KETTLEE, KETTLESA, REFCASTFUG | R7400-1 | 30 TAC Chapter 117, Subchapter B | No changing attributes. |
| GRPOXPRCMB | Process Heaters/Furnaces | MELTPOT1, MELTPOT2, MELTPOT3, REACTOR1, REACTOR2, REACTOR3, REACTOR4, REACTOR5, REACTOR6, TROUGH1C, TROUGH2C | R7400-1 | 30 TAC Chapter 117, Subchapter B | No changing attributes. |
| GRPRMSB | Miscellaneous Units | RAWMATBLDG, SHREDDER | 63X-1 | 40 CFR Part 63, Subpart X | No changing attributes. |
| GRPTRAFFIC | Miscellaneous Units | TRAFFIC41, TRAFFIC42, TRAFFIC43 | 63X-1 | 40 CFR Part 63, Subpart X | No changing attributes. |
| REFCASTFUG | Miscellaneous Units | N/A | 63X-1 | 40 CFR Part 63, Subpart X | No changing attributes. |
| REVERB | Miscellaneous Units | N/A | 63X-1 | 40 CFR Part 63, Subpart X | No changing attributes. |
| REVERBPFS | Miscellaneous Units | N/A | 63X-1 | 40 CFR Part 63, Subpart X | No changing attributes. |

Unit Summary

| Unit/Group/Process ID No. | Unit Type | Group/Inclusive Units | SOP Index No. | Regulation | Requirement driver |
|---------------------------|--|-----------------------|---------------|---------------------------------------|-------------------------|
| REVERBVENT | Emission Points/Stationary Vents/Process Vents | N/A | R5121 | 30 TAC Chapter 115, Vent Gas Controls | No changing attributes. |
| SUPPVENT | Emission Points/Stationary Vents/Process Vents | N/A | R5121 | 30 TAC Chapter 115, Vent Gas Controls | No changing attributes. |
| SUPPVENT | Miscellaneous Units | N/A | 63X-1 | 40 CFR Part 63, Subpart X | No changing attributes. |

Applicable Requirements Summary

| Unit/Group/Process | | SOP Index No. | Pollutant | Emission Limitation/Standard or Equipment Specification | | Textual Description (See Special Term and Condition 1.B.) | Monitoring And Testing Requirements | Recordkeeping Requirements | Reporting Requirements |
|--------------------|------|---------------|-----------|---|---|--|--|---|--|
| ID No. | Type | | | Name | Citation | | | | |
| BLAST | EU | 63X-1 | PB | 40 CFR Part 63, Subpart X | § 63.543(a) | No owner or operator of a secondary lead smelter shall discharge or cause to be discharged into the atmosphere from any existing, new, or reconstructed blast, reverberatory, rotary, or electric smelting furnace any gases that contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains of lead per dry standard cubic foot) | § 63.543(h) § 63.543(i) [G]§ 63.547(a) § 63.548(a) [G]§ 63.548(c) § 63.548(d) § 63.548(e) § 63.548(f) | § 63.550(a) § 63.550(a)(1) § 63.550(a)(5) | (30 TAC § 122.145) § 63.548(b) § 63.549(a) § 63.549(b) § 63.550(c)(1) § 63.550(c)(2) § 63.550(c)(4) |
| BLAST | EU | 63X-1 | THC | 40 CFR Part 63, Subpart X | § 63.543(c) § 63.543(c)(1) | Secondary lead smelter with a specified furnace shall not discharge into the atmosphere gases that contain hydrocarbons in excess 20 ppmv | § 63.543(f) [G]§ 63.547(b) [G]§ 63.547(c) § 63.548(j)(1) | § 63.550(a) § 63.550(a)(2) | § 63.549(a) § 63.550(b) § 63.550(c)(3)(i) |
| BLAST/PFS | EU | 63X-1 | PB | 40 CFR Part 63, Subpart X | § 63.544(c) § 63.544(a)(1) § 63.544(a)(3) § 63.544(b)(1) | Ventilation air from all enclosures hoods and total enclosures shall be conveyed to a control device. Gases discharged to the atmosphere from these control devices shall not contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains per dry standard cubic foot) | § 63.544(a) § 63.544(e) § 63.544(f) [G]§ 63.547(a) [G]§ 63.547(d) § 63.548(a) § 63.548(c) § 63.548(d) § 63.548(e) § 63.548(f) | § 63.550(a)(1) § 63.550(a)(5) | § 63.548(b) § 63.549(a) § 63.549(b) § 63.550(b) § 63.550(c)(1) § 63.550(c)(2) § 63.550(c)(4) |
| BLAST/VENT | EP | R5121 | VOC | 30 TAC Chapter 115, Vent Gas Controls | § 115.127(a)(2)(B) [G]§ 115.122(a)(4) § 115.127(a)(2) | A vent gas stream specified in § 115.121(a)(1) of this title with a concentration of VOC < 642 ppmv is exempt from § 115.121(a)(1). | [G]§ 115.125 § 115.126(2) | § 115.126 § 115.126(2) § 115.126(4) | None |
| CRYSTLBLR | EU | R7400-1 | NOX | 30 TAC Chapter 117, Subchapter B | § 117.400(1) § 117.410(b)(1)(C) [G] § 117.410(f) § 117.430(b)(1) | The permit holder shall comply with the applicable requirements of 30 TAC Chapter 117, Subchapter B | § 117.435(a)(1) § 117.435(a)(3) § 117.435(d) § 117.435(k)(2) § 117.435(k)(3) § 117.440(a)(1)(A) | § 117.445(a) § 117.445(f)(1) § 117.445(f)(8) [G] § 117.450 | § 117.435(b); § 117.435(f); § 117.445(b)(2); [G] § 117.445(c); § 117.450(b);(c); [G] § 117.454(a); § 117.454(c); § 117.456(1),(3) |

Applicable Requirements Summary

| Unit/Group/Process | | SOP Index No. | Pollutant | Emission Limitation/Standard or Equipment Specification | | Textual Description (See Special Term and Condition I.B.) | Monitoring And Testing Requirements | Recordkeeping Requirements | Reporting Requirements |
|--------------------|------|---------------|-----------|---|---|--|--|--|--|
| ID No. | Type | | | Name | Citation | | | | |
| CRYSTLBLR | EU | R7400-1 | CO | 30 TAC Chapter 117, Subchapter B | § 117.400(f); § 117.430(b)(1); § 117.410(d)(1)(B); § 117.410(d)(3) [G] § 117.410(f) | The permit holder shall comply with the applicable requirements of 30 TAC Chapter 117, Subchapter B | § 117.435(a)(1), (3); § 117.435(d); § 117.440(a)(1)(A) | § 117.445(a); § 117.445(f)(1); [G] § 117.450 | (30 TAC § 122.145) § 117.435(b); § 117.435(f); § 117.445(b)(2); [G] § 117.445(c); § 117.450(b), (c); [G] § 117.454(a); § 117.454(e); § 117.456(1), (3) |
| DROSSBIN | EU | 63X-1 | PM | 40 CFR Part 63, Subpart X | § 63.545(a) § 63.545(a)(5) § 63.545(c)(5) § 63.545(e) | Secondary lead smelters shall prepare and operate according to a standard operating procedures manual to control fugitive dust emission sources listed in: §§63.545(a)(1)-(5) | § 63.545(a)(5) | § 63.545(d) § 63.550(a)(4) | § 63.545(b) § 63.549(a) § 63.549(b) § 63.550(b) § 63.550(c)(6) |
| DRYTPICE | EU | 63X-1 | PB | 40 CFR Part 63, Subpart X | § 63.544(a)(5) § 63.544(c) | Each owner or operator of a secondary lead smelter shall control the process fugitive emission sources listed in §§63.544(a)(1)-(6) by complying with §§63.544(b) and (c). §§63.544(a)(1)-(6) | § 63.544(e) [G]§ 63.544(e) § 63.544(f) § 63.547(a) § 63.547(e) § 63.548(a) § 63.548(c) § 63.548(d) § 63.548(e) § 63.548(f) | § 63.550(a) § 63.550(a)(1) § 63.550(a)(5) | § 63.548(b) § 63.549(a) § 63.549(b) § 63.550(b) § 63.550(c)(1) § 63.550(c)(2) § 63.550(c)(4) |
| FDRYHOP | EU | 63X-1 | PB | 40 CFR Part 63, Subpart X | § 63.544(c) § 63.544(a)(1) | Air from all enclosure hoods and total enclosures shall convey to a control device. Gases discharged from these devices shall not contain lead compounds in excess of 2.0 mg/dscm (.00087 gr/dscf). | § 63.544(e) § 63.544(f) [G]§ 63.547(a) § 63.547(e) § 63.548(a) § 63.548(c) § 63.548(d) § 63.548(e) [G]§ 63.548(e) § 63.548(f) | § 63.550(a) § 63.550(a)(1) § 63.550(a)(5) | § 63.548(b) § 63.549(a) § 63.549(b) § 63.550(b) § 63.550(c)(1) § 63.550(c)(2) § 63.550(c)(4) |
| FEEDDRYER | EU | 63X-1 | PB | 40 CFR Part 63, Subpart X | § 63.544(d) § 63.548(h) | All dryer and agglomerating furnace emission vents shall be ventilated to a control device that shall not discharge any gases that contain lead compounds in excess of 2.0 mg/dscm (.00087 gr/dscf). | § 63.544(f) § 63.547(a) § 63.548(a) § 63.548(c) § 63.548(d) § 63.548(e) § 63.548(f) | § 63.550(a) § 63.550(a)(1) § 63.550(a)(5) | § 63.548(b) § 63.549(a) § 63.549(b) § 63.550(b) § 63.550(c)(1) § 63.550(c)(2) § 63.550(c)(4) |

Applicable Requirements Summary

| Unit/Group/Process | | SOP Index No. | Pollutant | Emission Limitation/Standard or Equipment Specification | | Textual Description (See Special Term and Condition 1.B.) | Monitoring And Testing Requirements | Recordkeeping Requirements | Reporting Requirements |
|--------------------|------|---------------|--------------|---|--|---|---|---|--|
| ID No. | Type | | | Name | Citation | | | | |
| GRPBREAKER | EU | 63X-1 | PB | 40 CFR Part 63, Subpart X | § 63.545(a) § 63.545(a)(2) § 63.545(c)(2) | Secondary lead smelters shall prepare and operate according to a standard operating procedures manual to control fugitive dust emission sources listed in: §§63.545(a)(1)-(5) | § 63.545(a)(2) | § 63.545 § 63.545(d) § 63.550(a)(4) | (30 TAC § 122.145) § 63.545(b) § 63.549(a) § 63.549(b) § 63.550(b) § 63.550(c)(6) |
| GRPFURNFUG | EU | 63X-1 | PB | 40 CFR Part 63, Subpart X | § 63.545(a)(3) § 63.545(c)(3) | Secondary lead smelters shall prepare and operate according to a standard operating procedures manual to control fugitive dust emission sources listed in: §§63.545(a)(1)-(5) | § 63.545(a)(3) | § 63.545(d) § 63.550(a)(4) | § 63.545(b) § 63.549(a) § 63.549(b) § 63.550(b) § 63.550(c)(6) |
| GRPHANDFUG | EU | 63X-1 | PB | 40 CFR Part 63, Subpart X | § 63.545(a) § 63.545(a)(5) § 63.545(c)(5) | Secondary lead smelters shall prepare and operate according to a standard operating procedures manual to control fugitive dust emission sources listed in: §§63.545(a)(1)-(5) | § 63.545(a)(5) | § 63.545(d) § 63.550(a)(4) | § 63.545(b) § 63.549(a) § 63.549(b) § 63.550(b) § 63.550(c)(6) |
| GRPKETTLE2 | EU | 60L-1 | PM (OPACITY) | 40 CFR Part 60, Subpart L | § 60.122(b) | Shall not discharge or cause the discharge into the atmosphere from any pot furnace any gases which exhibit greater than 10% opacity or greater. | § 60.123(a) § 60.123(b)(2) | None | None |
| GRPKETTLE2 | EU | 63X-1 | PB | 40 CFR Part 63, Subpart X | § 63.544(c) § 60.122(b) § 63.544(a)(4) § 63.544(b)(2) | Ventilation air from all enclosures hoods and total enclosures shall be conveyed to a control device. Gases discharged to the atmosphere from these control devices shall not contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains per dry standard cubic foot). | § 63.544(c) § 63.544(f) § 63.547(a) § 63.547(d) § 63.548(a) § 63.548(c) § 63.548(d) § 63.548(e) § 63.548(f) | § 63.550(a) § 63.550(a)(1) § 63.550(a)(5) | § 63.548(b) § 63.549(a) § 63.549(b) § 63.550(b) § 63.550(c)(1) § 63.550(c)(2) § 63.550(c)(4) |
| GRPKETTLES | EU | 60L-1 | PM (OPACITY) | 40 CFR Part 60, Subpart L | § 60.122(b) | Shall not discharge or cause the discharge into the atmosphere from any pot furnace any gases which exhibit greater than 10% opacity or greater. | § 60.123(a) § 60.123(b)(2) | None | None |

Applicable Requirements Summary

| Unit/Group/Process | | SOP Index No. | Pollutant | Emission Limitation/Standard or Equipment Specification | | Textual Description (See Special Term and Condition I.B.) | Monitoring And Testing Requirements | Recordkeeping Requirements | Reporting Requirements |
|--------------------|------|---------------|-----------|---|---|--|--|---|--|
| ID No. | Type | | | Name | Citation | | | | |
| GRPKETTLES | EU | 63X-1 | PB | 40 CFR Part 63, Subpart X | § 63.544(c) § 63.544(a)(4) § 63.544(b)(2) | Air from all enclosure hoods and total enclosures shall convey to a control device. Gases discharged from these devices shall not contain lead compounds in excess of 2.0 mg/dscm (0.00087 gr/dscf). | § 63.544(e) § 63.544(f) § 63.547(a) § 63.547(d) § 63.548(a) § 63.548(c) § 63.548(d) § 63.548(e) § 63.548(f) | § 63.550(a) § 63.550(a)(1) § 63.550(a)(5) | (30 TAC § 122.145) § 63.548(b) § 63.549(a) § 63.549(b) § 63.550(b) § 63.550(c)(1) § 63.550(c)(2) § 63.550(c)(4) |
| GRPRMSB | EU | 63X-1 | PB | 40 CFR Part 63, Subpart X | § 63.545(a) § 63.545(a)(5) § 63.545(c)(5) | Secondary lead smelters shall prepare and operate according to a standard operating procedures manual to control fugitive dust emission sources listed in: §§63.545(a)(1)-(5). | § 63.545(a)(5) § 63.547(a) § 63.547(c) § 63.548(a) § 63.548(c)(1) § 63.548(c)(2) § 63.548(c)(3) § 63.548(c)(4) § 63.548(c)(5) § 63.548(c)(6) § 63.548(c)(7) § 63.548(c)(8) § 63.548(d) | § 63.545(d) § 63.550(a)(4) § 63.550(a)(5) | § 63.545(b) § 63.549(a) § 63.549(b) § 63.550(b) § 63.550(c)(4) § 63.550(c)(6) |
| GRPTRAFFIC | EU | 63X-1 | PB | 40 CFR Part 63, Subpart X | § 63.545(a) § 63.545(a)(1) § 63.545(c)(1) | Secondary lead smelters shall prepare and operate according to a standard operating procedures manual to control fugitive dust emission sources listed in: §§63.545(a)(1)-(5). | § 63.545(a)(1) | § 63.545(d) § 63.550(a)(4) | § 63.545(b) § 63.549(a) § 63.549(b) § 63.550(b) § 63.550(c)(6) |
| REFCASTFUG | EU | 63X-1 | PB | 40 CFR Part 63, Subpart X | § 63.545(a)(4) § 63.545(c)(4) | Secondary lead smelters shall prepare and operate according to a standard operating procedures manual to control fugitive dust emission sources listed in: §§63.545(a)(1)-(5). | § 63.545(a)(4) | § 63.545(d) § 63.550(a)(4) | § 63.545(b) § 63.549(a) § 63.549(b) § 63.550(b) § 63.550(c)(6) |
| REVERB | EU | 63X-1 | PB | 40 CFR Part 63, Subpart X | § 63.543(a) | No secondary lead smelter shall discharge into the atmosphere from any specified furnace any gases that contain lead compounds in excess of 2.0 mg/dscm (0.00087 gr/dscf) | § 63.543(b) § 63.543(f) [GJ]§ 63.547(a) § 63.548(a) [GJ]§ 63.548(c) § 63.548(d) [GJ]§ 63.548(e) [GJ]§ 63.548(f) | § 63.550(a) § 63.550(a)(1) § 63.550(a)(5) | § 63.548(b) § 63.549(a) § 63.549(b) § 63.550(b) § 63.550(c)(1) § 63.550(c)(2) § 63.550(c)(4) |

Applicable Requirements Summary

| Unit/Group/Process | | SOP Index No. | Pollutant | Emission Limitation/Standard or Equipment Specification | | Textual Description (See Special Term and Condition I.B.) | Monitoring And Testing Requirements | Recordkeeping Requirements (30 TAC § 122.144) | Reporting Requirements (30 TAC § 122.145) |
|--------------------|------|---------------|-----------|---|---|---|---|---|--|
| ID No. | Type | | | Name | Citation | | | | |
| REVERB | EU | 63X-1 | THC | 40 CFR Part 63, Subpart X | § 63.543(c) | Secondary lead smelter with a specified furnace shall not discharge into the atmosphere gases that contain hydrocarbons in excess 20 ppmv | § 63.543(f) [G]§ 63.547(b) [G]§ 63.547(c) | § 63.550(a) § 63.550(a)(2) | § 63.549(a) § 63.550(b) |
| REVERBPFS | EU | 63X-1 | PB | 40 CFR Part 63, Subpart X | § 63.544(c) § 63.544(a)(1) § 63.544(a)(2) § 63.544(a)(3) § 63.544(b)(1) | Air from all enclosure hoods and total enclosures shall convey to a control device. Gases discharged from these devices shall not contain lead compounds in excess of 2.0 mg/dscm (.00087 gr/dscf). | [G]§ 63.544(c) § 63.544(f) [G]§ 63.547(a) [G]§ 63.547(c) [G]§ 63.547(d) [G]§ 63.547(e) [G]§ 63.547(f) § 63.548(a) § 63.548(d) | § 63.550(a) § 63.550(a)(1) § 63.550(a)(5) | § 63.548(b) § 63.549(a) § 63.549(b) § 63.550(b) § 63.550(c)(1) § 63.550(c)(2) § 63.550(c)(4) |
| REVERBVENT | EP | R5121 | VOC | 30 TAC Chapter 115, Vent Gas Controls | § 115.127(a)(2)(B) [G]§ 115.122(a)(4) § 115.127(a)(2) | A vent gas stream specified in § 115.121(a)(1) of this title with a concentration of VOC < 612 ppmv is exempt from § 115.121(a)(1). | [G]§ 115.125 § 115.126(2) | § 115.126 § 115.126(2) § 115.126(4) | None |
| SUPPVENT | EP | R5121 | VOC | 30 TAC Chapter 115, Vent Gas Controls | § 115.127(a)(2)(B) [G]§ 115.122(a)(4) § 115.127(a)(2) | A vent gas stream specified in § 115.121(a)(1) of this title with a concentration of VOC < 612 ppmv is exempt from § 115.121(a)(1). | [G]§ 115.125 § 115.126(2) | § 115.126 § 115.126(2) § 115.126(4) | None |
| SUPPVENT | EU | 63X-1 | PB | 40 CFR Part 63, Subpart X | § 63.544(c) § 63.544(a)(1) § 63.544(a)(3) § 63.544(b)(1) | Air from all enclosure hoods and total enclosures shall convey to a control device. Gases discharged from these devices shall not contain lead compounds in excess of 2.0 mg/dscm (.00087 gr/dscf). | § 63.544(e) § 63.544(f) § 63.547(a) § 63.547(d) § 63.548(a) § 63.548(c) § 63.548(d) § 63.548(e) § 63.548(f) | § 63.550(a) § 63.550(a)(1) § 63.550(a)(5) | § 63.548(b) § 63.549(a) § 63.549(b) § 63.550(b) § 63.550(c)(1) § 63.550(c)(2) § 63.550(c)(4) |
| SUPPVENT | EU | 63X-1 | THC | 40 CFR Part 63, Subpart X | § 63.543(g) | If specified furnaces discharge fugitive and process emissions separately, the blast furnace process fugitives hydrocarbon emission rate shall not exceed 20 parts per million by volume. | § 63.547(a) § 63.547(b) | § 63.550(a) | § 63.550(b) |

Permit Shield

Permit Shield27

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

| Unit/Group/Process | | Regulation | Basis of Determination |
|--------------------|---|--|--|
| ID No. | Group/Inclusive Units | | |
| AFTERBURNR | N/A | 30 TAC Chapter 117, Subchapter B | Incinerator maximum rated capacity is less than 40 MMBTU/hr. Rated capacity is 10 MMBTU/hr. |
| BLAST | N/A | 30 TAC Chapter 117, Subchapter B | The industrial furnace was regulated as an existing facility by 40 CFR 266, Subpart H, as was in effect June 9, 1993. |
| DIESELTK1 | N/A | 30 TAC Chapter 115, Storage of VOCs | True Vapor Pressure less than 1.0 psia. |
| DIESELTK1 | N/A | 40 CFR Part 60, Subpart Ka | Capacity of the vessel less than 40,000 gal. |
| GASTANK1 | N/A | 30 TAC Chapter 115, Loading and Unloading of VOC | Motor vehicle fuel dispensing facilities. Motor vehicle fuel dispensing facilities, as defined in § 101.1 of this title, are exempt from the requirements of this division |
| GRPDYCOMB | FEEDDRYER, FLASHDRYER, PLASTDRYER | 30 TAC Chapter 117, Subchapter B | The FEEDDRYER, PLASTDRYER, and FLASHDRYER are not defined as one of the listed applicable sources. |
| GRPMELTCMB | KETTLE2, KETTLE3, KETTLE4, KETTLE5, KETTLE6, KETTLE7, KETTLEA, KETTLEB, KETTLEC, KETTLED, KETTLEE, KETTLESA, REFCASTFUG | 30 TAC Chapter 117, Subchapter B | The industrial furnace was regulated as an existing facility by 40 CFR 266, Subpart H, as was in effect June 9, 1993. |
| GRPOXPRCMB | MELTPOT1, MELTPOT2, MELTPOT3, REACTOR1, REACTOR2, REACTOR3, REACTOR4, REACTOR5, REACTOR6, TROUGH1C, TROUGH2C | 30 TAC Chapter 117, Subchapter B | The maximum rated capacity of each process heater is less than 5 MMBTU/hr. |

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

| Unit/Group/Process | | Regulation | Basis of Determination |
|--------------------|--|----------------------------------|---|
| ID No. | Group/Inclusive Units | | |
| GRPWHTRS | WATERHTR1, WATERHTR2, WATERHTR3, WATERHTR4 | 30 TAC Chapter 117, Subchapter B | The maximum rated capacity of each "boiler" is less than 2 MMBTU/hr. |
| REVERB | N/A | 30 TAC Chapter 117, Subchapter B | The industrial furnace was regulated as an existing facility by 40 CFR 266, Subpart H, as was in effect June 9, 1993. |
| SLAGCRUSH | N/A | 40 CFR Part 63, Subpart X | Definition of "Materials Storage and Handling Area" in 40 CFR 63.542 does not include areas used exclusively for storage of blast furnace slag, and blast slag processing is not regulated by the MACT X standard. |
| SMELTCLEAN | N/A | 40 CFR Part 63, Subpart X | The SMELTCLEAN emission unit does not fall within the scope of the MACT X "measures that will be put in place to control fugitive dust emissions within the secondary lead smelter" and is a control device operated voluntarily. |

New Source Review Authorization References

| | |
|---|-----------|
| New Source Review Authorization References | 30 |
| New Source Review Authorization References by Emission Unit..... | 31 |

New Source Review Authorization References

The New Source Review authorizations listed in the table below are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

| PSD Permits | NA Permits |
|---|------------------------------|
| PSD Permit No.: | NA Permit No.: |
| PSD Permit No.: | NA Permit No.: |
| Title 30 TAC Chapter 116 Permits, Special Permits, and Other Authorizations (Other Than Permits By Rule, PSD Permits, or NA Permits) for the Application Area. | |
| Authorization No.: 1147A | Authorization No.: 3048A |
| Authorization No.: | Authorization No.: |
| Permits By Rule (30 TAC Chapter 106) for the Application Area | |
| Number: 059 | Version No./Date: 05/05/1976 |
| Number: 106 | Version No./Date: 05/04/1994 |
| Number: 106 | Version No./Date: 04/05/1995 |
| Number: 118 | Version No./Date: 05/04/1994 |
| Number: 118 | Version No./Date: 04/05/1995 |
| Number: 118 | Version No./Date: 10/04/1995 |
| Number: 118 | Version No./Date: 06/07/1996 |
| Number: 106.183 | Version No./Date: 06/18/1997 |
| Number: 106.261 | Version No./Date: 11/01/2003 |
| Number: 106.262 | Version No./Date: 12/24/1998 |
| Number: 106.262 | Version No./Date: 11/01/2003 |
| Number: 106.454 | Version No./Date: 03/14/1997 |
| Number: 106.473 | Version No./Date: 09/04/2000 |
| Municipal Solid Waste and Industrial Hazardous Waste Permits With an Air Addendum | |
| Permit No.: | Permit No.: |

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

| Unit/Group/Process ID No. | Emission Unit Name /Description | New Source Review Authorization |
|---------------------------|---|---------------------------------|
| AFTERBURNR | BLAST FURNACE AFTERBURNER | 1147A |
| BLAST | BLAST FURNACE | 1147A, R-1147A |
| BLASTFUG | BLAST FURNACE SMELTING FUGITIVES | R-1147A |
| BLASTPFS | BLAST FURNACE PROCESS FUGITIVE SOURCES | R-1147A |
| BLASTVENT | BLAST FURNACE VENT TO AFTERBURNER | R-1147A |
| BREAKER | BATTERY BREAKER | R-1147A |
| BREAKERFUG | BATTERY BREAKER | R-1147A |
| COVRMSB44 | COVERED RAW MATERIAL STORAGE BUILDING FUGITIVES | R-1147A |
| CRYSTLBLR | CRYSTALLIZER BOILER | 106.183/06/18/1997 |
| DEGREASER1 | COLD SOLVENT DEGREASER #1 | 106.454/03/14/1997 |
| DEGREASER2 | COLD SOLVENT DEGREASER #2 | 106.454/03/14/1997 |
| DIESELTK1 | DIESEL TANK NO.1 | SE-059/05/05/1976 |
| DROSSBIN | VENTILATED DROSS BINS | R-1147A |
| DRYTPICE | DRYER TRANSITION PIECE | R-1147A |
| FDRYHOP | FEED DRYER LOADING HOPPER | R-1147A |
| FEEDDRYER | FEED DRYER | 1147A, R-1147A |
| FLASHDRYER | CRYSTALLIZER DRYER | 106.183/06/18/1997 |
| GASTANK1 | GASOLINE TANK 1 | 106.473/09/04/2000 |
| KETTLE2 | KETTLE 2 | 1147A, R-1147A |
| KETTLE3 | KETTLE 3 | 1147A, R-1147A |
| KETTLE4 | KETTLE 4 | 1147A, R-1147A |
| KETTLE5 | KETTLE 5 | 1147A, R-1147A |
| KETTLE6 | KETTLE 6 | 1147A, R-1147A |
| KETTLE7 | KETTLE 7 | 1147A, R-1147A |
| KETTLEA | KETTLE A | 1147A, R-1147A |
| KETTLEB | KETTLE B | 1147A, R-1147A |
| KETTLEC | KETTLE C | 1147A, R-1147A |
| KETTLED | KETTLE D | 1147A, R-1147A |

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

| Unit/Group/Process ID No. | Emission Unit Name /Description | New Source Review Authorization |
|---------------------------|--|---------------------------------|
| KETTLEE | KETTLE E | 1147A, R-1147A |
| KETTLESA | KETTLE A | 1147A |
| KETTLESA | KETTLE SA | 1147A, R-1147A |
| MATLHNFUG | MATERIAL HANDLING FUGITIVE | R-1147A |
| MELTPOT1 | OXIDE MELTING POT 1 | 3048A |
| MELTPOT2 | OXIDE MELTING POT 2 | 3048A |
| MELTPOT3 | OXIDE MELTING POT 3 | 3048A |
| PLASTDRYER | BATTERY BREAKER PLASTIC DRYER | 1147A |
| RAWMATBLDG | RAW MATERIAL STORAGE BUILDING | R-1147A |
| REACTOR1 | OXIDE REACTOR 1 | 3048A |
| REACTOR2 | OXIDE REACTOR 2 | 3048A |
| REACTOR3 | OXIDE REACTOR 3 | 3048A |
| REACTOR4 | OXIDE REACTOR 4 | 3048A |
| REACTOR5 | OXIDE REACTOR 5 | 3048A |
| REACTOR6 | OXIDE REACTOR 6 | 3048A |
| REFCASTFUG | REFINING/CASTING FUGITIVES | 1147A, R-1147A |
| REVERBFUG | REVER FURNACE SMELTING FUGITIVES | R-1147A |
| REVERBPFS | REVERBERATORY FURNACE PROCESS FUGITIVE SOURCES | R-1147A |
| REVERB | REVERBERATORY FURNACE | 1147A, R-1147A |
| REVERBVENT | REVERBERATORY FURNACE VENT | R-1147A |
| RMSBFUG47 | RAW MATL STORAGE BUILDING FUGITIVE | R-1147A |
| SHREDDER | FEED SHREDDER | R-1147A |
| SLAGCRUSH | SLAG CRUSHING | 1147A |
| SLAGHNDFUG | SLAG HANDLING FUGITIVE | R-1147A |
| SMELTCLEAN | SMELTCLEAN | 1147A |
| SUPPVENT | SUPPLEMENTAL VENTILATION SYSTEM | R-1147A |
| TRAFFIC41 | FUGITIVE FROM WEST YARD | R-1147A |
| TRAFFIC42 | TRAFFIC FUGITIVES FROM SOUTH DRIVEWAY | R-1147A |

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

| Unit/Group/Process ID No. | Emission Unit Name /Description | New Source Review Authorization |
|---------------------------|--------------------------------------|---------------------------------|
| TRAFFIC43 | TRAFFIC FUGITIVES FROM EAST DRIVEWAY | R-11147A |
| TROUGH1C | OXIDE TROUGH HEATER 1 | 3048A |
| TROUGH2C | OXIDE TROUGH HEATER 2 | 3048A |
| WATERHTR1 | WATER HEATER | 106.183/06/18/1997 |
| WATERHTR2 | WATER HEATER | 106.183/06/18/1997 |
| WATERHTR3 | WATER HEATER | 106.183/06/18/1997 |
| WATERHTR4 | WATER HEATER | 106.183/06/18/1997 |

APPENDIX A

Acronym List.....35

Acronym List

The following abbreviations or acronyms may be used in this permit:

| | |
|------------------------|---|
| ACFM | actual cubic feet per minute |
| AMOC | alternate means of control |
| ARP | Acid Rain Program |
| ASTM | American Society of Testing and Materials |
| B/PA | Beaumont/Port Arthur (nonattainment area) |
| CAM | Compliance Assurance Monitoring |
| CD | control device |
| COMS | continuous opacity monitoring system |
| CVS | closed-vent system |
| D/FW | Dallas/Fort Worth (nonattainment area) |
| DR | Designated Representative |
| EIP | El Paso (nonattainment area) |
| EP | emission point |
| EPA | U.S. Environmental Protection Agency |
| EU | emission unit |
| FCAA Amendments | Federal Clean Air Act Amendments |
| FOP | federal operating permit |
| GF | grandfathered |
| gr/100 scf | grains per 100 standard cubic feet |
| HAP | hazardous air pollutant |
| H/G | Houston/Galveston (nonattainment area) |
| H ₂ S | hydrogen sulfide |
| ID No. | identification number |
| lb/hr | pound(s) per hour |
| MMBtu/hr | Million British thermal units per hour |
| MRRT | monitoring, recordkeeping, reporting, and testing |
| NA | nonattainment |
| N/A | not applicable |
| NADB | National Allowance Data Base |
| NO _x | nitrogen oxides |
| NSPS | New Source Performance Standard (40 CFR Part 60) |
| NSR | New Source Review |
| ORIS | Office of Regulatory Information Systems |
| Pb | lead |
| PBR | Permit By Rule |
| PM | particulate matter |
| ppmv | parts per million by volume |
| PSD | prevention of significant deterioration |
| RO | Responsible Official |
| SO ₂ | sulfur dioxide |
| TSP | total suspended particulate |
| TVP | true vapor pressure |
| U.S.C. | United States Code |
| VOC | Volatile organic compound |

Appendix CAA-G

Copy of Exide New Source Review Authorization 1147A

Kathleen Hartnett White, *Chairman*
Larry R. Soward, *Commissioner*
Glenn Shankle, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

June 8, 2006

Mr. Larry Eagan
Director, South Central Region
Exide Technologies, Inc.
P.O. Box 250
Frisco, Texas 75034

Re: Permit Renewal
Permit Number: 1147A
Battery Recycling Plant
Frisco, Collin County
Regulated Entity Number: RN100218643
Customer Reference Number: CN600129787
Account Number: CP-0029-G

Dear Mr. Eagan:

This is in response to your application, Form PI-1R (General Application for Air Permit Renewals), concerning the proposed renewal of Permit Number 1147A. We have determined that your application for the above-referenced renewal is technically complete as of February 9, 2006.

As indicated in Title 30 Texas Administrative Code § 116.314(a), and based on our review, your permit is hereby renewed. Enclosed is a permit for your facility. Also enclosed are new special conditions and a maximum allowable emission rates table. We appreciate your careful review of the special conditions of the permit and assuring that all requirements are consistently met. This permit will be in effect for ten years from the date of approval (Commission's final decision). If this permit is appealed and the permittee does not commence any action authorized by this permit during judicial review, the term will not begin until judicial review is concluded.

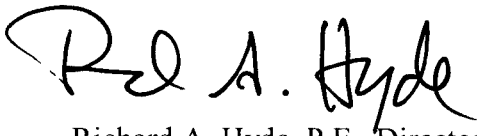
Thank you for your cooperation in sending us the information necessary to evaluate your operations and for your commitment to air pollution control. If you need further information or have any questions, please contact Mr. Dois Webb at (512) 239-1575 or write to the Texas Commission on Environmental Quality, Office of Permitting, Remediation, and Registration, Air Permits Division (MC-163), P.O. Box 13087, Austin, Texas 78711-3087.

Mr. Larry Eagan
Page 2
June 8, 2006

Re: Permit Number: 1147A

This action is authorized on behalf of the TCEQ Executive Director.

Sincerely,

A handwritten signature in black ink that reads "Richard A. Hyde". The signature is written in a cursive, flowing style.

Richard A. Hyde, P.E., Director
Air Permits Division
Office of Permitting, Remediation, and Registration
Texas Commission on Environmental Quality

RH/DW/bob

Enclosures

cc: Mr. Carlos Liscano, Assistant Plant Manager, Exide Technologies, Inc., Frisco
Air Section Manager, Region 4 - Fort Worth

Project Number: 114689



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AIR QUALITY PERMIT

A PERMIT IS HEREBY ISSUED TO

Exide Technologies, Inc.

AUTHORIZING THE CONTINUED OPERATION OF

Battery Recycling Plant

LOCATED AT Frisco, Collin County, Texas

LATITUDE 33° 08' 30" LONGITUDE 096° 49' 53"



1. **Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the Texas Commission on Environmental Quality (commission) Executive Director to amend this permit in that regard and such amendment is approved. [Title 30 Texas Administrative Code § 116.116 (30 TAC § 116.116)]
2. **Voiding of Permit.** A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the TCAA, including protection of the public's health and physical property; and (b)(1) the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10% of the estimated total cost of the project up to a maximum of \$5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC § 116.120(a), (b) and (c)]
3. **Construction Progress.** Start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC § 116.115(b)(2)(A)]
4. **Start-up Notification.** The appropriate air program regional office shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. The permit holder shall provide a separate notification for the commencement of operations for each unit of phased construction, which may involve a series of units commencing operations at different times. Prior to operation of the facilities authorized by the permit, the permit holder shall identify to the Office of Permitting, Remediation, and Registration the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program). [30 TAC § 116.115(b)(2)(B)]
5. **Sampling Requirements.** If sampling is required, the permit holder shall contact the commission's Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the regional representatives of the commission. The permit holder is also responsible for providing sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC § 116.115(b)(2)(C)]
6. **Equivalency of Methods.** The permit holder must demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC § 116.115(b)(2)(D)]
7. **Recordkeeping.** The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and operating hours; keep all required records in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application; make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction; comply with any additional recordkeeping requirements specified in special conditions attached to the permit; and retain information in the file for at least two years following the date that the information or data is obtained. [30 TAC § 116.115(b)(2)(E)]
8. **Maximum Allowable Emission Rates.** The total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled "Emission Sources--Maximum Allowable Emission Rates." [30 TAC § 116.115(b)(2)(F)]
9. **Maintenance of Emission Control.** The permitted facilities shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. The permit holder shall provide notification for upsets and maintenance in accordance with § § 101.201, 101.211, and 101.221 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; Scheduled Maintenance, Startup and Shutdown Reporting and Recordkeeping Requirements; and Operational Requirements). [30 TAC § 116.115(b)(2)(G)]
10. **Compliance with Rules.** Acceptance of a permit by an applicant constitutes an acknowledgment and agreement that the permit holder will comply with all rules, regulations, and orders of the commission issued in conformity with the TCAA and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or permit condition are applicable, the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the permit. [30 TAC § 116.115(b)(2)(H)]
11. This permit may be appealed pursuant to 30 TAC § 50.139.
12. This permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC § 116.110(e)]
13. There may be additional special conditions attached to a permit upon issuance or modification of the permit. Such conditions in a permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC § 116.115(c)]
14. **Emissions** from this facility must not cause or contribute to a condition of "air pollution" as defined in TCAA § 382.003(3) or violate TCAA § 382.085, as codified in the Texas Health and Safety Code. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.

PERMIT 1147A

Date: June 8, 2006

Glenn Shankle
Executive Director
Texas Commission on Environmental Quality

SPECIAL CONDITIONS

Permit Number 1147A

EMISSION STANDARDS

1. This permit covers only those sources of emissions listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," and these sources are restricted to the emission limits and other conditions specified in that attached table.

FEDERAL APPLICABILITY

2. This facility shall comply with all requirements of Environmental Protection Agency Regulations on Standards of Performance for New Stationary Sources promulgated for Secondary Lead Smelters in 40 CFR 60, Subpart L and National Emission Standards for Hazardous Air Pollutants for Secondary Lead Smelters in 40 CFR Part 63, Subpart X.

Emissions from this facility shall not cause or contribute to an exceedance of the National Ambient Air Quality Standard for lead at any of the following air monitoring sites:

Monitor Nos. 480850009, 480850003, and 480850006 operated by Texas Natural Resource Conservation Commission (TCEQ). (6/06)

FUEL SPECIFICATIONS

3. Natural gas used in the smelting/refining process shall be pipeline-quality, sweet natural gas which is currently defined by industry practices as containing no more than 0.25 grain of hydrogen sulfide (H₂S) and 5 grains of total sulfur per 100 dry standard cubic feet (dscf). To the extent the industry definition changes, the Texas Commission on Environmental Quality (TCEQ) Executive Director shall modify this permit to make it consistent with such definition provided, however, that in no event shall the definition ever provide limits in excess of 1.5 grains of H₂S and 30 grains of total sulphur per 100 dscf.

Fuel used in the blast furnace processes shall be high temperature coke with a maximum (by weight) ash content of 12 percent and a maximum (by weight) sulfur content of 1.3 percent. Materials that appear in 40 CFR 266, Appendix XI, may be used in the reverberatory or blast furnace consistent with the requirements of 40 CFR 266.100(c)(3). Plastic curtains shall not be added to the reverberatory or blast furnace feed stock.

OPACITY/VISIBLE EMISSION LIMITATIONS

4. No visible emissions that result from the permitted activities shall leave the plant property boundary. If this condition is violated, further controls shall be installed and/or implemented as required to limit visible emissions.

SPECIAL CONDITIONS

Permit Number 1147A

Page 2

5. Except for those periods described in 30 TAC 101.201 and 202, the stack sources listed on the table entitled "Emission Sources - Maximum Allowable Emission Rates" shall not exceed 5 percent opacity averaged over a six-minute period when adjusted for uncombined water vapor. (6/06)
6. Opacity of fugitive emissions from material handling activities (defined for purposes of this permit as the storage, loading and unloading, transportation, lead pouring, or conveyance of any material, fuel, intermediate product, finished product, by-product or waste product) such as moving materials (either mechanically or with a front-end loader) shall be minimized using partial covers, watering, and/or good work practice operating procedures. In addition, material handling activities shall not cause any visible emissions to leave the plant property boundary.

OPERATIONAL LIMITATIONS, WORK PRACTICES, AND PLANT DESIGN

7. Fabric filter baghouses or cartridge filter dust collectors, properly installed and in good working order, shall control particulate matter (PM) process fugitives emissions from the blast and reverberatory furnaces, and particulate matter emissions from the slag treatment building and the material storage building. The foregoing particulate emissions will be exhausted at Emission Point Nos. (EPNs) 18, 22, 37, 39, and 45. Particulate emissions from EPNs 18, 22, 39, and 45 shall not exceed 0.01 grains/dscf. Particulate emissions from EPNs 21 and 37 shall not exceed 0.015 grains/dscf.
8. The Wet Scrubbers associated with EPNs 38 and 46 shall be properly installed and maintained in good working order. The PM emissions from EPNs 38 and 46 shall not exceed 0.015 grains/dscf.
9. Reverberatory furnace and blast furnace operations shall be limited to the following
 - a. The lead scrap feed rate to the reverberatory furnace shall not exceed 20 tons per hour.
 - b. The lead scrap feed rate to the blast furnace shall not exceed 12 tons per hour.
 - c. The combined feed rate to the Reverberatory furnace and blast furnace shall not exceed a combined feed rate maximum total of 228,000 tons per year of feed comprised of recovered battery lead, acceptable lead bearing scrap as defined by the Resource Conservation and Recovery Act Part B Permit No. HW-50206 and Title 40 Code of Federal Regulations Part 266 (40 CFR Part 266) including Appendix XI, limestone, iron/steel scrap, coke and coke fines, sand, small amounts of reductant material, and furnace adjustment material.

SPECIAL CONDITIONS

Permit Number 1147A

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- d. The combined finished lead production from both the Reverberatory furnace and blast furnace shall not exceed 400 tons per day and 72,000 tons per year. **(6/06)**
- 10. The supplemental baghouse shall capture and control the blast furnace's fugitive emissions (including, but not limited to, the upper charging area) during normal operations and as long as this control system's baghouse is operational during furnace upset conditions. The system shall be installed and operated such that:
 - A. There shall be no visible emissions from the building that houses the blast furnace. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA Test Method (TM) 22 or equivalent. **(6/06)**
 - B. The hooding for each fugitive emission source shall maintain a negative airflow around the source (i.e., airflow, as indicated by anemometer or smoke indicator shall be inward toward the system's hooding such that all air around the source is pulled into the system hoods).
 - C. This system shall effectively capture not less than 80 percent of the blast furnace fugitive emissions as determined by Special Condition No. 10A. The captured blast furnace emissions shall ultimately be exhausted from EPN 37. **(6/06)**
- 11. The blast furnace chamber shall operate at a negative pressure and the exhaust gases shall be vented to a direct-fired (natural gas) afterburner equipped with a fully modulating 10 MMBTU/hour burner to oxidize volatile organic compounds and designed for a residence time of 1.0 second. The average minimum operating temperature of the afterburner chamber shall be 1500°F averaged over a three hour period as measured near the midpoint of the afterburner chamber. The exit gases from the afterburner shall be cooled in a series of heat exchangers to a temperature consistent with the bag manufacturer's recommendations at the intake of the blast furnace baghouse. The blast furnace baghouse shall be vented to a wet spray scrubber that is common control for both the blast furnace and the reverberatory furnace with Stack EPN 38. **(6/06)**
- 12. A system shall be installed for the reverberatory furnace to capture and control the furnace's fugitive emissions (including, but not limited to, the slag and metal tap areas and the charging area) during normal operations and as long as this control system's baghouse is operational during furnace upset conditions. The system shall be installed and operated such that:
 - A. There shall be no visible emissions from the building that houses the reverberatory furnace.

SPECIAL CONDITIONS

Permit Number 1147A

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- B. The hooding for each fugitive emission point shall maintain a negative airflow around the emissions point (i.e., airflow, as indicated by anemometer, smoke bomb, or smoke generator, shall be inward toward the system's hooding such that all air around the emissions point is pulled into the system hoods).
13. The reverberatory furnace shall operate with sufficient negative draft to remove smoke and fumes but still allow retention of as much heat as possible over the hearth and the smoke. The reverberatory furnace and blast furnace fumes shall be vented to their respective baghouses and through a wet scrubber that exhausts at EPN 38. Hoods that control fugitive emissions shall be not less than 80 percent effective in capturing reverberatory fugitive emissions, as determined by no visible emissions from the building that houses the Reverberatory furnace. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA Test Method (TM) 22 or equivalent. The hoods shall be vented to either (1) the fugitive baghouse which also controls the fugitives from the blast furnace and exhausts to Stack EPN 37 or (2) the soft lead baghouse. (6/06)
 14. The motors of the blowers and fans used in the capture and control systems specified for the blast and reverberatory furnaces (Special Condition Nos. 10 and 12 above) shall include a control system to automatically restart the motors following power interruptions of less than five seconds.
 15. The hard lead, soft lead, and specialty alloy refining kettles and portable dressing pots shall be fitted with hoods that shall maintain a negative airflow into the system hoods. There shall be no visible emissions from the building that houses the refining kettles, and these controls shall be operated at all times these units are in operation.
 16. The raw material storage building shall be equipped with doors on the east and west sides of the building which will be kept normally closed except when necessary. This building shall be kept under negative pressure at all times and vented to a dust collector. During feed shredder downtime, pallets and associated material may be broken or otherwise appropriately sized and fed to the blast furnace. (6/06)
 17. The battery breaker concrete pad shall be sloped downward toward the bins in order to minimize material runoff onto plant roads. The battery breaker operation emissions shall be controlled by a wet scrubber.
 18. All wet scrubbers listed in this permit shall be maintained and operated as recommended by the manufacturer but the maintenance and operation requirements shall not be less than as follows:

SPECIAL CONDITIONS

Permit Number 1147A

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- A. The scrubbing solution for removal of sulfur dioxide (SO_2) in the metallurgical scrubber shall be maintained at or above a minimum pH set-point of 5.7 to be continuously monitored and adjusted as necessary.
 - B. The spray nozzles and general condition of the scrubber shall be visually inspected a minimum of once per quarter for the metallurgical scrubber and feed drier scrubber and once per week for the battery breaker scrubber, and any malfunction shall be corrected during this maintenance check. Spray nozzles not functioning with a full spray shall be replaced and not less than 85 percent of the spray nozzles shall be functioning with a full spray at all times.
 - C. There shall be a scheduled system for sludge removal consistent with the operational requirements of the scrubber.
19. Material transfer routes between battery breaking bins, raw material storage bins, reverberatory furnace charge bins, blast furnace charge bins, charge hoppers, charge bucket, and slag fixation building plus all acid sludge and slag transfer routes shall be paved with concrete smooth enough to assure effective vacuum sweeping and shall be swept a minimum of once daily. (See attached map marked Figure 1 and dated May 12, 2006) **(6/06)**
20. This condition applies to storage and transport of lead containing furnace raw material, such as battery plate and paste material, of lead powder, flue dust, lead oxide powder, collected bag filter dust, and other similar materials. This condition does not apply to storage and transport of whole, unbroken batteries or to clean lead ingots, sheets, or tubes or to other similar non-powdery materials.
- A. Outside storage of this material is limited to the following:
 - (1) Damp battery breaking material in the battery breaking bins and blast furnace charge bins.
 - (2) Reverberatory/Blast slag in the blast furnace slag bins and/or raw material storage building, except during final cooling of reverb/blast slag pots. **(6/06)**
 - (3) Covered or enclosed transport containers or vehicles.
 - (4) Sealed barrels, sealed drums, or other sealed containers except during inspection and transport.
 - B. There shall be no liquid leaks or material spills from any vehicles, barrels, drums, or any container listed in 20A (3) and (4) above, outside the plant containment area. Any spills shall be cleaned up as soon as possible.

SPECIAL CONDITIONS

Permit Number 1147A

Page 6

- C. There shall be no emissions from any railcar loading or unloading of any materials at this facility.
 - D. The transport of this material into the plant in over-the-road vehicles shall be as follows:
 - (1) All such vehicles shall transport only sealed or covered containers; or
 - (2) The cargo compartments of said vehicles shall be covered or enclosed.
 - E. Broken battery material and scrap lead materials for the blast furnace charge shall be handled as follows:
 - (1) There shall be no visible outdoor fugitive emissions of this material above the roofline of the blast furnace storage bins and the refining building during storage, transport, or furnace charging.
 - (2) Material for the reverberatory furnace shall be stored in the raw materials storage building.
 - (3) Material stored in the battery breaker bins or blast furnace bins or transported to and from these bins shall be kept damp at all times. Material in the blast furnace bins shall be dampened to minimize fugitive emissions.
 - (4) If, due to extended non-working periods, there is insufficient material in the battery breaker bins for the blast furnace charge, then damp material may be taken from the raw material storage building. This material shall be dampened with sufficient water to prevent visible fugitive emissions during transfer and charging.
 - F. Any spill of this material shall be cleaned up immediately. There shall be no visible emissions during the cleanup process.
21. The wheels of each over-the-road vehicle leaving the material storage areas shall be washed to remove residues.
22. All in-plant roads and in-plant vehicle routes (including the material transfer routes) as shown by the attached map marked Figure 1 and dated May 12, 2006 shall be swept a minimum of once a day using wet sweepers, vacuum sweepers, or by dampening the area prior to sweeping. No dry sweeping shall be allowed. Further, these roads and routes shall be scraped and washed as necessary to permit effective sweeping and prevent buildup of lead containing material. There shall be no visible emissions leaving the plant boundary from these roads or routes. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA Test Method (TM) 22 or equivalent **(6/06)**

SPECIAL CONDITIONS

Permit Number 1147A

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23. The floors in the areas of the blast and reverberatory furnaces shall be cleaned as necessary to prevent buildup of lead containing material. There shall be no visible emissions from the refining building during this process.
24. Collection, storage, and transport of collected material from bag filters and flues shall be accomplished using an enclosed or covered system.
25. No emission source shall be operated unless all associated emission control systems are in operation and in good working order.
26. General use roads, as described on the attached map marked Figure 1 and dated May 12, 2006, shall be paved and cleaned as necessary to control the emission of dust to the minimum level possible under existing conditions. All other roads and traffic areas, as described on the map, shall be oiled or sprinkled with water and/or chemicals, as necessary, to control the emission of dust to the minimum level possible under existing conditions. (6/06)
27. Any particulate and flue dust collected from baghouses or ductwork shall be collected and transferred in enclosed or covered conveyors or covered containers to the reverberatory or blast furnace. The method of disposal of material collected by air pollution abatement equipment which is not returned to the process shall be approved by the Executive Director of TCEQ, if necessary.
28. The holder of this permit shall demonstrate that all hooding, duct, and collection systems are effective in minimizing fugitive emissions to as low a level as practicable with respect to the sources which they are controlling.

CONTINUOUS DEMONSTRATION OF COMPLIANCE

29. The TCEQ Executive Director may require at a later date that additional property line monitors are required for lead and/or SO₂. The TCEQ Executive Director may also at any time require stack testing, analyses, and other testing by an independent laboratory at the company's expense. If testing is required, the TCEQ Fort Worth Regional Office shall be notified a minimum of 45 days in advance of any tests and a pre-test meeting shall be held with the TCEQ to establish test parameters and dates. All required test data, reports, etc., shall be forwarded within 45 days of stack test and/or other tests to the TCEQ Fort Worth Regional Office with copy maintained on-site which must be made available upon request to any agent or representative of the TCEQ or local air control program having jurisdiction.

RECORDKEEPING

30. The company shall maintain on-site the following records for a rolling 24-month period:

SPECIAL CONDITIONS

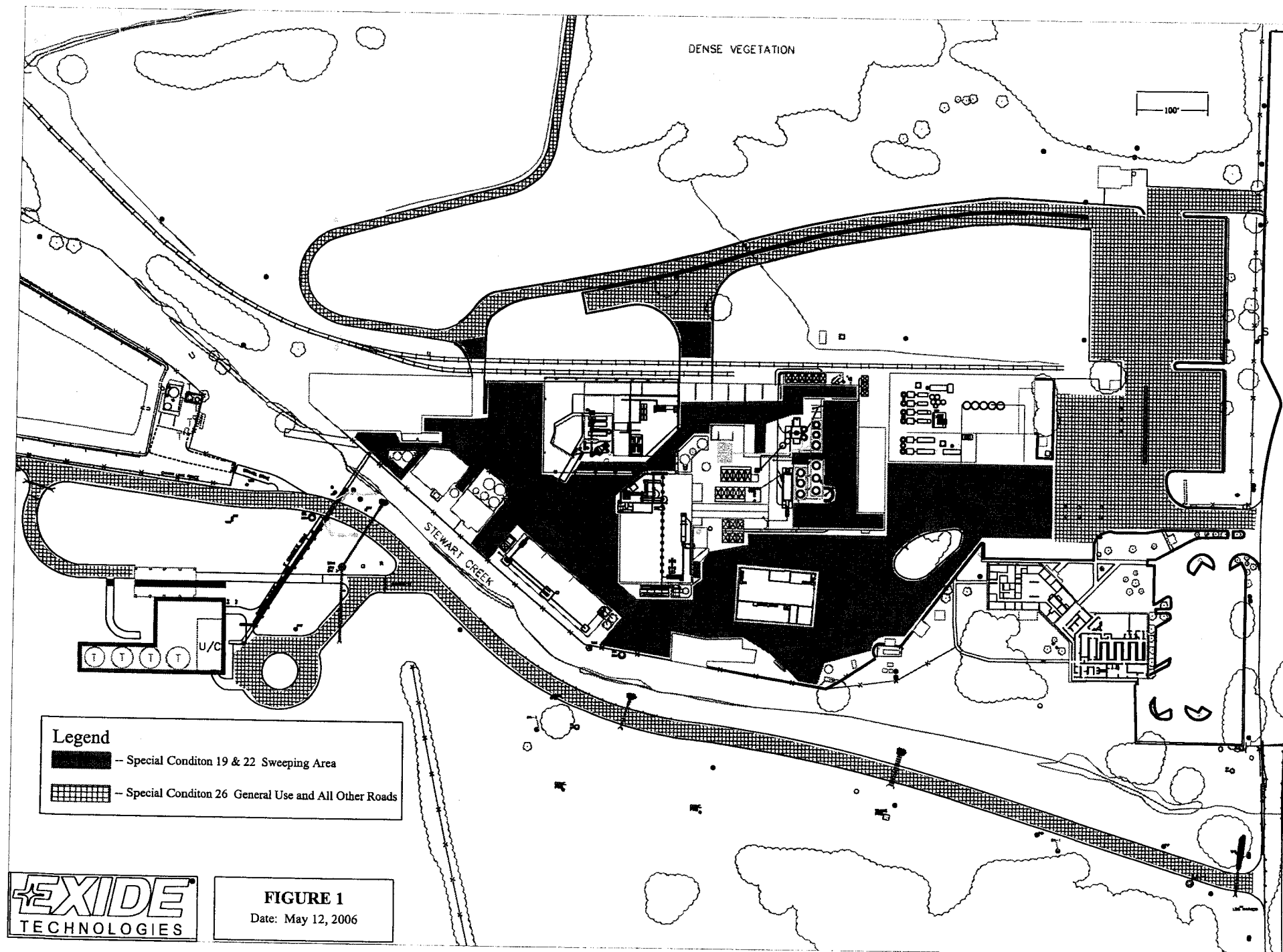
Permit Number 1147A

Page 8

- A. The number of batteries received daily and summed monthly and annually.
- B. The type and daily quantity (tons) of scrap and/or lead contaminated material received for recycling of the lead. This daily tonnage shall be summed monthly and annually.
- C. The type and daily quantity (tons) of all raw materials feed to the feeder dryer, reverberatory furnace, and blast furnace. This daily tonnage shall be summed monthly and annually.
- D. The separate and designated daily melt lead production from each furnace. This daily tonnage shall be summed monthly and annually.
- E. The total quantity of finished soft and hard lead produced from the refining kettles shall be recorded and summed monthly and annually.
- F. The daily quantity molten lead recycled back into the reverberatory or blast furnaces for reprocessing shall be summed monthly and annually. If the recycled molten throughput exceeds 20,000 tons per year, the TCEQ Fort Worth Regional Office shall be notified.
- G. The hourly record of the blast furnace afterburner operating temperature.
- H. Any scheduled or unscheduled maintenance on any abatement equipment including (but not limited to) baghouses, scrubbers, pumps, piping, duct, hoods, sweeper, and water sprinkler vehicle system.

These and other records shall be made immediately available upon request of a TCEQ representative or any local air control program having jurisdiction.

Dated June 8, 2006



EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit Number 1147A

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

AIR CONTAMINANTS DATA

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates * | |
|---------------------------|--|--------------------------------|------------------|-------|
| | | | lb/hr | TPY |
| 18 | Hard Lead Ventilation (5) Baghouse Stack | PM | 0.98 | 3.38 |
| | | PM ₁₀ | 0.98 | 3.38 |
| | | Pb | 0.12 | 0.29 |
| | | NO _x | 11.28 | 0.60 |
| | | SO ₂ | 0.04 | 0.17 |
| | | CO | 8.26 | 4.26 |
| | | VOC | 1.65 | 4.85 |
| | | Trace Compounds | 0.01 | 0.01 |
| 21 | Soft Lead Refining (5) and Feed Dryer Baghouse Stack | PM | 1.58 | 5.99 |
| | | PM ₁₀ | 1.58 | 5.99 |
| | | SO ₂ | 5.33 | 12.49 |
| | | NO _x | 11.92 | 9.33 |
| | | CO | 26.44 | 64.14 |
| | | Pb | 0.25 | 0.73 |
| | | VOC | 15.39 | 48.23 |
| | | HCl | 0.18 | 0.74 |
| | | H ₂ SO ₄ | 0.27 | 1.17 |
| | | Trace Compounds | 0.01 | 0.01 |
| 22 | Specialty Alloy (5) Baghouse Stack | PM | 1.28 | 4.51 |
| | | PM ₁₀ | 1.28 | 4.51 |
| | | Pb | 0.08 | 0.08 |
| | | NO _x | 11.03 | 0.58 |
| | | SO ₂ | 0.42 | 1.00 |
| | | CO | 8.08 | 5.00 |
| | | VOC | 1.62 | 4.75 |
| | | Trace Metals | 0.04 | 0.10 |
| 23 | Refining Building Vacuum Stack | PM | 0.21 | 0.56 |
| | | PM ₁₀ | 0.21 | 0.56 |
| | | Pb | 0.03 | 0.11 |

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates * | |
|---------------------------|--|--------------------------------|------------------|---------|
| | | | lb/hr | TPY |
| 37 | Reverberatory/Blast (5) Furnaces Fugitives Baghouse Stack | PM | 8.21 | 30.49 |
| | | PM ₁₀ | 8.21 | 30.49 |
| | | Pb | 0.16 | 0.39 |
| | | NO _x | 0.48 | 2.08 |
| | | SO ₂ | 21.68 | 68.31 |
| | | CO | 8.75 | 28.32 |
| | | VOC | 15.16 | 45.81 |
| | | HCl | 0.21 | 0.92 |
| | | H ₂ SO ₄ | 2.82 | 12.34 |
| | | SiO ₂ | 0.02 | 0.03 |
| | | Trace Metals | 0.01 | 0.04 |
| 38 | Reverberatory/Blast (5) Furnaces Metallurgical Scrubber Stack | PM | 4.63 | 19.12 |
| | | PM ₁₀ | 4.63 | 19.12 |
| | | Pb | 0.29 | 0.89 |
| | | NO _x | 14.60 | 59.53 |
| | | SO ₂ | 445.59 | 1199.51 |
| | | CO | 298.58 | 1190.35 |
| | | VOC | 7.61 | 33.32 |
| | | Cd | 0.02 | 0.05 |
| | | SiO ₂ | 0.09 | 0.41 |
| | | HCl | 0.74 | 3.23 |
| | | H ₂ SO ₄ | 4.96 | 21.74 |
| | | Trace Metals | 0.04 | 0.10 |
| 45 | Raw Material Storage/Shredder Baghouse Stack | PM | 2.85 | 10.57 |
| | | PM ₁₀ | 2.85 | 10.57 |
| | | Pb | 0.35 | 1.10 |
| 48 | Battery Breaker Scrubber Stack | PM | 2.45 | 4.68 |
| | | PM ₁₀ | 2.45 | 4.68 |
| | | Pb | 0.06 | 0.13 |
| | | H ₂ SO ₄ | 0.06 | 0.14 |
| 48FUG | Battery Breaker Scrubber | H ₂ SO ₄ | 0.05 | 0.22 |

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates * | |
|---------------------------|-----------------------------------|-----------------------------|------------------|-------|
| | | | lb/hr | TPY |
| 51 | Sodium Bicarbonate Filter Vent | PM | 0.17 | 0.75 |
| | | PM ₁₀ | 0.17 | 0.75 |
| 54 | Soft Lead Kettle Heating Stack | PM | 0.07 | 0.32 |
| | | PM ₁₀ | 0.07 | 0.32 |
| | | VOC | 0.03 | 0.14 |
| | | NO _x | 0.60 | 2.63 |
| | | CO | 0.50 | 2.21 |
| | | SO ₂ | <0.01 | 0.02 |
| 55 | Hard Lead Kettle Heating Stack | PM | 0.07 | 0.32 |
| | | PM ₁₀ | 0.07 | 0.32 |
| | | VOC | 0.03 | 0.14 |
| | | NO _x | 0.60 | 2.63 |
| | | CO | 0.50 | 2.21 |
| | | SO ₂ | <0.01 | 0.02 |
| 44 | Raw Material Storage (4) | PM | 1.43 | 5.72 |
| | | PM ₁₀ | 0.72 | 2.86 |
| | | Pb | 0.03 | 0.11 |
| 10 and 35 | Furnace Fugitives (4) | PM | 1.83 | 8.00 |
| | | PM ₁₀ | 1.83 | 8.00 |
| | | Pb | 0.27 | 1.20 |
| | | Cd | 0.01 | 0.04 |
| | | Trace Metals | <0.01 | <0.04 |
| 36 | Refining/Casting (4) | PM | 0.03 | 0.10 |
| | | PM ₁₀ | 0.03 | 0.10 |
| | | Pb | <0.01 | <0.04 |
| | | Trace Metals | <0.01 | <0.01 |
| 52 | Slag Handling (4) | PM | 0.07 | 0.31 |
| | | PM ₁₀ | 0.07 | 0.31 |
| | | Pb | 0.01 | 0.05 |
| | | Trace Metals | <0.01 | <0.01 |

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates * | |
|---------------------------|--------------------------------------|-----------------------------|------------------|------|
| | | | lb/hr | TPY |
| 41, 42, and 43 | Vehicle Traffic (4) | PM | -- | 0.63 |
| | | PM ₁₀ | -- | 0.31 |
| | | Pb | -- | 0.31 |
| 53 | Material Handling (4) | PM | 4.51 | 1.38 |
| | | PM ₁₀ | 0.45 | 0.14 |
| | | Pb | 0.32 | 0.10 |
| 39 | Slag Fixation Baghouse Stack | PM | 1.71 | 3.12 |
| | | PM ₁₀ | 1.71 | 3.12 |
| | | Pb | 0.12 | 0.11 |
| | | Al | 0.05 | 0.10 |
| 49 | Reagent Silo No.1 Baghouse Stack | PM | 0.36 | 0.38 |
| | | PM ₁₀ | 0.36 | 0.38 |
| 50 | Reagent Silo No. 2 Baghouse Stack | PM | 0.36 | 0.38 |
| | | PM ₁₀ | 0.36 | 0.38 |

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.

(2) Specific point source name. For fugitive sources use area name or fugitive source name.

(3) PM - particulate matter, suspended in the atmosphere, including PM₁₀
 PM₁₀ - particulate matter equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no particulate matter greater than 10 microns is emitted.

Pb - lead and lead compounds as lead

NO_x - total oxides of nitrogen

SO₂ - sulfur dioxide

CO - carbon monoxide

VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1

HCl - hydrochloric acid mist/fumes

H₂SO₄ - sulfuric acid mist/fumes

SiO₂ - silica

Cd - cadmium and cadmium compounds as cadmium

Al - aluminum

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

(4) Fugitive emissions are an estimate only.

(5) Trace compounds and metals are addressed in the permit file.

- * Emission rates are based on and the facilities are limited by the following maximum operating schedule and maximum production rates:

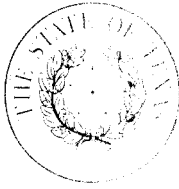
24 Hrs/day 7 Days/week 52 Weeks/year or 8,760 Hrs/year

Dated June 8, 2006

Appendix CAA-H

Copy of Exide New Source Review Authorization 3048A

Kathleen Hartnett White, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
Larry R. Soward, *Commissioner*
Glenn Shankle, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

June 8, 2006

Mr. Larry Eagan
Director, South Central Region
Exide Technologies, Inc.
P.O. Box 250
Frisco, Texas 75034-0250

Re: Permit Renewal
Permit Number: 3048A
Oxide Facility
Frisco, Collin County
Regulated Entity Number: RN100218643
Customer Reference Number: CN600129787
Account Number: CP-0029-G

Dear Mr. Eagan:

This is in response to your application, Form PI-1R (General Application for Air Permit Renewals), concerning the proposed renewal of Permit Number 3048A. We have determined that your application for the above-referenced renewal is technically complete as of February 9, 2006.

As indicated in Title 30 Texas Administrative Code § 116.314(a), and based on our review, your permit is hereby renewed. Enclosed is a permit for your facility. Also enclosed are new special conditions and a maximum allowable emission rates table. We appreciate your careful review of the special conditions of the permit and assuring that all requirements are consistently met. This permit will be in effect for 10 years from the date of approval (Commission's final decision). If this permit is appealed and the permittee does not commence any action authorized by this permit during judicial review, the term will not begin until judicial review is concluded.

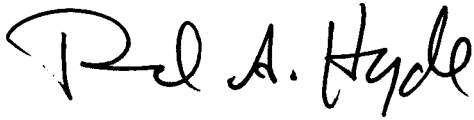
Thank you for your cooperation in sending us the information necessary to evaluate your operations and for your commitment to air pollution control. If you need further information or have any questions, please contact Mr. Dois Webb at (512) 239-1575 or write to the Texas Commission on Environmental Quality, Office of Permitting, Remediation, and Registration, Air Permits Division (MC-163), P.O. Box 13087, Austin, Texas 78711-3087.

Mr. Larry Eagan
Page 2
June 8, 2006

Re: Permit Number: 3048A

This action is authorized on behalf of the TCEQ Executive Director.

Sincerely,

A handwritten signature in black ink, reading "Richard A. Hyde". The signature is written in a cursive, flowing style with a large initial "R".

Richard A. Hyde, P.E., Director
Air Permits Division
Office of Permitting, Remediation, and Registration
Texas Commission on Environmental Quality

RAH/DW/kj

Enclosures

cc: Air Section Manager, Region 4 - Fort Worth

Project Number: 106570



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AIR QUALITY PERMIT

A PERMIT IS HEREBY ISSUED TO

Exide Technologies, Inc.

AUTHORIZING THE CONTINUED OPERATION OF

Oxide Facility

LOCATED AT Frisco, Collin County, Texas

LATITUDE 33° 08' 30" LONGITUDE 096° 49' 53"



1. **Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the Texas Commission on Environmental Quality (commission) Executive Director to amend this permit in that regard and such amendment is approved. [Title 30 Texas Administrative Code § 116.116 (30 TAC § 116.116)]
2. **Voiding of Permit.** A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the TCAA, including protection of the public's health and physical property; and (b)(1) the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10% of the estimated total cost of the project up to a maximum of \$5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC § 116.120(a), (b) and (c)]
3. **Construction Progress.** Start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC § 116.115(b)(2)(A)]
4. **Start-up Notification.** The appropriate air program regional office shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. The permit holder shall provide a separate notification for the commencement of operations for each unit of phased construction, which may involve a series of units commencing operations at different times. Prior to operation of the facilities authorized by the permit, the permit holder shall identify to the Office of Permitting, Remediation, and Registration the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program). [30 TAC § 116.115(b)(2)(B)]
5. **Sampling Requirements.** If sampling is required, the permit holder shall contact the commission's Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the regional representatives of the commission. The permit holder is also responsible for providing sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC § 116.115(b)(2)(C)]
6. **Equivalency of Methods.** The permit holder must demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC § 116.115(b)(2)(D)]
7. **Recordkeeping.** The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and operating hours; keep all required records in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application; make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction; comply with any additional recordkeeping requirements specified in special conditions attached to the permit; and retain information in the file for at least two years following the date that the information or data is obtained. [30 TAC § 116.115(b)(2)(E)]
8. **Maximum Allowable Emission Rates.** The total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled "Emission Sources--Maximum Allowable Emission Rates." [30 TAC § 116.115(b)(2)(F)]
9. **Maintenance of Emission Control.** The permitted facilities shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. The permit holder shall provide notification for upsets and maintenance in accordance with §§ 101.201, 101.211, and 101.221 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; Scheduled Maintenance, Startup and Shutdown Reporting and Recordkeeping Requirements; and Operational Requirements). [30 TAC § 116.115(b)(2)(G)]
10. **Compliance with Rules.** Acceptance of a permit by an applicant constitutes an acknowledgment and agreement that the permit holder will comply with all rules, regulations, and orders of the commission issued in conformity with the TCAA and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or permit condition are applicable, the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the permit. [30 TAC § 116.115(b)(2)(H)]
11. This permit may be appealed pursuant to 30 TAC § 50.139.
12. This permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC § 116.110(c)]
13. There may be additional special conditions attached to a permit upon issuance or modification of the permit. Such conditions in a permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC § 116.115(c)]
14. **Emissions** from this facility must not cause or contribute to a condition of "air pollution" as defined in TCAA § 382.003(3) or violate TCAA § 382.085, as codified in the Texas Health and Safety Code. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.

PERMIT 3048A

Date: June 8, 2006

Glenn Shankle
Executive Director
Texas Commission on Environmental Quality

SPECIAL CONDITIONS

Permit Number 3048A

EMISSION STANDARDS AND FUEL SPECIFICATIONS

1. This permit covers only those sources of emissions listed in the attached table entitled "Emission Sources-Maximum Allowable Emission Rates," and those sources are limited to the emission rates and other conditions specified in the attached table. **(06/06)**
2. Emissions from this facility shall not cause or contribute to an exceedance of the National Ambient Air Quality Standard for lead at any of the following air monitoring sites:

Monitor Nos. 480850009, 480850003, and 480850006 operated by Texas Commission on Environmental Quality (TCEQ). **(06/06)**
3. Fuel for the melting pots, oxide reactors, and trough heaters shall be limited to pipeline sweet natural gas containing no more than 5 grains total sulfur and 0.25 grains hydrogen sulfide per 100 dry standard cubic feet. **(06/06)**

OPACITY/VISIBLE EMISSION LIMITATIONS

4. Except for those periods described in TCEQ 30 Texas Administrative Code §§ 101.201 and 101.211 (30 TAC §§ 101.201 and 101.211), the stack sources listed on the table entitled "Emission Sources Maximum Allowable Emission Rates" shall not exceed 5 percent opacity averaged over a six-minute period when adjusted for uncombined water vapor as determined by EPA TM 9. **(06/06)**
5. No visible emissions that result from the permitted activities shall leave the plant property boundary. If this condition is violated, further controls shall be installed and/or implemented as required to limit visible emissions. Visible emissions shall be evaluated by a standard of no visible emissions exceeding 30 seconds in duration during any six minute period as determined by EPA TM 22. **(06/06)**

OPERATIONAL LIMITATIONS, WORK PRACTICES, AND PLANT DESIGN

6. Lead oxide production is limited to a maximum hourly production of 2,300 pounds of lead oxide per reactor and a maximum annual production of 58,300 tons of lead oxide. Additionally, facility operations are limited to 8,400 hours per year. **(06/06)**
7. All lead oxide spills shall be cleaned up immediately. Cleanup of these spills shall be accomplished with no visible emissions outside the oxide plant building.

SPECIAL CONDITIONS

Permit Number 3048A

Page 2

8. An adequate number of filter replacement bags shall be kept on the site at all times. Bags weighing nine ounce/yard² or more shall be used in all baghouses.
9. Storage and transport of the collected material from all baghouses, fabric filters, and cyclones shall be accomplished using a covered system. Prior to processing in the furnace, used bag filters shall be stored inside an enclosed container.
10. Enclosed conveyors shall be used to transport lead oxide through the plant. Emissions at all drop points shall be controlled by exhaust fans pulling air to baghouses or cartridge filter dust collectors. The conveyor covers are considered abatement equipment and shall be kept in good repair. Conveyor covers with holes larger than 1/4-inch in diameter or missing sections of covers shall not be considered in good repair.
11. The holder of this permit shall keep all air pollution control equipment in good repair and operating as represented in the permit application and as required in these conditions. For this permit, the air pollution control equipment consists of the baghouses, the fabric filters, and the conveyor system. If the holder of this permit or TCEQ should determine that any air pollution control equipment is not meeting the requirements of the first sentence of this special condition, the holder of the permit shall immediately cease operations at the facilities that are controlled by such air pollution control equipment.
12. The floor in the lead oxide production building shall be paved with concrete and cleaned as necessary to prevent lead emissions leaving the building. There shall be no visible emissions from the oxide plant building during the cleanup process.

DETERMINATION OF COMPLIANCE

13. The TCEQ Executive Director may at any time require stack testing, analyses, and other testing by an independent contractor at the company's expense. If testing is required, the TCEQ Fort Worth Regional Office shall be notified a minimum of 45 days in advance of any tests and a pre-test meeting shall be held with the TCEQ to establish test parameters and dates. All required test data, reports, etc., shall be forwarded to the TCEQ Fort Worth Regional Office within seven days of the date the holder of this permit receives the final data, reports, etc. from the independent contractor. The holder of this permit shall maintain a copy of any such report on-site and make a copy available, upon request, to any agent or representative of the TCEQ or local air program that has jurisdiction.
14. Inspection and maintenance of the baghouses shall be performed on a daily, weekly, and monthly basis. Compliance with this condition may be based on the baghouse inspection records which shall be maintained by the holder of this permit and made available to the personnel of the TCEQ. These records shall be maintained for a 24-month rolling period.

SPECIAL CONDITIONS

Permit Number 3048A

Page 3

RECORDKEEPING

15. The following records shall be kept and maintained on-site for a rolling 24-month period and made available upon request to representatives of the TCEQ or any local air pollution control agency having jurisdiction: **(06/06)**

- A Lead oxide hourly and annual production;
- B Baghouse inspection and maintenance records as specified in Special Condition No.14;
and
- C. Facility hours of operation

Dated June 8, 2006

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit Number 3048A

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

AIR CONTAMINANTS DATA

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | <u>Emission Rates *</u> | |
|---------------------------|---|-----------------------------|-------------------------|--------------|
| | | | lb/hr | TPY |
| 11 | Oxide Reactor No. 3 Baghouse Stack | Pb | 0.050 | 0.21 |
| 12 | Oxide Reactor No. 2 Baghouse Stack | Pb | 0.03 | 0.13 |
| 13 | Oxide Reactor No. 1 Baghouse Stack | Pb | 0.05 | 0.21 |
| 14 | Oxide Hygiene Baghouse Stack(MELTPOT1, MELTPOT2, and MELTPOT3) | PM/PM ₁₀ Pb | 0.32 0.03 | 1.34 0.13 |
| 15 | North Hammermill Baghouse Stack | Pb | 0.050 | 0.21 |
| 16 | Oxide Reactor No. 4 Baghouse Stack | Pb | 0.02 | 0.07 |
| 17 | South Hammermill Baghouse Stack | Pb | 0.050 | 0.21 |
| 24 | Oxide Reactor No. 5 Baghouse Stack | Pb | 0.006 | 0.03 |
| 25 | Oxide Reactor No. 6 Baghouse Stack | Pb | 0.004 | 0.02 |
| 26 | Oxide Central Vacuum System Baghouse Stack | Pb | 0.001 | <0.01 |

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | <u>Emission Rates</u> | |
|---------------------------|---|-----------------------------|-----------------------|-------|
| | | | lb/hr | TPY |
| 27 | West Truck Loading Fug (4) | Pb | 0.001 | <0.01 |
| 28 | East Truck Loading Fug (4) | Pb | 0.001 | <0.01 |
| 46 | Oxide Building fugitives (4) TROUGH1C and TROUGH2C | SO ₂ | <0.01 | <0.01 |
| | | NO _x | 0.07 | 0.30 |
| | | CO | 0.03 | 0.13 |
| | | VOC | <0.01 | 0.02 |
| | | PM/PM ₁₀ | <0.01 | 0.02 |
| 56 | Oxide Process Combustion Sources 1 Stack (Melt Pot 2, Reactor 2 and 4) | SO ₂ | <0.01 | 0.01 |
| | | NO _x | 0.39 | 1.72 |
| | | CO | 0.33 | 1.44 |
| | | VOC | 0.02 | 0.09 |
| | | PM/PM ₁₀ | 0.03 | 0.13 |
| 57 | Oxide Process Combustion Sources 2 Stack (Melt Pot 1 and Reactor 1 and 2) | SO ₂ | <0.01 | 0.01 |
| | | NO _x | 0.39 | 1.72 |
| | | CO | 0.33 | 1.44 |
| | | VOC | 0.02 | 0.09 |
| | | PM/PM ₁₀ | 0.03 | 0.13 |
| 58 | Oxide Process Combustion Sources 3 Stack (Melt Pot 3 and Reactor 5 and 6) | SO ₂ | <0.01 | 0.01 |
| | | NO _x | 0.39 | 1.72 |
| | | CO | 0.33 | 1.44 |
| | | VOC | 0.02 | 0.09 |
| | | PM/PM ₁₀ | 0.03 | 0.13 |

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

- (1) Emission point identification - either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name. For fugitive sources use area name or fugitive source name.
- (3) VOC - volatile organic compounds as defined in the Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
SO₂ - sulfur dioxide
PM - particulate matter, suspended in the atmosphere, including PM₁₀.
PM₁₀ - particulate matter equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no particulate matter greater than 10 microns is emitted.
CO - carbon monoxide
Pb - lead and lead compounds as lead
- (4) Fugitive emissions are an estimate only.

24 Hrs/day 7 Days/week or 8,400 Hrs/year

Dated June 8, 2006