Air Permit Application for the Proposed Expansion of Smelting and Refinery Operations

* Revised construction permit; replaces 1/24/02.

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Gulf Coast Recycling, Inc.
Tampa, Florida

Permit No. 050057-010-AC

Project No. 00-70796.02

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AIR MANAGEMENT

August 2002

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RMT, Inc. | Gulf Coast Recycling, Inc.
Final Report
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Acronyms

BACT	Best Available Control Technology
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
$CaCO_3$	calcium carbonate
CO	carbon monoxide
gr./dscf	grains per dry standard cubic foot
HAP	hazardous air pollutants
Lb	pound(s)
Lb/hr	pound(s) per hour
MACT	maximum achievable control technology
MMBtu	million British thermal units
MMBtu/hr	million British thermal units per hour
NAAQS	National Ambient Air Quality Standards
NESHAPs	National Emission Standards for Hazardous Air Pollutants
NO_x	nitrogen oxides
NSPS	New Source Performance Standard
PM	particulate matter
ppm	parts per million
PSD	prevention of significant deterioration
RMT	RMT, Inc.
SER	Significant emission rates
SO_2	Sulfur dioxide
TAP	Toxic air pollutant
Tpy	Tons per year
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

Executive Summary

This application package discusses the proposed modifications to the Gulf Coast Recycling, Inc. (Gulf Coast) secondary lead smelting facility located in Tampa, Florida. RMT, Inc. (RMT) was contracted by Gulf Coast to prepare this air permit application. Gulf Coast originally submitted a permit application to the Environmental Protection Commission of Hillsborough County (EPC) and the Florida Department of Environmental Protection (DEP) in January 2002 requesting to modify the facility's current air permit to accommodate the installation of a second blast furnace. That application presented an expansion and control approach that triggered a Prevention Significant Deterioration (PSD) review. DEP requested additional information for the January 2002 submittal. In response to DEP's comments and suggestions, Gulf Coast is herein proposing to make substantial changes to the facility expansion plan, including changes to the proposed process and installing additional air pollution control equipment. The control improvements and emissions reductions proposed for the expansion approach are such that the net emissions changes remain below the significant levels triggering PSD review. This air permit application package is being submitted as a replacement for the January 2002 PSD permit application.

Highlights of the new expansion and control approach are as outlined below:

- Installing a reverberatory furnace and not a blast furnace as originally planned. The reverberatory furnace technology is inherently "cleaner" than blast furnace technology and will allow Gulf Coast to reduce the throughput to the existing blast furnace.

- Enclosing the furnace building (which will house both the existing blast furnace and new reverberatory furnace) on all sides and venting the resulting building enclosure to a new cartridge dust collector.

- Installing a scrubber to minimize lead and sulfuric acid emissions from battery breaking operations.

- Enhancements of floor and pavement cleaning protocols by changing from wetting to pressure washing for floors and pavement.

- Relocating the truck weigh scale to a new, centrally located plant entrance to reduce vehicle miles through the plant.

- Upgrade of existing hygiene baghouse for blast furnace
- Installation of HEPA filter units on the exhaust of both the upgraded hygiene baghouse and the new hygiene baghouse controlling emissions from charging and tapping operations of both furnaces.
- Reverberatory furnaces inherently produce a softer lead that requires fewer refining steps. The substantial increase in overall facility output can, therefore, be accomplished with no increase in the use of sodium nitrate (sodium nitrate) in the refinery. Correspondingly, nitrogen oxide (NO_x) emissions from the refinery will not increase.
- Upgrade of the existing refining baghouse to handle hood exhaust from two new refining kettles.
- The offgas stream from the reverberatory furnace is sufficiently hot to control carbon monoxide (CO) emissions from the blast furnace via gas stream blending.
- The combined high temperature gas stream from both furnaces will foster more efficient performance from the new system installed for sulfur dioxide (SO_2) removal .

Gulf Coast is located in Hillsborough County, which is designated as an attainment area for all criteria pollutants. As a result of the proposed expansion and control approach, significant net emission increases as defined under PSD regulations are not anticipated for any criteria pollutants.

The Gulf Coast facility is subject to the following air pollution regulations:

- Florida Administrative Code
- Rules of EPC of Hillsborough County.
- Regulations for PSD, 40 CFR Part 52.21

The following points highlight the regulatory points of analysis of the proposed expansion and control approach:

- Pb emissions will increase less than 0.6 ton per year.
- Future sulfur dioxide emissions will be limited to 39 tons plus the average actual emissions for the last two years. Emissions will be significantly less than the current allowable (future allowable of 750.13 tons per year versus the current allowable of 1,015 tons per year).
- Future carbon monoxide emissions will be limited to 99 tons plus the average actual emissions for the last two years.

- Future NO_x emissions will be limited to 39 tons plus the average actual emissions for the last two years.
- Particulate matter emissions will increase less than 15 ton per year.
- As a result of the above future emissions limitations the proposed facility modification does not involve significant increases of any pollutant as defined in the PSD regulations and this project does not trigger PSD review
- The emission limits and controls proposed for maintaining this project below PSD trigger levels are more stringent than the specific source limits specified in the New Source Performance Standards (NSPS) Subpart L, and National Emissions Standards for Hazardous Air Pollutants (NESHAP), Subpart X, applicable to this industry.
- Modeling of the future expanded and controlled facility also demonstrates that compliance with the National Ambient Air Quality Standard (NAAQS) for lead of 1.5 ug/m^3 on a calendar quarterly average will continue.

Section 1
Introduction

1.1 Background

Gulf Coast currently operates a secondary lead smelting facility in Tampa, Florida. The plant is currently permitted to produce 26,500 tons per year of lead. Gulf Coast is proposing to increase the furnace production capacity to 65,000 tons per year and refinery capacity to 65,000 tons per year of lead. The proposed capacity increase will be achieved by the installation of a reverberatory furnace, a feed dryer, two additional refining kettles and associated air pollution control equipment. It is important to note that the feed dryer will not be installed initially along with the reverberatory furnace, rather it would be installed at a later date. However, the project is considered as one project for PSD purposes. This application also includes the installation of the already permitted CRT/pallet crusher, with the exhaust controlled by a scrubber rather than a baghouse as originally permitted. This permit application will demonstrate that the proposed modifications will not increases emissions of PM, NO_X CO, VOC, SO_2, and Pb above the significant emission rates (SER) as defined for these pollutants in PSD regulations. It should be noted that the refinery operations were modified in 2001 by replacing three 52 tons kettle with four 78 tons kettles. The emission increases from the 2001 refinery modification project are included in the PSD netting analysis presented in this application and all changes presented herein considered as a single project. The baseline emissions for the refinery operation are based on actual emissions in 1999 and 2000 (two years prior to the last modification).

1.2 Site Description

The Gulf Coast facility is located in Hillsborough County, Tampa, Florida. The approximate UTM coordinates of the facility are Zone 17, East (km) 364.0, North (km) 3093.5. The facility address is as follows:

Gulf Coast Recycling, Inc.
1901 North 66th Street
Tampa, Florida 33619

The plant is situated on a site of about 11.0 acres. The plant's location in relation to the surrounding area is shown on **Figure 1-1.**

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The RMT contact is as follows:

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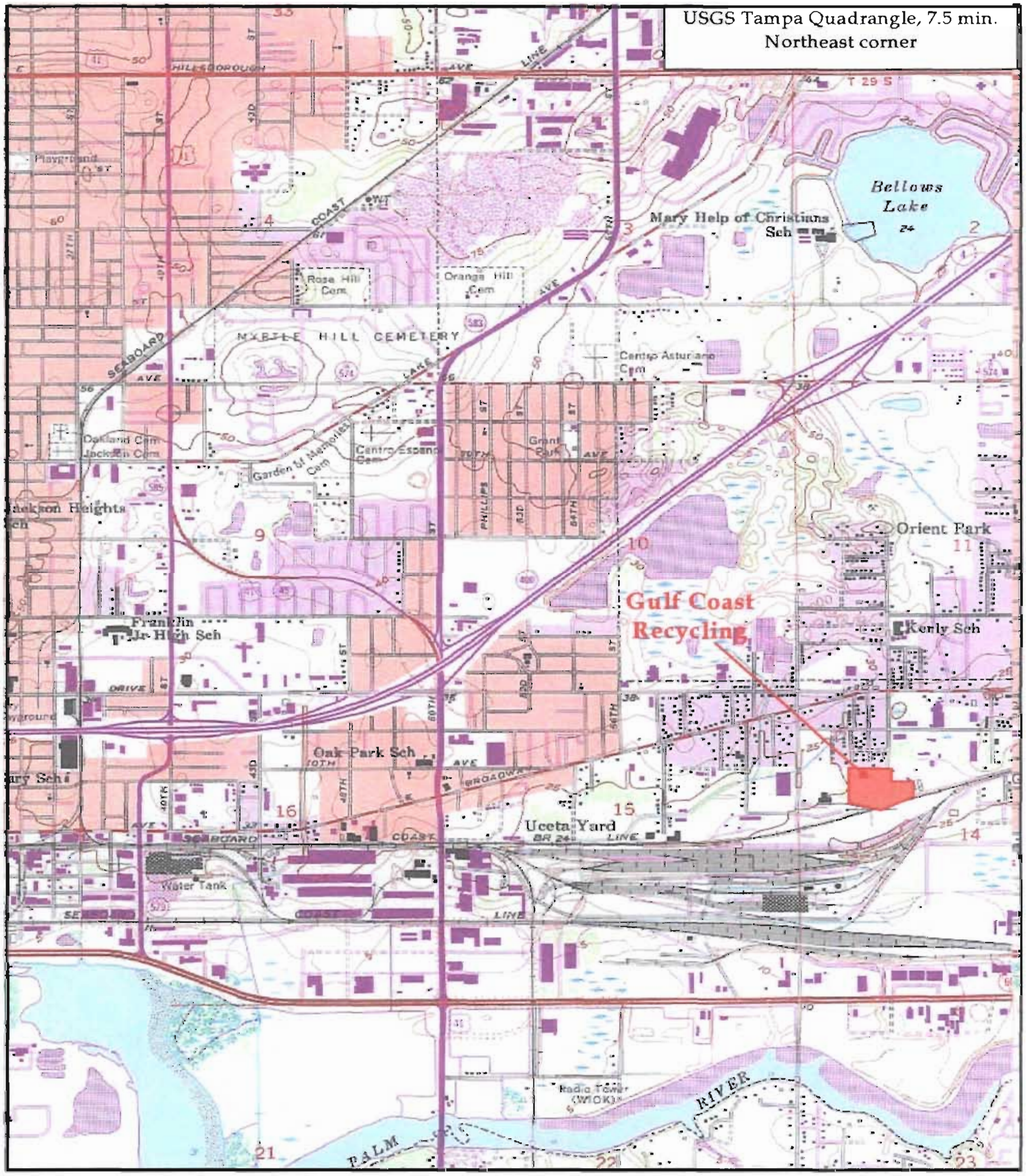
1.3 Purpose

The purpose of this document is to replace the PSD air permit application package submitted in January 2002 and present the proposed modification to the plant. **Appendix A** contains actual emission calculations, **Appendix B** contains potential emission calculations, **Appendix C** contains a traffic count study, **Appendix D** contains standard operating procedure for control of fugitive emissions along with the Standard Operating Procedure (SOP) for the baghouses, **Appendix E** contains new construction permit application forms and, **Appendix F** contains dispersion modeling analysis.

Figure 1-1 Facility Location Map



Section 2
Process Description

Gulf Coast is a secondary lead smelting facility with a current capacity to produce 26,500 tpy of lead from furnace operations and 32,000 tpy of finished lead. Used lead-acid batteries and some battery manufacturing scrap lead (less than 2%) are the principal sources of lead input to the plant process. With the installation of a new reverberatory furnace and related equipment as described in this application, furnace throughput will increase to a combined 65,000 tpy and refinery capacity will increase to 65,000 tpy.

The lead battery recycling process involves four major production areas as outlined below:

- Raw Material Receiving and Storage
- Battery Crushing and Separation
- Furnace Operations
- Refining Operations

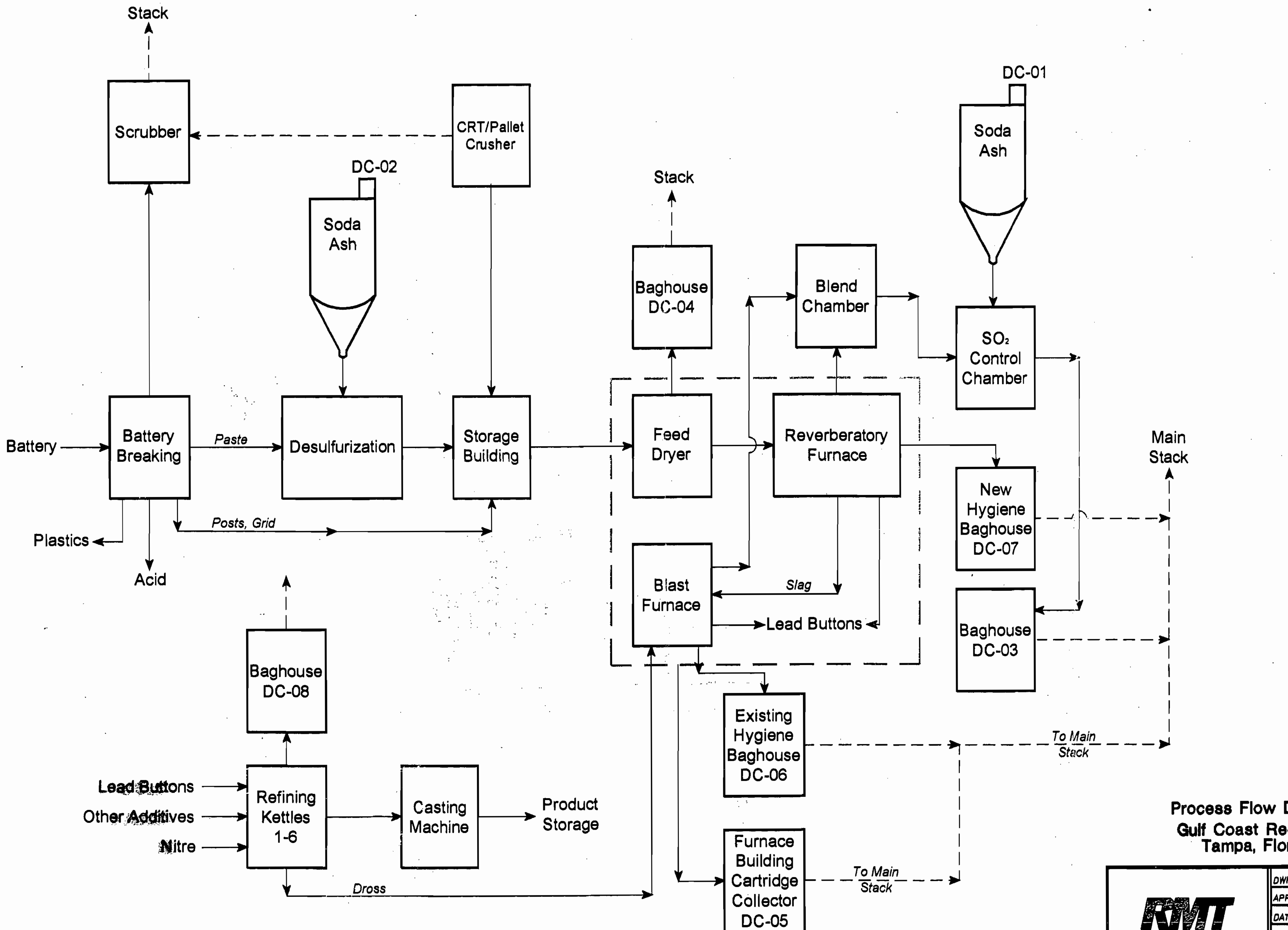
The process flow diagram for the entire proposed process is as shown in **Figure 2-1,** a detailed description of each of the production areas is provided below. The proposed changes to each process area are also described below.

2.1 Raw Material Receiving and Storage

Raw material handling operations include receiving, unloading, storing and conveying the raw materials required for the furnace charging and refining operations.

Furnace raw materials include lead carbonate (an output of the battery breaker desulphurization process), coke, limestone, cast iron or scrap iron, and return slag. Batteries arrive at the facility by truck and are offloaded directly to the battery breaking process area. Miscellaneous lead bearing materials, such as pasted plates, scrap oxide, sump mud and dross, are received in sealed drums and staged in the old refining building.

Soda ash is currently received by trucks and pneumatically conveyed to a 90 ton bulk soda ash silo. Emissions from the soda ash silo (Emission Unit I.D 008) are vented through a bin vent type dust collector (DC-01) located on the top of the silo. Coke is currently received in bulk by truck and is unloaded into the coke storage area located south of the feed material storage building. Both limestone and cast iron are currently received in trucks and stored in the storage building located near the battery breaker unloading dock.



Process Flow Diagram
Gulf Coast Recycling
Tampa, Florida

RMT	DWN. BY: MORANC
	APPROVED BY: MNP
	DATE: 8/13/02
	PROJ. # 00-70796.02
	FILE # 007079602-001.DWG

FIGURE 2-1

Refinery raw materials include, lead, alloying metals, sodium hydroxide, red phosphorus, sodium nitrate, and other miscellaneous refinery chemicals. Refinery chemicals are received in bags or drums and are unloaded in the refinery area or the appropriate storage location.

Other raw materials include hydrated lime, ferric chloride and diatomaceous earth used in the wastewater treatment facility and liquid caustic used in the battery breaking area. Liquid caustic is received in bulk tankers and stored in a tank located in the wastewater treatment facility.

Future changes to this area

The future changes include the conversion of a currently unused cement silo to a soda ash silo. A bin type dust collector (DC-02) will control emissions from the new soda ash silo. A separate air construction permit application was already submitted on January 18, 2002 for this change and a draft permit was issued.

An important reduction in the potential for material tracking onto outdoor surfaces will be achieved by the consolidation of a number of raw material storage areas to within the operational building area. Storage of coke, limestone, and scrap iron will be relocated to be directly adjacent to the blast furnace, thereby eliminating a great deal of forklift traffic in and out of the building.

The current truck scale is located near the southeast corner of the production area of the plant and the entrance to the plant is on the northeast corner of the plant. Every truck entering the plant has to be weighed coming in and going out. As a result of the relative location of the plant entrance and the truck scale, the current vehicle miles traveled by trucks inside the plant is very high. The proposed changes include relocating the truck scale at a new northside entrance. This change will eliminate a great deal of truck traffic in the plant since the scale will be located adjacent to the new plant entrance.

2.2 Battery Breaking and Separation

Battery breaking and separation is accomplished in an M.A. Industries Model 41DS Desulfurization Battery Recycling system that is designed to reduce the sulfur content of the furnace feed stock, thereby reducing sulfur dioxide emissions from the furnace. In this process, used batteries are primarily broken apart in a shredder where most of the acid is drained to a settling tank. The hammermill further crushes the battery and is followed by two screens operating in series. Grid metal and posts or top lead are conveyed by screw to the group storage area. Lead sulfate and lead oxide are slurried in a reaction tank with soda ash to form lead carbonate and sodium sulfate which are separated in a filter press. The filter cake is conveyed to the group storage building. The sodium sulfate laden wastewater is pumped to the wastewater treatment facility. Plastics are blown into trucks for resale. Currently the material storage piles in the storage building are periodically sprayed with fresh water as needed to minimize dusting potential.

Future changes to this area

The future changes to the battery breaking area include enclosing the battery breaking building on three sides to minimize the potential for fugitive lead emissions. Additionally, ventilated hoods will be installed over the shredder, hammermill and primary screens to control the acid mist from the crusher. The exhaust from the hoods will be vented to a wet scrubber. Floors in this area will be periodically pressure washed.

2.3 Furnace Operation

The composition of the charge to the furnace depends on the specific metal characteristics desired in the end product. Gulf Coast currently operates one blast furnace (Emission Unit I. D 001) for initial smelting of battery groups and plant scrap lead.

Future changes to the Furnace Area

Future changes to the furnace area include the installation of a reverberatory furnace and an associated feed dryer. The installation of the reverberatory furnace (reverb) will increase the lead processing capacity to 65,000 tons per year (roughly 45,500 tons from the reverberatory furnace and 19,500 tons from the blast furnace). The exhaust from the reverb furnace will be combined with the exhaust from the blast furnace in an initial a blend chamber. The blending of the gas stream in this fashion will achieve very effective CO destruction. The SO_2 emissions from the furnace will be controlled by soda ash slurry injection into the exhaust stream downstream of the blend chamber. The combined furnace stream will be controlled by the existing baghouse (DC-03). New fans will be installed increasing the airflow to 50,000 acfm of combined furnace exhaust. The existing air -to-cloth ratio at 30,000 acfm is 1.07:1. The new air-to- cloth ratio would be 1.78:1. Even with one compartment shut down and shaking, the air-to-cloth ratio will be below 2:1. The exhaust from the feed dryer will be controlled by a new baghouse (DC-04) and vented to the atmosphere.

To minimize the fugitive emissions from the furnace operations, the furnace building housing both furnaces will be enclosed on all sides and vented to a new cartridge-type dust collector (DC-05).

The following subsections describe the basic operations in the furnace area.

2.3.1 Furnace charging

A typical charge to the blast furnace consist of lead bearing material, coke, limestone, cast iron, dross from the refinery and return slag. The charge is first accumulated and weighed in the weigh hopper. The hopper is then emptied in the charger unit, which consists of a mechanical skip hoist that charges the material at the top of furnace opening (fitted with automatic doors). Fugitive emissions from the charge doors are captured by a hood and ventilation system. Particulate matter and lead emissions from charging and tapping are controlled by a three-compartment shaker baghouse (DC-06).

Future Changes to this process area

The typical charge to the reverberatory furnace will consist primarily of lead carbonate paste from the desulfurization process, other lead bearing material, coke breeze and other reductants. The emissions from the reverberatory furnace feed charging operation will be controlled by collection hoods, which will be vented to a new hygiene baghouse (DC-07). The existing hygiene baghouse (DC-06) will be upgraded to a four-compartment shaker baghouse. A bank of HEPA filters will be installed at the outlet of the new and upgraded hygiene baghouses (DC-06 and DC-07).

A typical charge to the blast furnace will consist of slag from reverberatory furnace, lead bearing material, coke, limestone, cast iron, dross from the refinery and return slag.

2.3.2 Smelting

The process heat required to melt the charge in the blast furnace is produced by the reaction of the coke in the charge with blast air that is blown in to the furnace. Flue gases from the blast furnace are cooled by serpentine cooling loops. Particulate matter from the blast furnace is currently controlled by a 10-compartment shaker baghouse (DC-03).

Future changes to this process area

Natural gas burners rated at 20 MM Btu/hr will provide the process heat required to melt the charge in the reverberatory furnace. Particulate matter from the reverb furnace exhaust will be controlled in the existing baghouse (DC-03) that will be modified to handle 50,000 acfm of combined exhaust from both the furnaces.

2.3.3 Slag and Lead Tapping

As the blast furnace charge melts, limestone and iron float to the top of the molten bath and form a slag that retards the oxidation of lead. The slag is periodically removed and kept in the slag pans until it is crusted on the top and is no longer emitting smoke and fume. The emissions from blast furnace slag tapping operations are captured by a hood and ventilated to the hygiene baghouse (DC-06)

Molten lead continuously flows to the lead well. Lead is cast into large ingots called buttons. Blast lead buttons are transported to the refining operations for further refining to specifications based on customer orders. Lead tapping emissions from the blast furnace are vented to the hygiene baghouse (DC-06).

<u>Future changes to this process area</u>

Lead and slag tapping emissions from the new reverb furnace will be vented to the new hygiene baghouse (DC-07). The existing hygiene baghouse (DC-06) will be upgraded to a four-compartment baghouse. A bank of HEPA filters will be installed at the outlet of the new (DC-07) and upgraded hygiene baghouse (DC-06).

2.4 Refining and Casting Operations

Refined lead includes soft lead (which is 99.9 plus percent pure lead), hard lead (which contains antimony), and calcium lead (which is pure lead with the addition of calcium).

Refining and processing of blast lead is accomplished in four 78-ton kettles (Emission Unit 011). All the kettles are heated with natural gas and equipped with hoods to capture fugitive emissions. Particulate and lead emissions from the refining kettles are controlled by venting the hoods to the existing refinery baghouse (DC-08). The flue gases resulting from firing natural gas are vented through individual stacks. After melting and refining operations are complete, drosses are removed and lead is cast into ingots by a pigging machine. The dross is returned to the blast furnace.

<u>Future changes to this process area</u>

The future plans call for the installation of two new 78-ton refining kettles (Emission Unit 011). The new refining kettles will be heated with natural gas and equipped with hoods to capture fugitive emissions. A fourth compartment will be added to handle the exhaust from the hoods associated with the two new refining kettles. Particulate and lead emissions from the new refining kettles will be controlled by venting the hoods to the upgraded refinery baghouse (DC-08). Flue gases (Emission unit 013) resulting from firing natural gas are to be vented through individual stacks. The addition of the new kettles will increase the refining capacity to process 65,000 ton per year of lead. The floors in this area will be periodically pressured washed.

The proposed changes to each production area are summarized in **Table 2-1**.

Table 2-1
Summary of Emission Unit Changes

SOURCE	NATURE OF CHANGE
Furnace Area	• Installation of the new reverberatory furnace • Installation of feed dryer for reverberatory furnace • Enclosing the furnace building and venting it to a new cartridge collector • Installing a new hygiene baghouse for the reverberatory furnace • Installing a new baghouse for the feed dryer • Upgrading the blast furnace hygiene baghouse • Installing HEPA filters at the outlet of the new and upgraded hygiene baghouses • Combining process offgases from both furnaces in a common blend chamber for CO and VOC control. • Installing the sulfur dioxide removal system downstream of the blend chamber and upstream of the baghouse • Increasing furnace production to 65,000 tons per year of lead • Modifying Baghouse DC-03 to handle combined furnace flow of 50,000 acfm. • Combining exhaust from the furnace process baghouse, furnace building baghouse and two hygiene baghouses and venting it through one main stack.
Refining and Casting Area	• Installation of two new refining kettles • Upgrading the refinery baghouse • Increasing refining production to 65,000 tons per year of lead • Pressure washing the floors
Battery Breaking and Separation Area	• Installing a scrubber to control acid mist emissions • Pressure washing the floors
Raw Material Receiving and Storage	• Convert cement silo currently not in use to a soda ash storage silo • Relocating coke, scrap iron, and limestone storage closer to the blast furnace operations
Fugitive Emissions from Road	• Relocating the truck scale at a new north entrance to minimize in plant traffic • Wet suppression and periodic pressure washing.

Section 3
Emission Estimates

The proposed modification will increase the production capacity of the furnaces to 65,000 tons per year of finished lead and the refinery capacity to 65,000 tons per year of finished lead. In order to evaluate whether emission changes associated with these modifications are significant with respect to PSD, it is necessary to compare the facility's potential future annual emissions with its current actual annual emissions as represented by the past two years of actual operation.

For the purpose of this application, two- year period of 2000 and 2001 is considered as representative of the current operations. As will be further explained below, for refining operations, 1999 and 2000 are considered as representative since the last refinery modification, completed in 2001, must be included as a single project along with the future modifications being proposed herein.

Current emission rates for all the pollutants from stack sources can be readily determined from stack testing records for the 2000 and 2001 time periods. Fugitive emission rates of lead and particulate matter from non-stack sources such as roadways and hooding losses must be estimated using published emissions factors and engineering estimates. Fugitive emissions estimated based upon this approach are less certain. Hence, in order to verify the validity of the fugitive emission estimates, a dispersion model of the current emission case has been constructed. Comparing the result of this model with the ambient lead monitoring data obtained in the vicinity of the plant provides a means of validating the fugitive emission estimates.

3.1 Current Actual Emissions

A summary of current actual emissions is provided in **Table 3-1**, and the detailed calculations for each process source are provided in **Appendix A**. Emissions listed in **Table 3-1** are representative of operations and production for the 2-year period (2000 and 2001) prior to this permit modification submittal.

3.1.1 Battery Breaker Building

Lead emissions from the battery breaker operation were estimated using an uncontrolled emission factor of 0.0011 Kg/Mg of lead produced as suggested in the Secondary Lead Smelting NESHAP (40 CFR 63 Subpart X) background document (EPA 453/R-94-024bPage D-56). The factor is expressed as 0.0011 Kg/Mg battery grids, paste and posts charged to the smelting furnace. The factor was converted to lb/ton of lead produced to be consistent with the facility's current record keeping requirement.

Table 3-1
Summary of Past Actual Emissions (Baseline Emissions)

Existing Units	Storage Silo	Battery Breaking	Blast Furnace	Hygiene	Refining Kettles	Casting	Road	Total Emissions (TPY)
PM Stack	0.01		1.53	0.84	0.54			2.92
PM Fug		0.11	15.38		0.01	0.01	0.70	16.22
PM Total	0.01	0.11	16.90	0.84	0.55	0.01	0.70	19.14
PM_{10} Stack	0.01	0.11	1.53	0.84	0.54			3.03
PM_{10} Fug			15.38	-	0.01	0.01	0.70	16.11
PM_{10} Total	0.01	0.11	16.90	0.84	0.55	0.01	0.70	19.14
SO2 Stack			759.91		0.004			759.91
SO2 Fug			-					0.00
SO2 Total			759.91		0.004			759.91
NOx Stack			1.64		25.51			27.15
NOx Fug			-					0.00
NOx Total			1.64		25.51			27.15
CO Stack			650.52		0.60			651.13
CO Fug			-					0.00
CO Total			650.52		0.60			651.13
VOC Stack			67.73	3.90	0.04			71.67
VOC Fug			-					0.00
VOC Total			67.73	3.90	0.04			71.67
Pb Stack			0.07	0.22	0.02			0.32
Pb Fug		0.06	0.38		0.004	0.004	0.28	0.73
Pb Total		0.06	0.45	0.22	0.03	0.004	0.28	1.05

Uncontrolled lead emissions from Attachment E, Page D-56 of MACT Background document =

0.0011 Kg/Mg of grids, paste and posts charged to the furnace

= 0.0011 X 2 lb/ton of grids, paste and posts charged to the furnace

From Page 2-17 of the MACT background document,

A typical reverb furnace would produce 66% elemental lead from a typical charge of grids and paste.

From Page 2-20 of the MACT background document,

A typical blast furnace would produce 77 % elemental lead from a typical charge of grids and paste.

Based on the above averages and allowing for the lead lost in the slag and baghouse dust, a conservative estimate for elemental lead produced would be 50% from a typical charge.

Therefore, the factor was adjusted by a factor of 2 to covert to elemental lead production.

Uncontrolled emission factor = 0.0022 lb/ton x (1/0.5)

= 0.0044 lb of lead per ton of lead produced

Fugitive Pb emissions in production year 2000 =

0.0044 lb/ton of lead X 26,500 ton of lead/yr

= 116.60 lb of Pb/year.

Fugitive Pb emissions in production year 2001 =

0.0044 lb/ton of lead X 24,332 ton of lead/yr

= 107.06 lb of Pb/year.

Average fugitive Pb emissions for 2000 and 2001=

=(116.60+107.06)/2

=111.83 lb/yr

3.1.2 Blast Furnace Emissions

The Pb, CO, SO_2 and VOC emissions from the blast furnace baghouse were estimated using stack test data and the actual hours of operation for the past two years.

Pb Emissions from Blast Furnace Baghouse:

Lead emissions were based on stack test data for July 2000 and July 2001 and hours of operations for the blast furnace in production year 2000 and 2001.

Data for year 2000:

Pb emission from July 2000 stack test = 0.000103 grains/dscf.

Average airflow recorded during stack testing = 24,142 dscfm

Hours of operation for the blast furnace in year 2000 = 8,126

Therefore, annual Pb emissions in year 2000 =

0.000103 grains/dscf x 24,142 dscfm x 1/7,000 lb/grains x 60 min/hr x 8,126 hours/yr x 1/2,000 lb/ton

=0.0866 tons/yr

Data for year 2001:

Pb emission from June 2001 stack test = 0.000068 grains/dscf.

Average airflow recorded during stack testing = 25,045 dscfm

Hours of operation for the blast furnace in year 2000 = 8,128

Therefore, annual Pb emissions in year 2001 =

0.000068 grains/dscf x 25,045 dscfm x 1/7,000 lb/grain x 60 min/hr x 8,128 hours/yr x 1/2000 lb/ton

= 0.0593 tons/yr

Therefore two year average Pb emissions from blast furnace baghouse =

=(0.0593+0.0866)/2

= 0.0730 tons per year

PM Emissions from blast furnace baghouse:

PM Emissions were based on stack test data for June 2000 and June 2001 and hours of operation for the blast furnace in the year 2000 and 2001.

Data for year 2000:

PM emission from June 2000 stack test = 0.003195 grains/dscf.

Average airflow recorded during stack testing = 25,077 dscfm

Hours of operation for the blast furnace in year 2000 = 8,126

Therefore, annual Pb emissions in year 2000 =

0.003195 grains/dscf x 25,077 dscfm x 1/7,000 lb/grains x 60 min/hr x 8,126 hours/yr x 1/2,000 lb/ton

=2.79 tons/yr

<u>**Data for year 2001:**</u>

PM emission from June 2001 stack test = 0.000304 grains/dscf

Average airflow recorded during stack testing = 25,045 dscfm

Hours of operation for the blast furnace in year 2000 = 8,128

Therefore, annual Pb emissions in year 2001 =

0.000304 grains/dscf x 25,045 dscfm x 1/7,000 lb/grain x 60 min/hr x 8,128 hours/yr x 1/2000 lb/ton

= 0.027 tons/yr

Therefore, two year average Pb emissions from Blast furnace baghouse =

=(0.027+2.79)/2

= 1.53 tons per year

<u>**Fugitive Pb emissions from blast furnace building**</u>

Fugitive Pb emissions were estimated using AP-42 factor of 0.6 lb/ton from AP-42, Chapter 12, Table 12.11-4 (1/95) and the corresponding production data for the last two years. All emissions not captured by the hygiene hooding were considered fugitive. The capture efficiency of the hooding was assumed to be 95% as suggested in the MACT background document EPA 453/R-94-02b, Attachment E, Page D-58.

The blast furnace building is open-sided and has an opening in its roof at the point where the process exhaust duct exits the building. The proportion of furnace fugitive emissions leaving the building via the roof opening cannot be directly determined. Dispersion modeling of the baseline emission case was performed for comparison with available ambient lead monitoring data near the facility (Section 3.3). The proportion of furnace fugitive emissions leaving the building roof opening and open sides was varied and it was found that the best agreement between the model results and monitoring data was found when one half of the furnace fugitives are emitted through the roof opening and one half emitted through the building's open sides.

Fugitive Pb emissions in production year 2000 =

0.6 lb/ton of lead X 26,500 ton of lead/yr x (1-0.95)

= 795 lb of Pb/year.

Fugitive Pb emissions in production year 2001 =

0.6 lb/ton of lead x 24,332 ton of lead/yr x (1-0.95)

= 729.96 lb of Pb/year.

Average fugitive Pb emissions for 2000 and 2001=

=(795+729.96)/2

= 762.48 lb/yr

Pb emission from building openings = 762.48 x 0.5 x 1/2000 lb/ton

= 0.19 ton/yr

Pb emission from roof opening =762.48 x 0.5 x 1/2000 lb/ton

= 0.19 ton/yr

<u>Fugitive PM Emissions from Blast Furnace Building</u>

Fugitive PM emissions were estimated using the AP-42 factor of 24.2 lb/ton from AP-42, Chapter 12, Table 12.11-4 (1/95) and the corresponding production data for the last two years. All emissions not captured by the hygiene hooding were considered fugitive. The capture efficiency of the hood was assumed to be 95% as suggested in the MACT background document EPA 453/R-94-02b, Attachment E, Page D-58.

Fugitive PM emissions in production year 2000 =

24.2 lb/ton of Pb x 26,500 ton of lead/yr x (1-0.95)

= 32,065 lb of PM/year.

Fugitive PM emissions in production year 2001 =

0.6 lb/ton of Pb x 24,332 ton of lead/yr x (1-0.95)

= 29,441.72 lb of PM/year.

Average fugitive PM emissions for 2000 and 2001=

=(32,065+29,441.72)/2 x 1/2000 lb/ton

= 15.38 lb/yr

CO and VOC emissions from Blast furnace baghouse

CO and VOC emissions were estimated based on the stack test data and hours of operations.

Data for CO:

CO emissions from June 2000 stack test = 250 lb/hr

Annual CO emissions = 250 lb/hr x 8,126 hr/yr x 1/2000 lb/ton

= 1015.75 ton/yr

CO emissions from June 2001 stack test = 70.20 lb/hr1

Annual CO emissions = 70.20 lb/hr x 8,128 hr/yr x 1/2000 lb/ton

= 285.29 ton/yr

Two year average CO emissions = 1015.75+285.29/2

=650.52 ton/yr

Data for VOC:

VOC emissions from June 2000 stack test = 26.5 lb/hr

Annual VOC emissions = 26.5 lb/hr x 8,126 hr/yr x 1/2000 lb/ton

= 107.67 ton/yr

VOC emissions from June 2001 stack test = 6.84 lb/hr

Annual VOC emissions =6.84 lb/hr x 8,128 hr/yr x 1/2000 lb/ton

= 27.80 ton/yr

Two year average VOC emissions = 107.67+27.80/2

=67.73 ton/yr

SO_2 emissions from Blast furnace baghouse

Sulfur dioxide emissions for 2000 are based on stack test for June 1999 and July 2000.

Data for 2000:

June 1999 stack test result = 56.89 lb of SO_2 per ton of lead

Tons of lead produced from January 2000 through June 2000 = 13,262 ton

SO_2 emissions from January 2000 through June 2000 = 56.89 lb of SO_2/ton x 13,262 tons x 1/2000 lb/ton

= 377.23 tons

July 2000 stack test result = 57.2 lb of SO_2 per ton of lead

Tons of lead produced from July 2000 through December 2000 = 13,214 tons

SO_2 emissions from January 2000 through June 2000 = 57.2 lb of SO_2/ton x 13,214 tons x 1/2000 lb/ton

= 377.92 tons

<u>Total SO2 emissions in year 2000 = 377.23 + 377.92 = 755.15 tons</u>

<u>Data for 2001:</u>

For 2001 emissions stack test data was used for first three months and CEM data for the remainder nine months.

July 2000 stack test result = 57.2 lb of SO2 per ton of lead

Tons of lead produced from January 2001 through March 2001 = 6,162 tons

SO_2 emissions from January 2001 through March 2001 = 57.2 lb of SO_2/ton x 6,162 tons x 1/2000 lb/ton

= 176.23 tons

SO_2 emissions from April 2001 through December 2001 were based on CEM data. Total lb of SO_2 emitted during this period is 1,176,773 lb

SO_2 emissions from April 2001 through December 2001 = 1,176,773 lb x 1/2000 lb/ton

= 588.38 ton

<u>Total SO_2 emissions in 2001 = 176.23+588.38 = 764.61 tons</u>

Two year average SO_2 emissions = (755.15+764.61)/2 =759.9 tons

3.1.3 Hygiene Baghouse

The Pb, PM and VOC emissions from the hygiene baghouse are estimated using the stack test data and actual hours of operation for the past two years.

<u>Pb Emissions from Hygiene Baghouse:</u>

Lead Emissions were based on stack test data for June 2000 and June 2001 and hours of operations for the blast furnace in production year 2000 and 2001.

Data for year 2000:

Pb emission from July 2000 stack test = 0.000588 grains/dscf.

Average airflow recorded during stack testing = 17,619 dscfm

Hours of operation for the blast furnace in year 2000 = 8,126

Therefore, annual Pb emissions in year 2000 =

0.000588 grains/dscf x 17,619 dscfm x 1/7,000 lb/grains x 60 min/hr x 8,126 hours/yr x 1/2,000 lb/ton

=0.36 tons/yr

Data for year 2001:

Pb emission from June 2001 stack test = 0.000135 grains/dscf.

Average airflow recorded during stack testing = 17,624 dscfm

Hours of operation for the blast furnace in year 2000 = 8,128

Therefore, annual Pb emissions in year 2001 =

0.000135 grains/dscf x 17,624 dscfm x 1/7,000 lb/grain x 60 min/hr x 8,128 hours/yr x 1/2000 lb/ton

= 0.083 tons/yr

Therefore two year average Pb emissions from hygiene baghouse =

=(0.036+0.083)/2

= 0.22 tons per year

PM Emissions from Blast Furnace Baghouse:

PM Emissions were based on stack test data for June 2000 and June 2001 and hours of operation for the blast furnace in the year 2000 and 2001.

Data for year 2000:

PM emission from June 2000 stack test = 0.00137 grains/dscf.

Average airflow recorded during stack testing = 17,619 dscfm

Hours of operation for the blast furnace in year 2000 = 8,126

Therefore, annual PM emissions in year 2000 =

0.00137 grains/dscf x 17,619 dscfm x 1/7,000 lb/grains x 60 min/hr x 8,126 hours/yr x 1/2,000 lb/ton

=0.84 tons/yr

Data for year 2001:

PM emission from June 2001 stack test = 0.00138 grains/dscf

Average airflow recorded during stack testing = 17,624 dscfm

Hours of operation for the blast furnace in year 2000 = 8,128

Therefore, annual PM emissions in year 2001 =

0.00138 grains/dscf x 17,624 dscfm x 1/7,000 lb/grain x 60 min/hr x 8,128 hours/yr x 1/2000 lb/ton

= 0.84 tons/yr

Therefore two year average Pb emissions from hygiene baghouse =

=(0.84+0.84)/2

= 0.84 tons per year

VOC emissions from Hygiene Baghouse

VOC emissions were estimated based on the stack test data and hours of operations.

VOC emissions from June 2000 stack test = 0.91 lb/hr

Annual VOC emissions = 0.91 lb/hr x 8,126 hr/yr x 1/2000 lb/ton

= 3.70 ton/yr

VOC emissions from June 2001 stack test = 1.01 lb/hr

Annual VOC emissions = 1.01 lb/hr x 8,128 hr/yr x 1/2000 lb/ton

= 4.1 ton/yr

Therefore, two year average VOC emissions from hygiene baghouse =

=(3.70+4.1)/2

= 3.9 tons per year

3.1.4 Refining Emissions

The Pb and PM emissions from the refining baghouse were estimated using the stack test data for 1999 and 2000. EPC requested the facility's previous refining project be considered in the netting analysis and the whole expansion project treated as one. Hence, the baseline years for refining are 1999 and 2000.

Data for year 1999:

Pb emission from July 1999 stack test =0.00006 grains/dscf.

Average airflow recorded during stack testing = 13,544 dscfm

Hours of operation for the refinery in year 1999 = 6,730

Therefore, annual Pb emissions in year 1999 =

0.00006 grains/dscf x 13,544 dscfm x 1/7,000 lb/grains x 60 min/hr x 6,730 hours/yr x 1/2,000 lb/ton

=0.0234 tons/yr

Data for year 2000:

Pb emission from June 2000 stack test = 0.000042 grains/dscf.

Average airflow recorded during stack testing = 16,161 dscfm

Hours of operation for the refinery in year 2000 = 6,730

Therefore, annual Pb emissions in year 2001 =

0.000042 grains/dscf x 17,624 dscfm x 1/7,000 lb/grain x 60 min/hr x 6,730 hours/yr x 1/2000 lb/ton

= 0.0196 tons/yr

Therefore two year average Pb emissions from refining baghouse =

=(0.0.0234+0.0196)/2

= 0.0215 tons per year

PM Emissions from refining Baghouse:

PM Emissions were based on stack test data for July 1999 and June 2000 and hours of operation for the refinery.

Data for year 1999:

PM emission from July 1999 stack test = 0.00014 grains/dscf.

Average airflow recorded during stack testing = 13,544 dscfm

Hours of operation for the refinery in year1999 = 6,730

Therefore, annual PM emissions in year 1999 =

0.00014 grains/dscf x 13,544 dscfm x 1/7,000 lb/grains x 60 min/hr x 6,730 hours/yr x 1/2,000 lb/ton

=0.055 tons/yr

Data for year 2000:

PM emission from June 2000 stack test = 0.001975 grains/dscf

Average airflow recorded during stack testing = 16,161 dscfm

Hours of operation for the refinery in year 2000 = 6,730

Therefore, annual PM emissions in year 2000 =

0.001975 grains/dscf x 16,161 dscfm x 1/7,000 lb/grain x 60 min/hr x 6,730 hours/yr x 1/2000 lb/ton

= 0.921 tons/yr

Therefore two year average PM emissions from refining baghouse =

=(0.055+0.921)/2

= 0.488 tons per year

Fugitive Pb Emissions from refining building

Fugitive Pb emissions were estimated using AP-42 factor of 0.0006 lb/ton from AP-42, Chapter 12, Table 12.11-4 (1/95) and the corresponding production data for the 1999 and 2000. Control Efficiency is estimated to be 50 % for wet suppression based on Table G-1, from Background document for NESHAP Subpart X EPA 453/R-94-02b, Attachment G, Page D-115.

Fugitive Pb emissions in production year 1999 =

0.0006 lb/ton of lead X 24,170 ton of lead/yr x (1-0.5)

= 7.25 lb of Pb/year.

Fugitive Pb emissions in production year 2000 =

0.0006 lb/ton of lead X 25,184 ton of lead/yr x (1-0.5)

= 7.55 lb of Pb/year.

Average fugitive Pb emissions for 1999 and 2000=

=(7.25+7.55)/2

= 7.4 lb/yr

Fugitive PM Emissions from refining building

Fugitive PM emissions were estimated using AP-42 factor of 0.002 lb/ton from AP-42, Chapter 12, Table 12.11-4 (1/95) and the corresponding production data for the last two years. Control efficiency is estimated to be 50 % for wet suppression based on Table G-1, from Background document for NESHAP Subpart X EPA 453/R-94-02b, Attachment G, Page D-115.

Fugitive PM emissions in production year 1999 =

0.002 lb/ton of Pb X 24,170 ton of lead/yr x (1-0.5)

= 24.17 lb of PM/year.

Fugitive PM emissions in production year 2000 =

0.002 lb/ton of Pb X 25,184 ton of lead/yr x (1-0.05)

= 25.18 lb of PM/year.

Average fugitive PM emissions for 1999 and 2000=

=(24.17+25.18)/2

= 24.67 lb/yr

NO_x emissions from sodium nitrate usage in the refinery

Sodium nitrate is used as a fluxing agent in the refinery operations. Some of the sodium nitrate is converted to NO_x in the presence of heat and air. The NO_x emissions from the refinery are dependent on the amount of sodium nitrate added to the kettles. There are no EPA factors available to determine NO_x emissions from the refining operations. An industry survey was done to research the use of factors by other smelters.

Sanders Lead located in Troy, AL has performed two tests to determine NO_x emission factors for refinery sodium nitrate additions. The results and test data are presented below.

Test 1	1979	0.16 lb of NO_x/lb of $NaNO_3$
Test 2	1999	0.152 lb of NO_x/lb of $NaNO_3$

The worst case factor 0.16 was used in the application and a safety factor of 1.5 was applied to the factor.

Factor used = 0.16 x 1.5 = 0.24 lb of NO_x/lb of $NaNO_3$

This factor was then compared to the data from GNB Vernon, CA facility. The NO_x factor determined by testing and used in the GNB Title V permit application is 0.077 lb of NO_x/lb of $NaNO_3$. Hence, the factor used in this application is conservative compared to other smelters.

Emissions Due to Natural Gas Combustion

The natural gas consumption in the refinery for the baseline years of 1999 and 2000 is as follows:

1999	*13.1 MMCF*
2000	*15.7 MMCF*
Average for two years =	*14.4 MMCF*

Emissions were calculated using emissions factors from AP-42, Supplement D, Table 1.4-1 and Table 1.4-2 Small Boilers - Uncontrolled Emissions (7/1998).

Emissions (tons/yr) = Emissions Factor (lb/MMCF) x Gas Consumed (MMCF/yr) x ton/2000 lbs.

The emission factors and annual emissions are as shown below.

Pollutant	**Emissions Factor (lb/MMCF)**	**Actual Emissions tons/year)**
Carbon Monoxide	84	0.605
Sulfur Dioxide	0.6	0.0043
VOC (as C)	5.5	0.040
Pollutant	**Emissions Factor (lb/MMCF)**	**Actual Emissions tons/year)**
Nitrogen Oxides	100	0.720
PM_{10}	7.6	0.055
PM	7.6	0.055
Lead	0.0005	3.60E-06

3.1.5 Casting Emissions

Fugitive Pb Emissions From Casting Operations:

Fugitive Pb emissions were estimated using the factor of 0.0007 lb/ton from AP-42, Chapter 12, Table 12.11-4 (1/95) and the corresponding production data for the last two years. Control Efficiency is estimated to be 50 % for wet suppression based on Table G-1, from

Background document for NESHAP Subpart X EPA 453/R-94-02b, Attachment G, Page D-115.

Fugitive Pb emissions in production year 1999 =

0.0007 lb/ton of lead x 24,170 ton of lead/yr x (1-0.5)

= 8.46 lb of Pb/year.

Fugitive Pb emissions in production year 2000 =

0.0007 lb/ton of lead x 25,184 ton of lead/yr x (1-0.5)

= 8.81 lb of Pb/year.

Average fugitive Pb emissions for 1999 and 2000=

=(8465+8.81)/2

= 8.64 lb/yr

Fugitive PM Emissions From casting Operations

Fugitive PM emissions were estimated using the factor of 0.002 lb/ton from AP-42, Chapter 12, Table 12.11-4 (1/95) and the corresponding production data for the last two years. Control efficiency is estimated to be 50 % for wet suppression based on Table G-1, from Background document for NESHAP Subpart X EPA 453/R-94-02b, Attachment G, Page D-115.

Fugitive PM emissions in production year 1999 =

0.002 lb/ton of Pb x 24,170 ton of lead/yr x (1-0.5)

= 24.17 lb of PM/year.

Fugitive PM emissions in production year 2000 =

0.002 lb/ton of Pb x 25,184 ton of lead/yr x (1-~~0.95~~) 0.5

= 25.18 lb of PM/year.

Average fugitive PM emissions for 1999 and 2000=

=(24.17+25.18)/2

= 24.68 lb/yr

3.1.6 Soda Ash Silo Emissions

PM emissions from the soda ash silo are estimated using the airflow through the dust collector and a grain loading of 0.011 grains/scfm as required in the current permit.

The PM emissions occur during the unloading of the soda ash truck. Each truck requires two hours to unload. Gulf Coast receives two soda ash deliveries per week.

PM emissions = 800 scfm x 0.011 grains/dscf x 60 min/hr x 2 hr/truck x 2 truck /wk x 52 wk/yr x 1/7000 lb/grains x 1/2000 lb/ton

= 0.01 ton per year

3.1.7 Roadway Fugitive Emissions

Pb emissions from roads were calculated using emission factor provided in Background document for NESHAP Subpart X EPA 453/R-94-02b, Table F-2 Page D- 84, Table F-3, Page D-88 and an actual traffic count study of all vehicle miles conducted by Gulf Coast. The detailed traffic study is presented in **Appendix C**. A summary of the vehicle miles traveled by each category of vehicle and the miles traveled on each segment is presented in Appendix B.

The following emission factors are provided in the MACT background document

For Tractor trailer = 0.105 kg/VKT

$$= \frac{0.105 \text{ kg} \times 1000 \text{ gm/kg}}{1 \text{ km} \times 1/1.6093 \text{ mile/km}}$$

= 168.98 gm/VMT

The weight of the front-end loader was assumed to be the same as the fourteen-wheeler truck.

For Front end loader = 0.097 kg/VKT

$$= \frac{0.097 \text{ kg} \times 1000 \text{ gm/kg}}{1 \text{ km} \times 1/1.6093 \text{ mile/km}}$$

= 156.10 gm/VMT

For Fork lift = 0.037 kg/VKT

$$= \frac{0.037 \text{ kg} \times 1000 \text{ gm/kg}}{1 \text{ km} \times 1/1.6093 \text{ mile/km}}$$

= 59.54 gm/VMT

The vehicle miles traveled for each category was used to calculate emissions from each road segment. A control efficiency factor of 50% for wet suppression based on Table G-1, from Background document for NESHAP Subpart X EPA 453/R-94-02b, Attachment G, Page D-115.

<u>Sample Calculation</u>:

Total miles traveled by a 18 wheeler on east section = 5.83 mile/wk

Area of the east section = 574. 00 m^2

Annual Pb emissions from 18 wheeler travel on east section

= 168.98 gm/VMT x 5.83 miles/wk x 52 wk/yr x (1-0.5) x 1/454 lb/gm

= 56.43 lb/yr

For modeling purposes, the traffic area is divided into three sections (East, West and Center). Emissions were distributed between sections based on the ratio of the surface area when the road travel involves more then one section.

PM emissions were calculated using the AP-42 equation for paved roads AP-42 (10/97 Version) Ch. 13.2.1.

Paved Road Emissions Calculation for Particulate Matter

$$E = k * (sL/2)^{0.65} * (W/3)^{1.5}$$

E = PM-10 emissions factor (lb/VMT)

k = Base emission factor (lb/VMT) - PM-10

sL = Silt loading (g/m2)

W = Mean vehicle weight (tons)

K - used a value of 7.3 g/VMT for PM-10 from AP-42 Table 13.2-1.1 (10/97)

Silt content of 9.7 was used based on AP-42 Chapter 13, Table 13.2.1-3 for Iron and Steel Production.

W= vehicle weight – 23.1 tons for 18 wheeler, 23.1 tons for 14 wheeler, 6.6 tons for front end loader are based on MACT background document for NESHAP Subpart X, EPA 453/R-94-02b, Attachment F, Page D-83, Table F-1.

The detailed emissions calculations from road traffic are presented in Table 8A in Appendix A.

3.2 Validation Of Emission Estimates using Dispersion Modeling

3.2.1 Baseline Modeling

A large portion of the lead emissions from the Gulf Coast facility are fugitive in nature. These fugitive emissions are also a dominating factor in the ambient lead concentrations in the area surrounding the facility. The fugitive emission rates have been derived in the previous section using published EPA emission factors of varying degrees of quality. Being able to accurately estimate fugitive emissions of lead in the future case is a key to reliably assess the ability of the proposed future control strategy to assure ongoing future compliance with the NAAQS for lead.

To test the validity of these fugitive emission factors, and the calculations in the prior section, a dispersion model was developed for the baseline emission case and the modeling results compared with available ambient lead monitoring data from the facility vicinity. Good agreement between this model and the measured concentrations in the area serves to validate the fugitive emission estimation approaches presented in the prior section. Application of these same validated emission factors and calculation approaches to the future case gives support to the reliance that can be placed on modeling of the future case demonstrating ongoing NAAQS compliance.

3.2.2 Model Details

Modeling was performed using EPA's ISCLT3 air dispersion model (version 96113). Building downwash parameters were calculated using EPA's BPIP program (version 95086).

Meteorological data for the years 1987 through 1991 from the Tampa Airport Weather Station No. 12842 were used for surface and upper air parameters. Lead (Pb) emissions estimated in the baseline case and presented in Section 3.1 were used in the modeling.

Stack emissions were modeled as point sources, process fugitives from the manufacturing buildings as volume sources (except for the opening in the furnace building roof which was modeled as a stack type source), and road particulate emissions as area sources.

Additionally, off site sources of Pb emissions as identified in previous modeling of this site were included in the modeling. Sources were included from baghouses at Gulf Coast Metals (GCM), Johnson Controls (JC), Hillsborough County Resource Recovery Facility (HC), and City of Tampa Resource Recovery Facility (TPA). Each of these sources was modeled as a point source. Downwash parameters were included for the GCM sources, which are the closest sources to the GCR facility.

During the period 1998 through June 2002, FDEP operated 4 ambient monitors for Pb concentrations near the GCR facility: No. 12-057-1066, No. 12-057-1073, No. 12-57-1074, and No. 146. The new monitoring network was put in place in 1998 and is considered here. 1997 monitoring data are available for a different set of monitor locations and are not used in this analysis. Station Nos. 1066 and 146 had the highest Pb concentrations and are the closest to the GCR facility. No. 1066 is immediately south of the facility and No. 146 is immediately north of it. Station no. 1073 is approximately 400-m north- northeast of the facility and Station No. 1074 is approximately 1,000 m north of the facility. These more distant stations showed little potential impact from the GCR emissions. Figure 3.1 shows the approximate locations of the monitoring stations and Figure 3.2 summarizes monitored concentrations.

An estimated average background concentration of 0.02 $\mu g/m^3$ and maximum background concentration of 0.05 $\mu g/m^3$ were derived from ambient monitoring data. FDEP Station 139C, which is co-located with Monitoring Station 1066, is automatically activated to collect samples only at times when the wind is blowing from the GCR facility toward the station. Monitoring Station 1074 is located far upwind of the GCR facility at such times. Monitoring data from Station 1074 was evaluated for only those days on which Station 139C was activated. These data were averaged for each quarter during the period 1998 through 2001. The average and maximum quarterly averages for the periods were determined and judged to represent background concentrations.

Background concentrations were added to the modeled impact concentrations and compared with the data from the monitoring stations. Stackpole heights were used in the model to account for the monitor intake heights. Because they are the most affected, the model can be considered "validated" when there is a good agreement between the predicted and measured concentrations at the locations of Monitoring Stations Nos. 146 and 1066.

As discussed previously, published data were not available from which to assign relative fractions of furnace fugitive emissions to the wall openings in the building and the annular opening in the roof (SOO4) around the blast furnace offgas duct. Modeling runs were done at varying proportions between these release points (See Table 3-2) from which it was found that a 50% / 50 % split between then yielded the best agreement with the monitored data.

Table 3-2 presents the results of the modeling of the baseline case in comparison with the ambient monitoring data. Review of the results show that average and peak values for monitoring station 1066 are dominated in the fourth quarter of 2000 and first quarter of 2001. Monitoring results at station 1066 for these two periods appear to be anomalous and not the result of Gulf Coast facility operations. This can be readily seen in Figure 3.2 where these results are clearly outside any reasonable expectation or pattern. As such, it is not appropriate to "force" a model of facility operations to fit outliers.

In contrast Table 3-2 also presents a comparison between the modeling the modeling results and the monitor data when these two anomalous quarters are excluded. The proposed modeled maximum at Station 1066 is almost exactly the highest quarterly average measured at that monitor. The model is overpredicting peak and average values at Station 146.

The degree of agreement can be seen visually by overlaying the sequential model results on the sequential quarterly monitor results for station 1066 and 146 (the closest monitors and those measuring the highest concentrations). Figure 3.3 and 3.4 present such overlays. It is important to note that model is showing seasonal variations in step with the monitor data in addition to the numerical agreement already displayed in Table 3-2 the degree of consistency displayed in Figure 3.4 is also strongly supportive of the position that the station 1066 monitoring results for the fourth quarter of 2000 and first quarter of 2001 are not the result of Gulf Coast Plant operations.

Based on this calibration exercise it is demonstrated that there is a good agreement between the monitor data and predicted modeling impacts. Hence, it can be concluded that the emission estimates in particular fugitive emissions, are an accurate representation of the current emissions.

The basis for fugitive emissions estimation used in the baseline case is used to predict future emissions along with projected stack emissions adjusted for capacity and hours of operations.

Table 3-2. Summary of Model Validation for Existing Emissions

Roof Annulus Scenario	Monitoring Station #	Model 20-Qtr Average (µg/m^3)	Background Pb (µg/m^3)	Predicted Ambient Pb (µg/m^3)	Monitoring 18-Qtr * (1998-02.5) Average (µg/m^3)	Model 20-Qtr Maximum Impact (µg/m^3)	Background Pb (µg/m^3)	Predicted 20-Qtr Maximum Pb Conc. (µg/m^3)	Monitoring 18-Qtr * (1998-02.5) Maximum (µg/m^3)
S004 = 75%	1066	0.38	0.02	0.40	0.63	1.01	0.05	1.06	2.01
S004 = 75%	1073	0.08	0.02	0.10	0.20	0.13	0.05	0.18	0.47
S004 = 75%	1074	0.03	0.02	0.05	0.05	0.07	0.05	0.12	0.20
S004 = 75%	146	0.42	0.02	0.44	0.38	0.87	0.05	0.92	0.70
S004 = 50%	1066	0.41	0.02	0.43	0.63	1.11	0.05	1.16	2.01
S004 = 50%	1073	0.09	0.02	0.11	0.20	0.14	0.05	0.19	0.47
S004 = 50%	1074	0.04	0.02	0.06	0.05	0.07	0.05	0.12	0.20
S004 = 50%	146	0.43	0.02	0.45	0.38	0.91	0.05	0.96	0.70
S004 = 25%	1066	0.45	0.02	0.47	0.63	1.21	0.05	1.26	2.01
S004 = 25%	1073	0.09	0.02	0.11	0.20	0.15	0.05	0.20	0.47
S004 = 25%	1074	0.04	0.02	0.06	0.05	0.08	0.05	0.13	0.20
S004 = 25%	146	0.45	0.02	0.47	0.38	0.95	0.05	1.00	0.70
Validation Excluding 2 Anomalous Monitoring Data **									
S004 = 75%	1066	0.38	0.02	0.40	0.50	1.01	0.05	1.06	1.02
S004 = 75%	1073	0.08	0.02	0.10	0.20	0.13	0.05	0.18	0.47
S004 = 75%	1074	0.03	0.02	0.05	0.05	0.07	0.05	0.12	0.20
S004 = 75%	146	0.42	0.02	0.44	0.38	0.87	0.05	0.92	0.70
S004 = 50%	1066	0.41	0.02	0.43	0.50	1.11	0.05	1.16	1.02
S004 = 50%	1073	0.09	0.02	0.11	0.20	0.14	0.05	0.19	0.47
S004 = 50%	1074	0.04	0.02	0.06	0.05	0.07	0.05	0.12	0.20
S004 = 50%	146	0.43	0.02	0.45	0.38	0.91	0.05	0.96	0.70
S004 = 25%	1066	0.45	0.02	0.47	0.50	1.21	0.05	1.26	1.02
S004 = 25%	1073	0.09	0.02	0.11	0.20	0.15	0.05	0.20	0.47
S004 = 25%	1074	0.04	0.02	0.06	0.05	0.08	0.05	0.13	0.20
S004 = 25%	146	0.45	0.02	0.47	0.38	0.95	0.05	1.00	0.70

Notes:

* For Monitoring Station 1074, no data available for 1st and 2nd Qtr, 2002

** For Monitoring Station 1066, data for 4th Qtr, 2000 and 1st Qtr, 2001 have been excluded as being anomalous

Figure 3-1 Locations of FDEP Ambient Air Quality Monitoring Stations for Lead

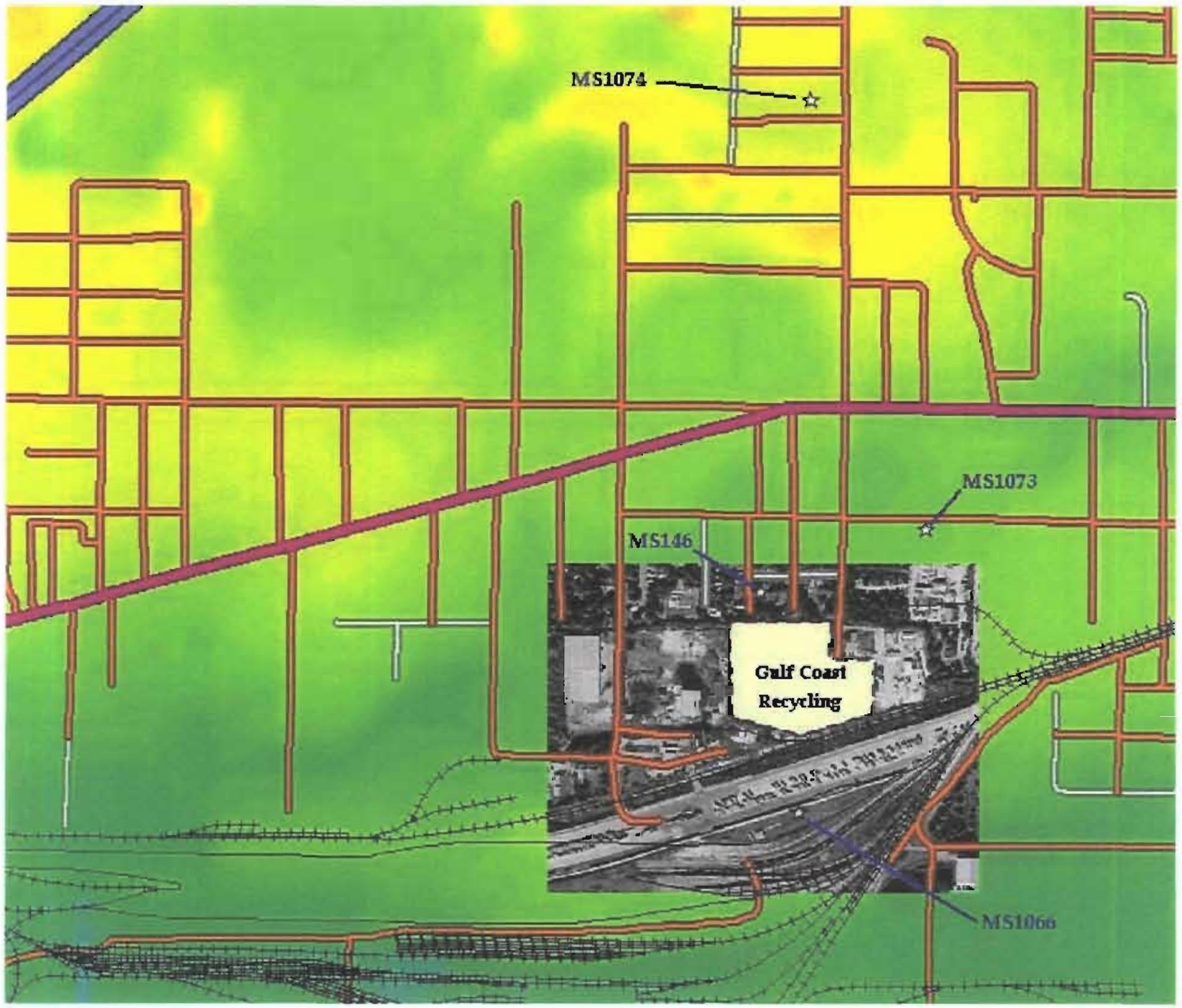


Figure 3-2 FDEP Monitoring Station Data

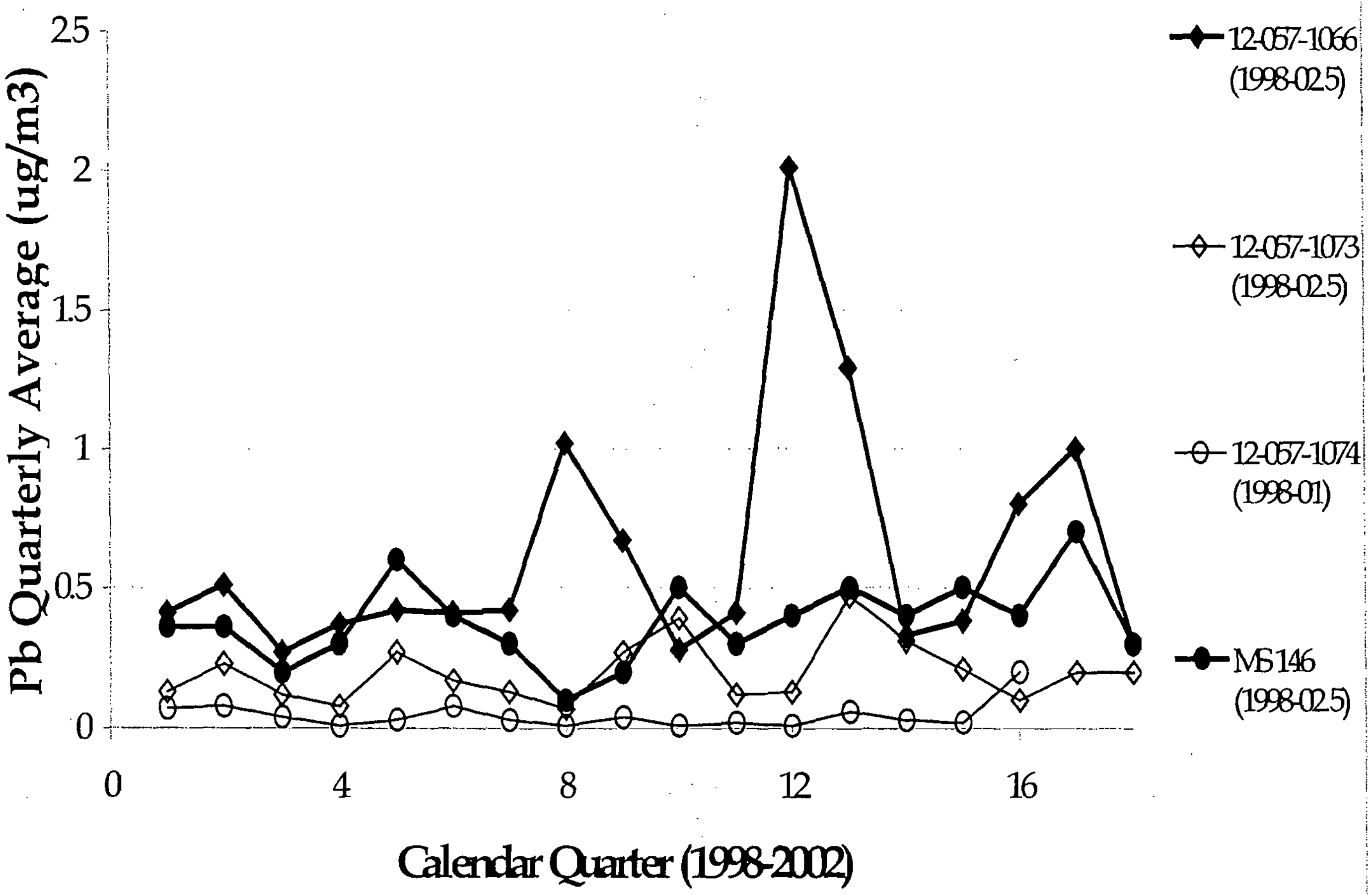


Figure 3-3 Model Validation for Monitroing Station 146

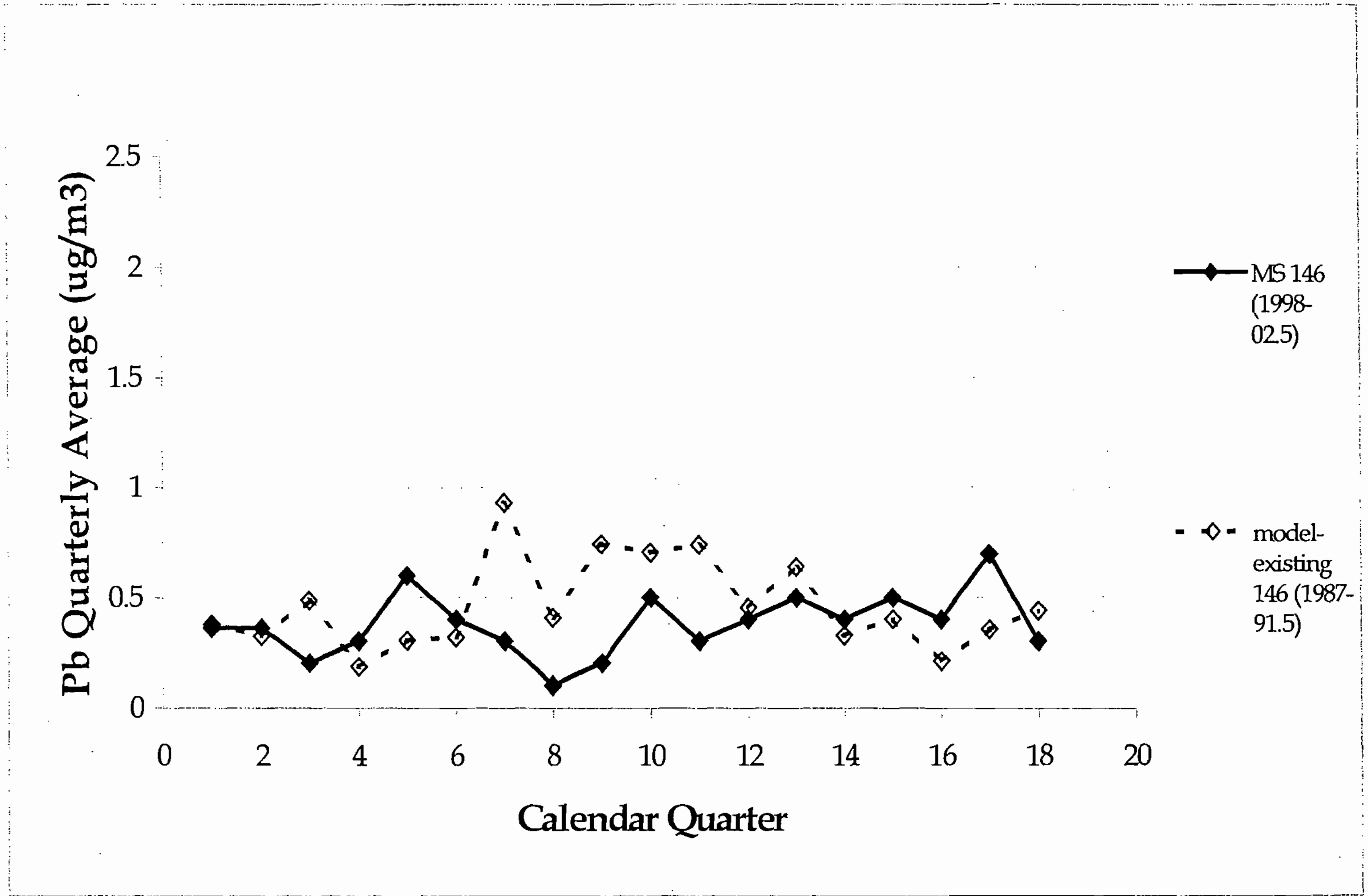
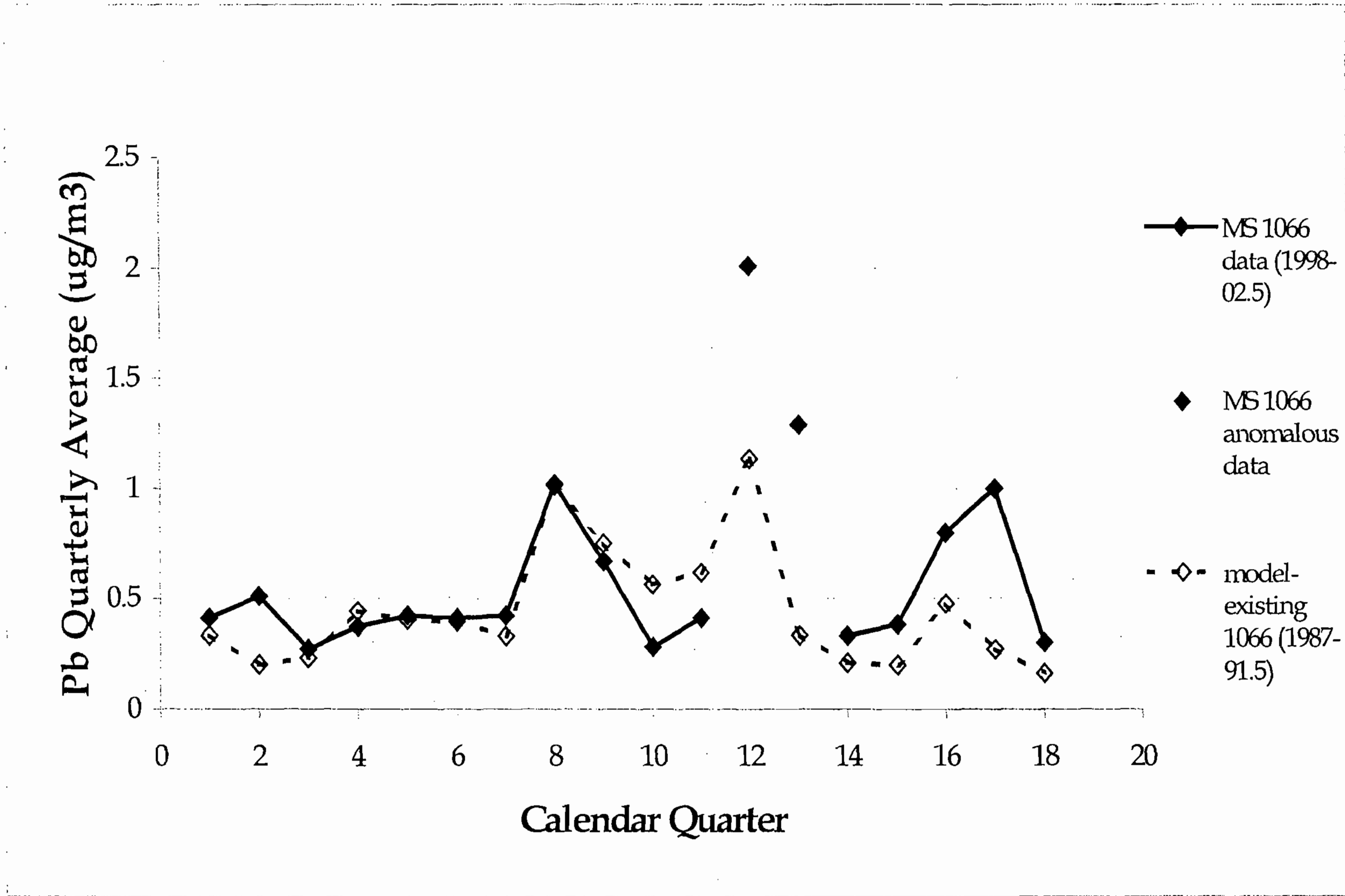


Figure 3-4 Model Validation for Monitroing Station 1066



3.3 Future Potential Emissions

A summary of future potential emissions is provided in **Table 3-3** and detailed calculations are provided in **Appendix B.** Potential emissions are based on the future configuration of the plant. Emissions listed in **Table 3-3** are based on maximum design capacities and hours of operations for each individual unit.

3.3.1 Battery Breaker Building

The emission factor selected in the baseline case for Pb emissions is used along with future capacity and hours of operations. However, a control efficiency of 84.5 % is applied for pressure washing followed by wet suppression as suggested in the MACT Background document for NESHAP, Subpart X, EPA 453/R-94-02b, Attachment G, Page D-115.

In addition, the battery breaker building will be enclosed on three sides to minimize fugitive emissions and a wet scrubber will be installed to ventilate the initial battery crushing process and to minimize acid fumes in the building. However, no credit is taken for lead removal in the scrubber.

Battery Breaker Building

Uncontrolled Potential future Fugitive Pb emissions =

0.0044 lb/ton of lead X 65,000 ton of lead/yr x(1-0.845)

= 44.3 lb of Pb/year.

Pb emissions from the scrubber are estimated based on emissions testing results for the GNB battery facility in Vernon, California, (November 14 and 15, 1990). The average Pb emission rate from the scrubber during the test is 0.0042 lb/hr. This emission rate is based on a scrubber handling the production capacity of 100,000 tons per year of lead. No adjustment is made to this factor in the interest of conservatism.

Pb emissions from the scrubber = 0.0042 lb/hr x 8760 h/yr

= 35.28 lb/yr.

Therefore, fugitive emissions from the battery breaking building =

Total uncontrolled – Scrubber exhaust

= 44.3 - 35.28

= 9.05 lb/yr.

Table 3-3
Summary of Future Potential Emissions

Existing Units	Storage Silos	Battery Breaking	Furnace	Feed Dryer	Upgraded Hygiene baghouse	New Hygiene baghouse	Furnace Building baghouse	Upgraded Refining baghouse	Casting	Road	Total Emissions (TPY)
PM Stack	0.66	0.04	8.64	4.53	3.22	4.03	4.17	5.27			30.57
PM Fug		0.01	0.20					0.01	0.01	0.33	0.56
PM Total	0.66	0.04	8.84	4.53	3.22	4.03	4.17	5.28	0.01	0.33	31.13
PM_{10} Stack	0.66	0.01	8.64	4.53	3.22	4.03	4.17	5.27			30.57
PM_{10} Fug		0.01	0.20		-			0.01	0.01	0.33	0.56
PM_{10} Total	0.66	0.02	8.84	4.53	3.22	4.03	4.17	5.28	0.01	0.33	31.13
SO2 Stack			798.84	0.02				0.07			798.93
SO2 Fug			-								0.00
SO2 Total			798.84	0.02				0.07			798.93
NOx Stack			21.75	3.36				41.04			66.15
NOx Fug			-								0.00
NOx Total			21.75	3.36				41.04			66.15
CO Stack			738.04	2.82				9.27			750.13
CO Fug			-								0.00
CO Total			738.04	2.82				9.27			750.13
VOC Stack			23.78	0.18	10.32			0.61			34.89
VOC Fug			-								0.00
VOC Total			23.78	0.18	10.32			0.61			34.89
Pb Stack		0.02	0.89	0.30	0.03	0.03	0.03	0.20			1.51
Pb Fug		0.005	0.01					0.003	0.004	0.06	0.08
Pb Total		0.02	0.90	0.30	0.03	0.03	0.03	0.20	0.00	0.06	1.59

3.3.2 Furnaces

- The future emissions were calculated based on the total lead production rate of 65,000 tons per year. The reverberatory furnace production was estimated at 45,500 tons of lead per year, and the blast furnace was estimated to have a production rate of 19,500 tons of lead per year.

- Fugitive emissions from the furnaces will be controlled by enclosing the building and venting it to a cartridge type dust collector. Dust collector emissions were estimated based on test data from similar sources and applying a safety factor of 2.

- Gulf Coast is requesting that operating hours for the furnace be restricted to 8,400 hours per year (24 hours/day x 7 days/wk x 50 wk/yr).

- Flue gases from the reverb and blast furnaces will be combined and controlled by a single baghouse of 50,000 acfm capacity. The Pb concentration from the furnace baghouse will not exceed 0.00062 grains/dscf.

Pb Emissions from Furnace Baghouse:

Lead Emissions were based on a combined airflow from the two furnaces of 50,000 acfm (3 % moisture and 200 Degree F) and 8400 hours of operation.

Air flow (dscfm) = 50,000 acfm x (1-0.03) x (460+68)/(460+180)

=40,013 dscfm.

Pb emission from furnace baghouse = 0.00062 grains/dscf.

Therefore, annual Pb emissions =

0.00062 grains/dscf x40,013 dscfm x 1/7,000 lb/grains x 60 min/hr x 8,400 hours/yr x 1/2,000 lb/ton

=0.89 tons/yr

PM Emissions from Furnace Baghouse:

The PM limit from the baghouse will not exceed 0.006 grains/dscf.

PM emission from furnace baghouse = 0.006 grains/dscf.

Therefore, annual PM emissions =

0.006 grains/dscf x 40,013 dscfm x 1/7,000 lb/grains x 60 min/hr x 8,400 hours/yr x 1/2,000 lb/ton

=8.64 tons/yr

CO, VOC and SO2 emissions from blast furnace baghouse

Future CO emissions were estimated based on 99 tons plus current baseline emissions.

Baseline emissions for CO are 651.13 tons.

Future plant wide total Co emissions = 651.13 +99 = 750.13 ton

Allowing 2.82 tons for Dryer and 9.27 tons for refining kettles would allow CO emissions from the furnace

=750.13- 2.82- 9.27

= 738.04 tons

Hourly CO emissions = 738.04 ton/yr x 2000 lb/ton/ x 1/8,400 hr/yr

= 175.72 lb/hr

VOC emissions were estimated based on the MACT requirement [40 CFR 63.543(c)] of 20 ppm of VOC (expressed as propane corrected to 4 % oxygen) for collocated blast furnace and reverberatory furnace.

Airflow from the furnace baghouse = 50,000 acfm @ 180 F.

Air flow (scfm) = 50,000 acfm x (460+68)/(460+180)

=41,250 scfm.

Hourly VOC emissions

= 20 ppmc x 41,250 scfm x 60 (min/hr) x 44.1 (lb/lb mole) /385.6 (ft3/lb mole) x 10^6

= 5.66 lb/hr

Future SO_2 emissions were estimated based on 39 tons plus current baseline emissions.

Baseline emissions for SO_2 is 759.91 tons.

Future plant wide total SO_2 emissions = 759.91+ 39 = 798.91 ton

Allowing 0.02 tons for Dryer and 0.07tons for refining kettles would allow

=798.91- 0.02- 0.07

= 798.82 tons *SO_2 emissions from the furnace*

Hourly SO_2 emissions = 798.82 ton/yr x 2000 lb/ton/ x 1/8,400 hr/yr

= 190.2 lb/hr

NOx emissions from furnace baghouse

The NO_x emissions were based on the past actual plus 39 tons per year of increase.

Future NOx emissions were estimated based on 39 tons plus current baseline emissions.

Baseline emissions for NOx is 27.15 tons.

Future plant wide total NOx emissions = 27.15+ 39 = 66.15 ton

Allowing 3.36 tons for Dryer and 41.04 tons for refining kettles would allow

=66.15- 3.36-41.04

= 21.75 tons *NOx emissions from the furnaces*

Hourly NOx emissions = 21.75 ton/yr x 2000 lb/ton/ x 1/8,400 hr/yr

= 5.18 lb/hr

These projected future emissions of NO_x (21.75 tons) from furnace operations were then compared to emissions calculated using AP-42 factors. The AP-42 factors represent emissions from the boiler. However, the furnaces operate slightly differently than a boiler, and generally results in higher NO_x emissions.

Emissions were calculated using emissions factors are from AP-42, Supplement D, Table 1.4-1 and Table 1.4-2 Small Boilers - Uncontrolled Emissions (7/1998). The NOx emission from the reverberatory furnace is based on the burner size of 20 MM Btu/hr and annual hours of operation of 8400 hours. The NOx emission from the blast furnace is based on the annual gas consumption of 50 MMCF.

The NO_x emissions calculated based on the above consumption and AP-42 factors are 10.90 tons per year. Hence, an additional 10.85 tons were added (10.85+9.85 = 21.7) to account for difference in NO_x emissions from the boilers and furnaces and still keep future increases below 40 tons per year threshold for PSD avoidance.

Pb Emissions from Furnace Building Cartridge Collector:

The building will be completely enclosed and vented to a cartridge collector of 25,000 acfm capacity. Building cartridge collector emissions are based on source test report for NESHAP compliance for GNB Technologies, Vernon, CA, August 19, 1998. The highest emissions from the test result are 0.00002 gr/dscf. A safety factor of 2 was applied to this concentration yielding the final collector outlet Pb concentration of 0.00004 gr/dscf.

Lead Emissions were based on airflow of 25,000 acfm (1.7- % moisture and 100 Degree F) and 8400 hours of operation.

Air flow (dscfm) = 25,000 acfm x (1-0.017) x (460+68)/(460+100)

=23,171 dscfm.

Pb emission from furnace building collector = 0.000040 grains/dscf.

Therefore, annual Pb emissions =

0.000040 grains/dscf x 23,171dscfm x 1/7,000 lb/grains x 60 min/hr x 8,400 hours/yr x 1/2,000 lb/ton

= 0.033 ton/yr

PM Emissions from furnace building cartridge collector:

The PM emissions from the outlet of the furnace building collector will not exceed 0.005 grains/dscf.

PM emission from furnace building baghouse = 0.005 grains/dscf.

Therefore, annual PM emissions =

0.005 grains/dscf x 23,171dscfm x 1/7,000 lb/grains x 60 min/hr x 8,400 hours/yr x 1/2,000 lb/ton

= 4.17 tons/yr

3.3.3 Emissions from upgraded blast furnace hygiene baghouse

A bank of HEPA filters will be installed on the outlets of the hygiene baghouse. The Pb concentration in the baghouse exhaust would not exceed 0.000040 grains/dscf.

Pb Emissions from upgraded hygiene baghouse:

Pb emission from baghouse = 0.000040 grains/dscf.

Lead Emissions were based on airflow of 20,000 acfm (1.7% moisture and 120 Degree F) and 8400 hours of operation.

Air flow (dscfm) = 20,000 acfm x (1-0.017) x (460+68)/(460+120)

=17,897 dscfm.

Pb emission from existing hygiene baghouse = 0.000040 grains/dscf.

Therefore, annual Pb emissions =

0.000040 grains/dscf x 17,897 dscfm x 1/7,000 lb/grains x 60 min/hr x 8,400 hours/yr x 1/2,000 lb/ton

= 0.026 ton/yr

PM Emissions from upgraded hygiene baghouse:

The PM emissions from the outlet of the upgraded hygiene baghouse will not exceed 0.005 grains/dscf.

PM emission from existing hygiene baghouse =0.005 grains/dscf.

Therefore, annual PM emissions =

0.005 grains/dscf x 17,897 dscfm x 1/7,000 lb/grains x 60 min/hr x 8,400 hours/yr x 1/2,000 lb/ton

= 3.22 tons/yr

VOC emissions from existing hygiene baghouse

VOC emissions were estimated based on the MACT requirement [40 CFR 63.543(g)] of 20 ppm of VOC (expressed as propane corrected to 4 % oxygen) for blast furnace charging hoods that are not blended with the blast furnace exhaust.

Annual VOC emissions

= 20 ppmc x 17,897 scfm x 60 (min/hr) x 44.1 (lb/lb mole) /385.6 (ft3 /lb mole) x 10^6

= 10.32 ton/yr

3.3.4 Emissions from new hygiene baghouse

A new hygiene baghouse will be installed to control tapping and charging emissions from the reverberatory furnace. A bank of HEPA filters will be installed on the outlets of the new hygiene baghouse. The Pb concentration in the baghouse exhaust will not exceed 0.000040 grains/dscf.

Pb Emissions from new hygiene Baghouse:

Pb emission from baghouse = 0.000040 grains/dscf.

Lead Emissions were based on airflow of 25,000 acfm (1.7% moisture and 120 Degree F) and 8400 hours of operation.

Air flow (dscfm) = 25,000 acfm x (1-0.017) x (460+68)/(460+120)

=22,372 dscfm.

Pb emission from new hygiene baghouse = 0.000040 grains/dscf.

Therefore, annual Pb emissions =

0.000040 grains/dscf x 22,372dscfm x 1/7,000 lb/grains x 60 min/hr x 8,400 hours/yr x 1/2,000 lb/ton

= 0.032 ton/yr

PM emissions from new hygiene baghouse:

The PM emissions from the outlet of the new hygiene baghouse will not exceed 0.005 grains/dscf.

PM emission from new hygiene baghouse = 0.005 grains/dscf.

Therefore, annual PM emissions =

0.005 grains/dscf x 22,372dscfm x 1/7,000 lb/grains x 60 min/hr x 8,400 hours/yr x 1/2,000 lb/ton

= 4.03 tons/yr

3.3.5 Refining Emissions

- Both the refining building and the refinery warehouse will be enclosed on three sides (North side will be left open).
- The Pb concentration at the outlet of refining baghouse will not exceed 0.0002 grains/dscf (RACT limits).
- The sodium nitrate usage in the refinery will not exceed 250,0000 lb/yr.
- The total lead production will be 65,000 tons per year.

Pb emissions from refining baghouse

Pb emission from baghouse =0.0002 grains/dscf.

Airflow of the refinery baghouse = 26,846 dscfm

Hours of operation for the refinery = 8,760

Therefore, annual Pb emissions =

0.0002 grains/dscf x 26,846 dscfm x 1/7,000 lb/grains x 60 min/hr x 8,760 hours/yr x 1/2,000 lb/ton

=0.202 tons/yr

PM Emissions from refining Baghouse:

PM emission from baghouse = 0.0044 grains/dscf.

Airflow from baghouse = 26,846 dscfm

Hours of operation for the refinery = 8,760

Therefore, annual Pb emissions in year 2000 =

0.0044 grains/dscf x 26,846 dscfm x 1/7,000 lb/grains x 60 min/hr x 8,760 hours/yr x 1/2,000 lb/ton

=4.43 tons/yr

Fugitive Pb Emissions from refining building

Fugitive Pb emissions were estimated using AP-42 factor of 0.0006 lb/ton from AP-42, Chapter 12, Table 12.11-4 (1/95) and the future production data. Control Efficiency is estimated to be 84.5 % for pressure washing and wet suppression based on Table G-1, from the Background document for NESHAP Subpart X EPA 453/R-94-02b, Attachment G, Page D-115.

Fugitive Pb emissions = 0.0006 lb/ton of lead X 65,000 ton of lead/yr x (1-0.845)

= 6.05 lb of Pb/year.

Fugitive PM Emissions from refining building

Fugitive PM emissions were estimated using AP-42 factor of 0.002 lb/ton from AP-42, Chapter 12, Table 12.11-4 (1/95) and the corresponding production data for the last two years. Control efficiency is estimated to be 84.5% for pressure washing and wet suppression based on Table G-1, from Background document for NESHAP Subpart X EPA 453/R-94-02b, Attachment G, Page D-115.

Fugitive PM emissions = 0.002 lb/ton of Pb x 65,000 ton of lead/yr x (1-0.845)

= 20.15 lb of PM/year.

NO_x emissions from sodium nitrate usage in the refinery

Factor used = 0.24 lb of NO_x/lb of $NaNO_3$

NO_x emissions = 0.24 lb of NO_x/lb of $NaNO_3$ x 250,000 lb of $NaNO_3$ /yr x 1/2000 lb/ton

=30 ton/yr

Emissions due to Natural Gas Combustion

The natural gas consumption for the six refining kettles in the refinery at a rated capacity of 4.6 MM Btu/hr and 8760 hours of operation would be

=6 x 4.6 x 10^ 6 Btu/hr x 1/1000 btu/ft3 x 8760 hr/yr

=220.75 MMCF/yr

Emissions were calculated using emissions factors are from AP-42, Supplement D, Table 1.4-1 and Table 1.4-2 Small Boilers - Uncontrolled Emissions (7/1998).

Emissions (tons/yr) = Emissions Factor (lb/MMCF) x Gas Consumed (MMCF/yr) x ton/2000 lbs.

Pollutant	Emissions Factor (lb/MMCF)	Potential Emissions tons/year)
Carbon Monoxide	84	9.272
Sulfur Dioxide	0.6	0.0662
VOC (as C1)	5.5	0.607
Nitrogen Oxides	100	11.038
PM_{10}	7.6	0.839
PM	7.6	0.839
Lead	0.0005	5.52E-05

3.3.6 Roadway Fugitive Emissions

The current location of the truck weigh scale (south side of the plant near the furnace building) requires vehicles to travel through the plant both before and after unloading. Future plans call for relocating the scale closer to the gate and changing the plant entrance to reduce or eliminate much of the in plant traffic. The future traffic pattern and the distance associated with each vehicle category is provided in detail in Appendix C and the summary is provided in Table 8-b in Appendix B.

Potential Pb and PM emissions from the in plant vehicle traffic are estimated using the same emissions factors used in the baseline case. A control efficiency of 84.5% percent was used for power washing followed by wet suppression, as suggested in the Subpart X background document for NESHAP Subpart X, Table G-1, Page D-115.

3.3.7 New Soda Ash Silo Emissions

An existing unused cement silo will be use to store the soda ash necessary for the sulfur dioxide control system. A draft construction permit has been issued approving this change. Emissions from soda ash silo are estimated using the airflow through the dust collector and a grain loading of 0.011 grains/scfm. The PM loading is assumed to be same as the existing silo. Worst case PM emissions from the silo are

= *800 scfm x 0.011 grains/dscf x 60 min/hr x 8,760 hr/yr x 1/7000 lb/grains x 1/2000 lb/ton*

= *0.33 ton per year*

3.4 Net Emissions Increase

To determine PSD applicability, an analysis of the net emissions change from the plant to reflect the maximum production associated with the proposed project must be performed. If the net emissions increase for a pollutant is greater than the threshold emission rates defined in PSD regulations, then a PSD review is required. These significant emission rate increases are outlined in **Table 3-4**.

The net emissions increase for a pollutant is calculated as the difference between the future potential emissions and the past actual emissions.

The summary of net emission changes is shown in **Table 3-4**. As the table indicates, the plant is currently a major stationary source (criteria pollutant emissions greater than 100 tpy). Based upon the discussions and calculations presented in this application package, there will be no significant increase in criteria pollutant emissions from the proposed changes, as defined in PSD regulations. Hence, PSD review is not required.

Table 3-4
Summary of Actual and Potential Emissions for PSD Applicability

Emission Unit	POLLUTANTS (tpy)					
	PM_{10}/PM	SO_2	NO_x	CO	VOC	Pb
CURRENT ACTUAL EMISSION						
Storage Silo	0.01					
Battery Breaking Fugitives	0.11					0.06
Blast Furnace Stack	1.53	759.91	1.64	650.52	67.73	0.07
Blast furnace Fugitive	15.38					0.38
Existing Hygiene Stack	0.84				3.90	0.22
Refining baghouse Stack	0.54	0.004	25.51	0.60	0.04	0.02
Refining Fugitives	0.01					0.004
Casting Fugitives	0.01					0.004
Road Fugitives	0.70					0.28
Total	19.14	759.91	27.15	651.13	71.67	1.05
FUTURE POTENTIAL EMISSIONS						
Storage Silo	0.66					
Battery Breaking Fugitives	0.01					0.005
Battery Breaking Scrubber	0.04					0.02
Blast/Reverb Furnace	8.64	798.84	21.75	738.04	23.78	0.89
Furnace Fugitives	0.20					0.01
Feed Dryer Baghouse	4.53	0.02	3.36	2.82	0.18	0.30
Upgraded Hygiene Stack	3.22				10.32	0.03
New Hygiene Stack	4.03					0.03
Furnace Building Baghouse	4.17					0.03
Upgraded Refining Baghouse	5.27	0.07	41.04	9.27	0.61	0.20
Refining Fugitives	0.01					0.003
Casting Fugitives	0.01					0.004
Road Fugitives	0.33					0.06
Total	31.34	798.93	66.15	750.13	34.89	1.59
Net Emission Increase/Decrease	+12.20	+39.02	+39.00	+99	-36.78	+0.54
PSD Threshold	15/25	40	40	100	40	0.60
Triggers PSD	NO	NO	NO	NO	NO	NO

Section 4
Applicable Regulations

Gulf Coast is located in Hillsborough County, which is designated as an attainment area or unclassified area for all criteria pollutants. The following Federal and State regulations were reviewed for their applicability to Gulf Coast.

- New Source Performance Standards (NSPS)
- National Emission Standards for Hazardous Air Pollutants (NESHAP)
- National Ambient Air Quality Standards (NAAQS)
- Florida Administrative Codes
- Rules of the Environmental Protection Commission of the Hillsborough County

4.1 National Ambient Air Quality Standards (NAAQS)

The future potential emissions of Pb as summarized in Table 3-3 was modeled to demonstrate compliance with NAAQS limit of 1.5 ug/m3 for Pb. The stack emissions are based on acceptable limits and the fugitive road emissions are based on the emission factors validated using the dispersion modeling and ambient monitoring data.

The detail modeling analysis is provided in Appendix F. As seen from the modeling result provided in Table 4-1 NAAQS standards for Pb would not be exceeded in the future case. The worst case predicted impact is 1.03 ug/m3 compared to the NAAQS for Pb of 1.5 ug/m3. Hence, it can be concluded that the facility will continue to demonstrate compliance with the NAAQS with future expansion in place.

4.2 NSPS for Secondary Lead Smelting (40 CFR 60.122, Subpart L)

The NSPS for secondary lead smelters sets the standards for particulate matter and opacity, which reads as follows:

a. On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from a blast (cupola) or reverberatory furnace any gases which:

   (1) Contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

   (2) Exhibit 20 percent opacity or greater.

Table 4-1 Summary of Impacts of Proposed Future Emissions

Quarter	Predicted Maximum Quarterly Lead Impact ($\mu g/m^3$)				
	Meteorological Data Year				
	1987	1988	1989	1990	1991
1	0.741	0.459	0.976	0.793	0.669
2	0.678	0.834	0.963	0.673	0.737
3	0.719	0.830	0.847	0.706	0.811
4	0.529	0.745	0.762	0.700	0.632
20-Qtr Period	Maximum Quarterly Impact =				0.98
	Background Concentration =				0.05
	Predicted Maximum Quaterly Ambient Concentration =				1.03

b. On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any pot furnace any gases which exhibit 10 percent opacity or greater.

Compliance with NSPS

The permit limit requested for PM emissions from the furnace baghouse is 0.006 grains/dscf and an opacity limit of 20 percent. Hence, Gulf Coast will comply with the NSPS emissions standards.

4.3 NESHAP for Secondary Lead Smelting (40 CFR 63.543, 63.544, 64.545, Subpart X)

The NESHAP for secondary lead smelters sets standards for lead and hydrocarbon emissions from process and fugitive sources as described below:

40 CFR 63.543 Standards for process sources.

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).

b. No owner or operator of a secondary lead smelter with a collocated blast furnace and reverberatory furnace shall discharge or cause to be discharged into the atmosphere from any existing, new, or reconstructed blast furnace or reverberatory furnace any gases that contain total hydrocarbons in excess of 20 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide, except as allowed under paragraphs (c)(1) and (c)(2) of this section.

c. No owner or operator of a secondary lead smelter with a collocated blast furnace and reverberatory furnace shall discharge or cause to be discharged into the atmosphere from any existing blast furnace any gases that contain total hydrocarbons in excess of 360 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide, during periods when the reverberatory furnace is not operating.

d. If the owner or operator of a blast furnace or a collocated blast and reverberatory furnace does not combine the blast furnace charging process fugitive emissions with the blast furnace process emissions and discharges such emissions to the atmosphere through separate emission points, then the total hydrocarbon emission rate for the blast furnace process fugitive emissions shall not contain total hydrocarbon in excess of 20 parts per million by volume, expressed as propane corrected to 4 percent carbon dioxide.

Compliance with NESHAP

The requested permit limits are as follows to comply with the above NESHAP requirements:

- Pb emissions at the outlet of the furnace baghouse = 0.00062 grains/dscf
- Pb emissions at the outlet of the new and existing hygiene baghouse (after HEAP filters)

  = 0.00004 grains/dscf
- Total hydrocarbon emissions from furnace baghouse when both furnaces are operating

  = 20 ppm (5.66 lb/hr)
- Total hydrocarbon emissions from existing hygiene baghouse for blast furnace

  = 20 ppm (2.45 lb/hr)

40 CFR 63.544 Standards for process fugitive sources

a. Each owner or operator of a secondary lead smelter shall control the process fugitive emission sources listed in paragraph (a)(1) through (a)(6) of this section by complying with either paragraph (b) or (c) of this section.
   1. Smelting furnace and dryer charging hoppers, chutes, and skip hoists;
   2. Smelting furnace lead taps and molds;
   3. Smelting furnace slag taps and molds;
   4. Refining kettles;
   5. Dryer transition pieces; and
   6. Agglomerating furnace product taps.

b. Process fugitive emission sources shall be equipped with an enclosure hood meeting the requirements of paragraphs (b)(1), (b)(2), or (b)(3) of this section, or be located in a total enclosure subject to general ventilation that maintains the building at al lower than ambient pressure to ensure indraft through any doorway opening.

   (1) All process fugitive enclosure hoods except those specified for refining kettles and dryer transition pieces shall be ventilated to maintain a face velocity of at least 90 meters per minute (300 feet per minute) at all hood openings.

   (2) Process fugitive enclosure hoods required for refining kettles in paragraph (a) of this section shall be ventilated to maintain a face velocity of at least 75 meters per minute (250 feet per minute).

(3) Process fugitive enclosure hoods required over dryer transition pieces in paragraph (a) of this section shall be ventilated to maintain a face velocity of at least 110 meters per minute (350 feet per minute).

Compliance with Standards

The following permit limits are requested to show compliance with the above requirements:

Hoods for furnace charging and tapping will maintain a face velocity of 300 feet per minute at all hood openings

Hoods for refining kettles will maintain a face velocity of 250 feet per minute at all hood openings.

Hoods over dryer transition pieces will maintain a face velocity of 350 feet per minute.

(c) 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).

Compliance with Standard

The requested permit limits for different baghouses that control the hood exhaust and the furnace building exhaust are as listed below:

Pb emission limit from the hygiene baghouse is 0.00004 grains/dscf.

Pb emissions limit from the furnace building collector is 0.00004 grain/dscf.

Pb emission limit from refinery baghouse is 0.0002 grains/dscf.

Hence, all the baghouse will comply with the required Pb emission limit of 0.00087 grains/dscf.

(d) All dryer emission vents and agglomerating furnace emission vents shall be ventilated to a control device that shall not discharge to the atmosphere any gases that contain lead compounds in excess of 2.0 milligrams of lead per dry standard cubic meter (0.00087 grains per dry standard cubic foot).

Compliance with Standard

The Agglomerating furnace was dismantled and replaced with a dust slurry system in February 2001.

The requested permit limit from the dryer baghouse is 0.0004 grains/dscf. Hence, it will comply with the limit of 0.00087 grains/dscf.

40 CFR. 63.545 Standards for fugitive dust sources.

a. Each owner or operator of a secondary lead smelter shall prepare and at all times operate according to a standard operating procedures manual that describes in detail the measures that will be put in place to control fugitive dust emission sources within the areas of the secondary lead smelter listed in paragraphs (a)(1) through (a)(5) of this section.

   1. Plant roadways;
   2. Battery breaking area;
   3. Furnace area;
   4. Refining and casting area; and
   5. Materials storage and handling area.

b. The standard operating procedures manual shall be submitted to the Administrator or delegated authority for review and approval.

<u>Compliance with Standard</u>

- The existing standard operating procedure manual (SOP) is attached in Appendix D. The SOP will be revised upon the completion of civil design aspect and equipment procurement and submitted to EPC prior to start up.

c. The controls specified in the standard operating procedures manual shall at a minimum include the requirements of paragraph (c)(1) through (c)(5) of this section.

   1. Plant roadways--paving of all areas subject to vehicle traffic and pavement cleaning twice per day of those areas, except on days when natural precipitation makes cleaning unnecessary or when sand or a similar material has been spread on plant roadways to provide traction on ice or snow.

   <u>Compliance with Standard</u>

   - The plant roadways are paved, wetted by sprinklers on timers as per the schedule outlined in the SOP, and will be pressure washed periodically when build up is observed.

   2. Battery breaking area--partial enclosure of storage piles, wet suppression applied to storage piles with sufficient frequency and quantity to prevent the formation of dust, and pavement cleaning twice per day or total enclosure of the battery breaking area.

   <u>Compliance with Standard</u>

- The battery breaking area will be enclosed from three sides and the battery breaking area floors will be cleaned twice per day as outlined in SOP.

3. Furnace area--partial enclosure and pavement cleaning twice per day; or total enclosure and ventilation of the enclosure to a control device.

Compliance with Standard

- The furnace building will be completely enclosed and vented to a cartridge type dust collector.

4. Refining and casting area--partial enclosure and pavement cleaning twice per day; or total enclosure and ventilation of the enclosure to a control device.

Compliance with Standard

- The refining building will be enclosed from three sides and the floors will be cleaned twice per day as outlined in the SOP.

5. Materials storage and handling area--partial enclosure of storage piles, wet suppression applied to storage piles with sufficient frequency and quantity to prevent the formation of dust, vehicle wash at each exit from the area, and paving of the area; or total enclosure and ventilation of the enclosure to a control device and a vehicle wash at each exit.

Compliance with Standard

- The material storage building is completely enclosed except for the access doors. The material storage piles are watered periodically for dust suppression as outlined in SOP.

d. The standard operating procedures manual shall require that daily records be maintained of all wet suppression, pavement cleaning, and vehicle washing activities performed to control fugitive dust emissions.

Compliance with Standard

- The existing standard operating procedure manual (SOP) is attached in Appendix D. The SOP will be revised upon the completion of civil design aspect and equipment procurement and submitted to EPC prior to start up.

e. No owner or operator of a secondary lead smelter shall discharge or cause to be discharged into the atmosphere from any building or enclosure ventilation system 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).

Compliance with Standard

- The requested permit limit restricting Pb emissions from the furnace building ventilation baghouse is 0.00004 grain/dscf is below the 0.00087 grains/dscf

4.4 Florida Administrative Code 62- 296.600 Reasonably Available Control Technology (RACT) - Lead

Lead processing operations subject to the requirements of this rule shall comply with the permit requirements, operation and maintenance plan requirements, recordkeeping and reporting requirements, and compliance demonstration requirements of Rules 62- 296. 600(3) through 62-296.600(6), F. A. C., respectively, the general requirements of Rule 62- 296.601, F. A. C., and the specific emission limiting standards of Rules 62- 296.602 through 62- 296. 605, F. A. C

Operation and Maintenance Plan. In any application for a permit, the owner or operator of any facility subject to the requirements of this rule shall submit to the Department an operation and maintenance plan for the lead emissions control devices, collection systems, and processing systems. The operation and maintenance plan shall include quarterly inspection methods for the lead emissions control devices, including black light leak detection tests or broken bag detectors in the baghouses, to prevent reduced lead collection efficiency.

- All the Pb controlling baghouses are equipped with broken bag detectors. A SOP describing the operation and maintenance plan for the existing baghouse is provided in Appendix D. The SOP will be revised upon the completion of civil design aspect and equipment procurement and submitted to EPC prior to start up.

Recordkeeping and Reporting. The owner or operator of any facility subject to the requirements of this rule shall keep the following records for a minimum of two years, and make them available to any representative of the Department or an approved local air program upon request.

- The records are kept on site and available to the agencies.

4.5 Florida Administrative Code 62- 296.601 Lead Processing Operations in General

a. No owner or operator of a lead processing operation shall cause, allow, or permit the emissions of lead, including emissions of lead from vehicular movement, transportation of materials, construction, alteration, demolition or wrecking, or industrially- related activities such as loading, unloading, charging, melting, tapping, casting, storing or handling, unless reasonably available control technology is employed to control such lead emissions.

The existing standard operating procedure manual (SOP) is attached in Appendix D. The SOP will be revised upon the completion of civil design aspect and equipment procurement and submitted to EPC prior to start up.

4.6 Florida Administrative Code 62- 296.603 Secondary Lead Smelting Operations

No owner or operator of a secondary lead smelting operation subject to Rule shall cause, allow, or permit the discharge into the atmosphere of lead in excess of the following emission standards, in grains of lead per dry standard cubic foot, nor shall visible emissions exceed the following standards, in percent opacity:

a. Blast and slag furnaces: 0.010 grains and 3% opacity at the exit point of the emissions control device.
b. Blast furnace charging: 0.002 grains and 3% opacity at the exit point of the emissions control device.
c. Visible emissions from the closed charge doors on the blast furnace shall not exceed 3% opacity during furnace operation.
d. Visible emissions from the charge doors on the blast furnace shall not exceed 6% opacity during charging operation.
e. Blast and slag furnaces, slag and product tapping: 0. 002 grains and 3% opacity at the exit point of the emissions control device.
f. Melt kettles and pot furnaces: 0.0002 grains and 3% opacity.
g. Battery cracking operations: 3% opacity.
h. Slag handling and processing operations: 0.0003 grains and 3% opacity.

Collection systems representing RACT shall be installed and operated to capture, contain, and control lead emissions resulting from the storage, transport, and processing of all lead- bearing materials and products at secondary lead smelting operations. No lead emissions shall be vented to the outside of any enclosed or partially enclosed process unless RACT is employed to control such emissions.

Compliance with Standard

The requested Pb emission limits for all baghouses are in compliance with the above standards. The fugitive emissions will be minimized by:

- Enclosing the furnace building and venting it to a dust collector
- Installing hoods to capture tapping and charging emissions and venting them to a baghouse
- Installing hoods over refining kettles and venting them to a baghouse
- Partially enclosing the refining building and floor cleaning twice per day
- Partially enclosing the battery breaker building and floor cleaning twice per day
- Enclosing the material storage building and periodically wetting the storage piles
- Installing a scrubber to minimize acid mist emissions from the battery breaking operations
- Paving all plant roads, wetting the roads and, periodically pressure washing when build up is observed.
- Relocating the entrance and the plant scale to reduce vehicle miles

4.7 Emissions Limits

Gulf Coast is required to demonstrate compliance with appropriate NSPS and NESHAP limits for individual sources. In addition, the future total Pb emissions from the facility should not exceed 1.59 tons per year as shown in netting analysis (Table 3-4) demonstrating PSD avoidance.

Gulf Coast's lead emitting sources are currently required to be tested annually. Gulf Coast is requesting a plant-wide limit for lead be established by combining individual stack limits. This approach will assure that total lead emissions from the stacks reflected in this permit application for PSD avoidance are not exceeded and provide some operating flexibility to the plant. Compliance with the plant-wide limit will be demonstrated by performing annual testing of these sources in a single test campaign.

Source	Pollutant	Requested Limit for PSD Avoidance	Place of Testing or Method of Compliance
Battery Breaking Scrubber	PM and Pb	Pb =35.2 lb/yr PM = 70.56 lb/yr	• Scrubber outlet
Dryer	PM and Pb	Pb =0.0004 gr/dscf PM =0.006 gr/dscf	• Outlet of Dryer Baghouse
Upgraded Blast Furnace Hygiene Baghouse	PM, Pb and VOC	VOC = 20 ppm Pb = 0.00004 gr/dscf PM =0 005 gr/dscf	• VOC at the inlet to the baghouse • PM and Pb at main stack (1)
New Hygiene Baghouse	PM and Pb	Pb = 0.00004 gr/dscf PM =0 005 gr/dscf	• PM and Pb at main stack (1)
Furnace Building Cartridge Collector	PM and Pb	Pb = 0.00004 gr/dscf PM =0 005 gr/dscf	• PM and Pb at main stack (1)
Furnace Baghouse	PM, Pb, SO2, CO and NO_x	SO2 = 190 lb/hr (Daily average) CO = 175.7 lb/hr Pb = 0.00062 gr/dscf PM = 0 .006 gr/dscf NO_x = 21.75 ton/yr	• CEM for SO_2 • PM, Pb and CO at main stack (1) • NO_x- Gas consumption records.
Refinery Baghouse	PM, Pb, and NO_x	Pb = 0.0002 gr/dscf PM = 0 .0044 gr/dscf NO_x= 30 tons/yr (2)	• PM and Pb at the outlet of Refining Baghouse • NO_x- Record of Sodium nitrate consumption • NO_x- Natural gas consumption

(1) The exhaust from the furnace baghouse, upgraded blast furnace hygiene baghouse, new hygiene baghouse and furnace building cartridge collector will be combined and vented through a common main stack. Gulf Coast is requesting that the Pb emissions limit be established for the combined exhaust. The combined limit will assure that the total Pb and PM emissions from these four sources as reflected in the netting analysis are not exceeded.

(2) NO_x emissions from sodium nitrate usage are estimated at 30 tons per year based on 250,000 lb of annual sodium nitrate consumption. The combustion emissions from refinery are estimated at 9.3 tons per year but emit through separate five stacks.

The calculations below provide the basis for a single limit for the combined exhaust since all these sources are interdependent (furnace area).

Total Pb emission = 0.234 lb/hr x 7000 grains/lb x 1/60 min/hr

=27.30 grains/min

Combined emissions limit = 27.30 grains/min x 1 /103,453 min/dscf

= 0.000264 grains/ dscf

Source	Air Flow Dscfm	Lead Concentration Grains/dscf	Lead Emissions Lb/hr	Lead Emissions (1) Ton/yr
Furnace Baghouse	40,013	0.00062	0.212	0.89
Upgraded Blast Furnace hygiene baghouse	17,897	0.00004	0.006	0.026
Future Hygiene Baghouse	22,372	0.00004	0.0077	0.032
Furnace Building Ventilation cartridge collector	23,171	0.00004	0.0079	0.033
Total	103,453	0.00026	0.234	0.981

(1) Annual emissions based on 8400 hours/yr

Appendix A
Current Actual Emissions

TABLE A1
BASELINE EMISSION SUMMARY FOR 2000-2001

Existing Units	Storage Silo	Battery Breaking	Blast Furnace	Hygiene	Refining Kettles	Casting	Road	Total Emissions (TPY)
PM Stack	0.01		1.53	0.84	0.54			2.92
PM Fug		0.11	15.38		0.01	0.01	0.70	16.22
PM Total	0.01	0.11	16.90	0.84	0.55	0.01	0.70	19.14
PM_{10} Stack	0.01	0.11	1.53	0.84	0.54			3.03
PM_{10} Fug			15.38	-	0.01	0.01	0.70	16.11
PM_{10} Total	0.01	0.11	16.90	0.84	0.55	0.01	0.70	19.14
SO2 Stack			759.91		0.004			759.91
SO2 Fug			-					0.00
SO2 Total			759.91		0.004			759.91
NOx Stack			1.64		25.51			27.15
NOx Fug			-					0.00
NOx Total			1.64		25.51			27.15
CO Stack			650.52		0.60			651.13
CO Fug			-					0.00
CO Total			650.52		0.60			651.13
VOC Stack			67.73	3.90	0.04			71.67
VOC Fug			-					0.00
VOC Total			67.73	3.90	0.04			71.67
Pb Stack			0.07	0.22	0.02			0.32
Pb Fug		0.06	0.38		0.004	0.004	0.28	0.73
Pb Total		0.06	0.45	0.22	0.03	0.004	0.28	1.05

TABLE A2
ACTUAL EMISSIONS FROM BATTERY BREAKING AREA

Battery Breaking

Calculations for fugitive PM and Lead Emissions from Battery Breaking

Production Year	Metal Charged Tons	PB factor(1) lb/ton	Fugitive Pb(2) lb/yr	Fugitive PM(3) lb/yr	Emission Designation
2000	26500	0.0044	116.60	233.20	BF-01
2001	24332	0.0044	107.06	214.12	
Two Year Average			111.83	223.66	

1. Emissions factors are based on MACT background document for NESHAP Subpart X, Attachment E, Pg D 56

2. Fugitive Emissions (lb/yr) = Emissions factor(lb/ton of metal) * tons of metal charged (ton/yr)
3. PM emissions were assumed to be two times lead emissions.

TABLE A3
EMISSIONS FROM BLAST FURNACE

1. Calculations for PM and Lead Emissions from Blast Furnace Baghouse

Stack Test Date	Air flow dsfm @ 68 F	PM Conc. grain/dscf	Lead Conc. grain/dscf	Hours of Operation	PM Emissions(1)(13) tons/yr	Pb Emissions(1)(13) tons/yr
Jun-00	25077	0.003195		8126	2.79	
Jul-00	24142		0.000103	8126		0.0866
Jun-01	25045	0.000304	0.000068	8128	0.27	0.0593
Two Year Average		0.0017495	0.000086		1.53	0.0730

2. Calculations for fugitive PM and Lead Emissions from Blast furnace

Production Year	Pb Charged Tons	Hours of Operation	PM factor(2) lb/ton	PB factor(2) lb/ton	Capture (3) Efficiency	Control(4) Efficiency	Fugitive PM (5) lb/yr	Fugitive Pb(5) lb/yr
2000	26500	8126	24.2	0.6	95.00%	0.00%	32065.00	795.00
2001	24332	8128	24.2	0.6	95.00%	0.00%	29441.72	729.96
Two Year Average							30753.36	762.48

3. Calculations for CO, VOC and SO_2 emissions

Stack Test Date	Air flow dsfm @ 68 F	Hours of Operation	$S0_2$ lb/hr	CO lb/hr	VOC(11) lb/hr	SO_2(12)(13) ton/yr	CO(6)(13) ton/yr	VOC(6)(13) ton/yr
Jun-00	25077	8126	185.87	250	26.5	755.20	1015.75	107.67
Jun-01	25045	8128	188.14	70.20	6.84	764.61	285.29	27.80
Two Year Average			187.01	160.10	16.67	759.91	650.52	67.73

EMISSION DESIGNATION	Process Description	Emission Point	Average Actual Emissions (TPY)				
			PM	Lead	SO2	CO	VOC
S-001	Blast Furnace	Stack	1.5277	0.0730	759.91	650.52	67.73
FF-02	Blast Furnace	Fugitive Roof Vent (7)	7.6883	0.1906			
FF-03	Blast Furnace	Fugitive - bldg(7)	7.6883	0.1906			
TOTAL			16.90	0.45			

Blast Furnace Combustion Emissions

Natural Gas used from Nov 99- Oct	34.7	MCF
Natural Gas used from Nov 00- Oct	30.8	MCF
Average for two years	32.75	MCF

Pollutant	Emissions Factor (lbs/MMCF)	Actual(10) Emissions tons/year	
Carbon Monoxide	84	1.376	(8)
Sulfur Dioxide	0.6	0.010	(9)
VOC (as C1)	5.5	0.090	(9)
Nirogen Oxides	100	1.638	(8)
PM_{10}	7.6	0.124	(9)
PM	7.6	0.124	(9)
Lead	0.0005	0.00001	(9)
Emission DesginatioR1- flue stack			

Notes:

1 Stack Emissions (tons/yr) = grain loading (grains/dscf) x (Air Flow dscfm) x60 min/hr x (1 lb/7000 gr)x(1ton/2000lb)

2 Maximum Fugitive emission factor from AP-42, Chapter 12, Table 12.11-4 (1/95)

3 Capture Efficiency of hoods at charging and tapping location estimated at 95 %.

4 Control Efficiency is estimated to be 0%. PM emissions not captured by the hood is considered all fugitive.
5 Fugitive Emissions (lb/yr) = Emissions factor (lb/ton of metal) * tons of metal processed (ton/yr) * (1- Capture Eff)
6 Tons /yr = stack emissions (lb/hr) x hours/yr x 1/2000(lb/ton).
7 Fugitive emissions are estimated to be split as 25 % escaping thru the roof vent and 75 % from building openings.
8 Emissions factors are from AP-42, Supplement D , Table 1.4-2 (7/1998)
9 Emissions factors are from AP-42, Supplement D , Table 1.4-1, Small Boilers - Uncontrolled Emissions (7/1998)
10 Emissions (tons/yr) = Emissions Factor (lb/MMCF) x Gas Consumed(MMCF/yr)x ton/2000 lbs
11. VOC emissions reported as propane as per test method 25A.

TABLE A4
ACTUAL EMISSIONS FROM CHARGING AND TAPPING

Hygiene Baghouse

1. Calculations for PM and Lead Emissions from Hygiene Baghouse

Stack Test Date	Air flow dsfm @ 68 F	PM Conc grain/dscf	Lead Conc grain/dscf	VOC lb/hr	Hours of operation	PM Emissions(1) ton/yr	Pb Emissions(1) ton/yr	VOC Emissions(2)
Jun-00	17619	0.00137	0.000588	0.91	8126	0.8406	0.3608	3.70
Jun-01	17624	0.00138	0.000135	1.01	8128	0.8472	0.0829	4.105
Two Year Average		0.001375				0.8439	0.2218	3.901

Two Year Average PM and Lead Emissions from Hygiene Baghouse:

EMISSION SOURCE I.D	Process Description	Emission Point	Average Actual Emissions (TPY)		
			PM	Pb	VOC
S-004	Hygiene Baghouse	Stack	0.8439	0.2218	3.901
TOTAL			**0.84**	**0.22**	3.901

Notes:

1 Stack Emissions (tons/yr) = grain loading (grains/dscf) x (Air Flow dscfm) x60 min/hr x (1 lb/7000 gr) *(1 ton/2000lb)

TABLE A5
ACTUAL EMISSIONS FROM REFINING KETTLES 1 AND 2

1. Calculations for PM and Lead Emissions from Refining Kettle Baghouse

Stack Test Date	Air flow dscfm @ 68 F	PM Conc grain/dscf	Lead Conc grain/dscf	Hours of Operation	PM Emissions(1) tons/yr	Pb Emissions(1) tons/yr
Jul-99	13544	0.00014	0.00006	6730	0.055	0.0234
Jun-00	16161	0.001975	0.000042	6730	0.921	0.0196
Two Year Average					0.488	0.0215

2. Calculations for fugitive PM and Lead Emissions from Refining Kettles

Production Year	Metal Charged Tons	Hours of Operation	PM factor(2) lb/ton	Pb factor(2) lb/ton	Control(3) Efficiency	Fugitive PM (4) lb/yr	Fugitive Pb(4) lb/yr
1999	24170	6730	0.002	0.0006	50.00%	24.1700	7.2510
2000	25184	6730	0.002	0.0006	50.00%	25.1840	7.5552
Two Year Average						24.6770	7.4031

3. Calculation of NOx emissions due to flux (NaNO3) addition in refining kettles

Production Year	Flux used lbs	Hours of Operation	NOx factor(5) lb NOx/lb NaNO3	NOx Emisisons ton/yr
July 98 - June 99	220579	6730	0.24	26.47
July 99-June 200	192600	6730	0.24	23.11
Two Year Average	206589.5			24.79

Two Year Average Refining PM and Lead Emissions:

EMISSION SOURCE I.D	Process Description	Emission Point	Average Actual Emissions (TPY)		Emission Designation
			PM	Lead	
RK-01 and RK-02	Refining Kettles	Stack	0.4876	0.0215	S-011
RK-01 and RK-02	Refining Kettles	Fugitive	0.0123	0.0037	RF-04
TOTAL			0.50	0.03	

Refining Combustion Emissions

Natural Gas used from 7/98- 6/99	13.1	MCF
Natural Gas used from 7/99- 6/00	15.7	MCF
Average for two years	14.4	MCF

Pollutant	Emissions Factor (lbs/MMCF)	Actual Emissions (8) tons/year)		Emission Designation
Carbon Monoxide	84	0.605	(6)	
Sulfur Dioxide	0.6	0.0043	(7)	
VOC (as C1)	5.5	0.040	(7)	S-013
Nirogen Oxides	100	0.720	(6)	
PM_{10}	7.6	0.055	(7)	
PM	7.6	0.055	(7)	
Lead	0.0005	3.60E-06	(7)	
Emission Desgination	R1- flue stack			

Notes:

1 Stack Emissions (tons/yr) = grain loading (grains/dscf) x (Air Flow dscfm) x 60 min/hr x (1 lb/7000 gr) x (1ton/2000lb)

2 Fugitive emission factor from AP-42, Chapter 12, Table 12.11-4 (1/95)

3 Control Efficiency is estimated to be 50 % for wet supression based on Table G-1, from Background document for NESHAP Subpart X
4 Fugitive Emissions (lb/yr) = Emissions factor(lb/ton of metal) * tons of metal processed (ton/yr) * (1-Control Efficiency)
5 NOx emissions factor based on stack testing for Sanders Lead Company in Alabama and adjusted for a safety factor of 50 %
6 Emissions factors are from AP-42, Supplement D , Table 1.4-1, Small Boilers - Uncontrolled Emissions (7/1998)
7 Emissions factors are from AP-42, Supplement D , Table 1.4-2 (7/1998)
8 Emissions (tons/yr) = Emissions Factor (lb/MMCF) x Gas Consumed MMCF/yr) x ton/2000 lbs

TABLE A6
ACTUAL EMISSIONS FROM CASTING

Casting Machine

Calculations for fugitive PM and Lead Emissions from Casting

Production Year	Metal Produced Tons	Hours of Operation	PM factor(1) lb/ton	PB factor(1) lb/ton	Control(2) Efficiency	Fugitive PM (3) lb/yr	Fugitive Pb(3) lb/yr	Emission Designation
1999	24170	6730	0.002	0.0007	50.00%	24.17	8.46	
2001	25184	6730	0.002	0.0007	50.00%	25.18	8.81	RF-04
Two Year Average						24.68	8.64	

1. Fugitive emission factor from AP-42, Chapter 12, Table 12.11-4 (1/95)
2. Control Efficiency is estimated to be 50 % for wet supression based on Table G-1, from Background document for NESHAP Subpart X
3. Fugitive Emissions (lb/yr) = Emissions factor(lb/ton of metal) * tons of metal processed (ton/yr) * (1-Control Efficiency)

TABLE A7
ROAD FUGITIVES- ACTUAL

Paved Road Calculation - Baseline
AP-42 (10/97 Version) Ch. 13.2.1
Paved Road Calculation

E = k * (sL/2)^0.65 * (W/3)^1.5

E = PM-10 emissions factor (lb/VMT)
k = Base emission factor (lb/VMT) - PM-10
sL = Silt loading (g/m^2)
W = Mean vehicle weight (tons)

1. Calculations for Pb emissions

Paved Roadways	Total Length Feet	E (1) gm/VMT	Control (2) Efficiency	Trips per week	Miles Traveled Miles/wk	Area of the Road m2	Controlled(6)(7) Emissions Pb g/sec	Pb lb/yr	Pb g/sec/m2
EAST SECTION									
18 Wheeler	6157	168.98	50%	5	5.83	574.00	0.000815	56.43	1.42E-06
14 Wheeler	9055	156.10	50%	5	8.58	574.00	0.001107	76.66	1.93E-06
6 Wheeler	2400	59.54	50%	5	2.27	574.00	0.000112	7.75	1.95E-07
Fork Lift	14475	59.54	50%	7	19.19	574.00	0.000945	65.44	1.65E-06
Subotal for East Section							0.002978	206.27	5.19E-06
CENTER SECTION									
18 Wheeler	10272	168.98	50%	5	9.73	1,024.00	0.001359	94.13	1.33E-06
14 Wheeler	16614	156.10	50%	5	15.73	1,024.00	0.002030	140.65	1.98E-06
6 Wheeler	0	59.54	50%	5	0.00	1,024.00	0.000000	0.00	0.00E+00
Fork Lift	0	59.54	50%	7	0.00	1,024.00	0.000000	0.00	0.00E+00
botal for Center Section							0.003389	234.79	3.31E-06
WEST SECTION									
18 Wheeler	1026	168.98	50%	5	0.97	315.00	0.000136	9.40	4.31E-07
14 Wheeler	4247	156.10	50%	5	4.02	315.00	0.000519	35.95	1.65E-06
6 Wheeler	5400	59.54	50%	5	5.11	315.00	0.000252	17.44	7.99E-07
Fork Lift	14475	59.54	50%	7	19.19	315.00	0.000945	65.44	3.00E-06
ubotal for West Section							0.001851	128.22	5.88E-06
					TOTAL:		**0.016436**	**569.28**	

2. Calculations for PM emissions

Paved Roadways	Total Length Feet	(3) k g/VMT	(4) sL^2 g/m^2	(5) W tons	E gm/VMT	Control Efficiency	Trips per week	Miles Traveled Miles/wk	Area of the Road m2	Controlled(6)(7) Emissions PM g/sec	PM lb/yr	PM g/sec/m2
EAST SECTION												
18 Wheeler	7889	7.3	9.7	29.7	634.61	50%	5	7.47	574.00	0.003920	271.52	6.83E-06
14 Wheeler	10240	7.3	9.7	23.1	435.30	50%	5	9.70	574.00	0.003490	241.75	6.08E-06
6 Wheeler	2400	7.3	9.7	6.6	66.48	50%	5	2.27	574.00	0.000125	8.65	2.18E-07
Fork Lift	0	7.3	9.7	6.6	66.48	50%	7	0.00	574.00	0.000000	0.00	0.00E+00

Subotal for East Section											521.92	1.31E-05
CENTER SECTION												
18 Wheeler	7289	7.3	9.7	29.7	634.61	50%	5	6.90	1,024.00	0.003621	250.87	3.54E-06
14 Wheeler	10240	7.3	9.7	23.1	435.30	50%	5	9.70	1,024.00	0.003490	241.75	3.41E-06
6 Wheeler	0	7.3	9.7	6.6	66.48	50%	5	0.00	1,024.00	0.000000	0.00	0.00E+00
Fork Lift	0	7.3	9.7	6.6	66.48	50%	7	0.00	1,024.00	0.000000	0.00	0.00E+00
botal for Center Section											492.61	6.94E-06
WEST SECTION												
18 Wheeler	2280	7.3	9.7	29.7	634.61	50%	5	2.16	315.00	0.001133	78.47	3.60E-06
14 Wheeler	9437	7.3	9.7	23.1	435.30	50%	5	8.94	315.00	0.003216	222.79	1.02E-05
6 Wheeler	5400	7.3	9.7	6.6	66.48	50%	5	5.11	315.00	0.000281	19.47	8.92E-07
Fork Lift	14475	7.3	9.7	6.6	66.48	50%	7	19.19	315.00	0.001055	73.06	3.35E-06
ubotal for West Section											393.79	1.80E-05
								TOTAL:			1408.321	3.81E-05

1. E values based on MACT Background doucment EPA 453/R-94-02B- Table F-2 Pg D-84 and Table F-3 Page 88
2. Control Efficiency based on Table G-1 Page D 115 EPA 453/R-94-02b for wet supression.
3. K - used a value of 7.3 g/VMT for PM-10 from AP-42 Table 13.2-1.1 (10/97)
4 Silt content from Ap-42, Chapter 13, Table 13.2.1-3 for Iron and Steel Foundry.
5. Average weight of the vehicle
6. Controlled emission (gm/sec) = gm/VMT)* (miles/wk)*(1- control Eff.)* (1/7)day/wk*(1/24) hrs/day * (1/3600)sec/hr
7. Controlled emission(lb/yr) = gm/VMT* (miles/wk)*(1- control Eff.)* 52 wk/yr*(1/2000) (lb/ton)

Table A8
Estimate of Vehicle Miles Travelled

	Truck Size	Distance per trip Feet	Number of Trips per day	Total Distance Per day Feet	Days Per week	Distance per day (feet) for different sections East	Center	West
RECEIVING								
Spent Battery Receiving	18 Wheels	1150	8	9200	5	3220	5980	
In plant Trailer	14 Wheels	2425	11.32	27460	5	8238	15103	4119
Dead Trip	6 Wheels	1350	4	5400	5			5400
Misc Raw Mat. Rec	18 Wheels	1150	0.4	460	5	161	299	
Misc Raw Mat. Rec	14 Wheels	2127.5	0.4	851	5	255	468	128
Misc Raw Mat. Rec	18 Wheels	1320	0.6	792	5	238	436	119
Bulk Chemical	18 Wheels	2195	1	2195	5	659	1207	329
Bulk Coke	18 Wheels	1425.7	0.7	998	5	299	549	150
Scrap Iron	18 Wheels	2300	0.4	920	5	276	506	138
Misc Deliveries	6 Wheels	400	5	2000	5	2000		
Summary of Receiving								
	18 Wheels			14565	5	4852	8977	736
	14 Wheels			28311	5	8493	15571	4247
	6 Wheels			7400	5	2000	0	5400
SHIPPPING								
Miscellaneous	6 Wheels	400	1	400	5	400		
Battery Case	18 Wheels	715	0.5	358	5	125	232	
Customer Trailer	14 Wheels	1605	1	1605	5	562	1043	
Slag Disposal	18 Wheels	1200	0.5	600	5	600		
Battery Wrecker material	18 Wheels	1380	1.4	1932	5	580	1063	290
Summary of Receiving								
	18 Wheels			2890	5	1305	1295	290
	14 Wheels			1605	5	562	1043	0
	6 Wheels			400	5	400	0	0
FORK LIFT IN YARD								
Cardboard	Fork Lift	1620	1	1620	5	1620		
Clean up activities	Fork Lift	3675	1	3675	5	3675		
Lime Movin	Fork Lift	5310	1	5310	7	5310		

coke moving	Fork Lift	3120	1	3120	7	3120	
Flux	Fork Lift	750	1	750	7	750	
				14475		14475	
Plantwide Summary							
	18 Wheels			17454	5		
	14 wheels			29916	5		
	6 Wheels			7800	5		
	Forklift			14475	7		

TABLE A9
EMISSIONS FROM SODA ASH SILO

Soda Ash Silo

Calculations for PM Emissions from Silo Exhaust

Source	Air flow dsfm @ 68 F	PM Conc(1) grain/dscf	Hours of (2) operation	PM Emisisons(3) ton/yr
Soda Ash Silo	800	0.011	208	0.01
Bin Vent				
		0.011		0.01

(1) PM limit based on current permit limit of 0.011 grians/dscf
(2). Based on silo fan operating 2 hours during unloading each truck, 2 trucks per week, 104 trucks per

(3) Stack Emissions (tons/yr) = grain loading (grains/dscf) x (Air Flow dscfm) x60 min/hr x hr/yr X (1 Ib/7000 gr)x(1ton/2000lb)

Appendix B
Proposed Future Emissions

Table B1
POTENTIAL EMISSION SUMMARY

Existing Units	Storage Silos	Battery Breaking	Furnace	Feed Dryer	Upgraded Hygiene baghouse	New Hygiene baghouse	Furnace Building baghouse	Upgraded Refining baghouse	Casting	Road	Total Emissions (TPY)
PM Stack	0.66	0.04	8.64	4.53	3.22	4.03	4.17	5.27			30.57
PM Fug		0.01	0.20					0.01	0.01	0.33	0.56
PM Total	0.66	0.04	8.84	4.53	3.22	4.03	4.17	5.28	0.01	0.33	31.13
PM_{10} Stack	0.66	0.01	8.64	4.53	3.22	4.03	4.17	5.27			30.57
PM_{10} Fug		0.01	0.20		-			0.01	0.01	0.33	0.56
PM_{10} Total	0.66	0.02	8.84	4.53	3.22	4.03	4.17	5.28	0.01	0.33	31.13
SO2 Stack			798.84	0.02				0.07			798.93
SO2 Fug			-								0.00
SO2 Total			798.84	0.02				0.07			798.93
NOx Stack			21.75	3.36				41.04			66.15
NOx Fug			-								0.00
NOx Total			21.75	3.36				41.04			66.15
CO Stack			738.04	2.82				9.27			750.13
CO Fug			-								0.00
CO Total			738.04	2.82				9.27			750.13
VOC Stack			23.78	0.18	10.32			0.61			34.89
VOC Fug			-								0.00
VOC Total			23.78	0.18	10.32			0.61			34.89
Pb Stack		0.02	0.89	0.30	0.03	0.03	0.03	0.20			1.51
Pb Fug		0.005	0.01					0.003	0.004	0.06	0.08
Pb Total		0.02	0.90	0.30	0.03	0.03	0.03	0.20	0.00	0.06	1.59

TABLE B2
POTENTIAL EMISSIONS FROM BATTERY BREAKING AREA

Battery Breaking

Calculations for fugitive PM and Lead Emissions from Battery Breaking

Source	Metal Produced Tons	PB factor(1) lb/ton	Control(3) Efficiency	Fugitive Pb(2) lb/yr	Fugitive PM(4) lb/yr	Emission Designation
Uncontrolled Fugitive	65000	0.0044	84.50%	44.33	88.66	S-012
Scrubber(5)				35.28	70.56	
Fugitive (6)				9.05	18.10	
Total				44.33	88.66	

1. Emission factor based on MACT background Document for NESHAP, Subpart X, Attachment E, Pg D-56

2. Fugitive emissions (lb/yr) = Emissions factor(lb/ton of metal) * tons of metal charged (ton/yr) *(1-Control Eff.)
3. Control efficiency is assumed to be 84.5 % for partial enclosure and power washing followed by wet supression based on Table G-1, from background doucment for NESHAP Subpart X.
4. PM emissions are assumed to be two times lead emissions.
5. Scrubber emission based on GNB , Los Angeles testing (Nov 1990) , outlet lead conc. of 0.0042 lb/hr
6. Net fugitive = uncontrolled fugitive - scrubber outlet

TABLE B3
POTENTIAL EMISSIONS FROM BLAST AND REVERB FURNACE

1. Calculations for PM and Lead Emissions from Blast Furnace Baghouse

Source	Air flow dscfm @ 68 F	PM Conc. grains/dscf	Lead Conc. grains/dscf	Hours of Operation	PM Emissions(1)(14) ton/yr	Lead Emissions(1)(14) ton/yr
Furnace Process Baghouse	40013	0.006	0.00062	8400	8.64	0.89
Feed Dryer	20990	0.006	0.00040	8400	4.53	0.30

2. Calculations for fugitive PM and Lead Emissions from Blast furnace

Emission source	Metal Charged Tons	Hours of Operation	PM factor(2) lb/ton	PB factor(2) lb/ton	Capture (3) Efficiency	Control(4) Efficiency	Fugitive PM (5) lb/yr	Fugitive Pb(5) lb/yr
Blast Furnace	19500	8400	24.2	0.6	95.00%	99.00%	235.95	5.85
Reverb Furnace	45500	8400	24.2	0.4	95.00%	99.00%	550.55	9.10
	65000						393.25	14.95

3. Calculations for CO, VOC and SO_2 emissions

Stack Test Date	Air flow scfm @ 68 F	Hours of Operation	$S0_2$ lb/hr	CO lb/hr	VOC(11)(12) lb/hr	SO_2(6)(14) ton/yr	CO(6)(14) ton/yr	VOC(6)(14) ton/yr
Blast& Reverb	41250	8400	190.2	175.72	5.66	798.84	738.04	23.78
Total			190.2	175.72	5.66	798.84	738.04	23.78

EMISSION DESIGNATION	Process Description	Emission Point	Average Actual Emissions (TPY)				
			PM	Lead	SO2	CO	VOC
Main Stack-S010	Blast & Reverb Furnace	Stack	8.64	0.89	798.84	738.04	23.78
FF-01	Blast & Reverb Furnace	Fugitive - bldg(7)	0.1966	0.0075			
S011	Dryer Baghouse	Stack	4.5339	0.3023			
TOTAL			**13.37**	**1.20**			

Combustion Emissions

Blast Furnace	50	MMCF per year
Reverb Furnace	168	MMCF per year
Dryer	67.2	MMCF per year
Total	285.2	MMCF per year

Pollutant	Emissions Factor (lbs/MMCF)	Potential (10) Furnace Emissions tons/year	Potential (10) Dryer Emissions tons/year	
Carbon Monoxide	84	9.156	2.8224	(8)
Sulfur Dioxide	0.6	0.065	0.020	(9)
VOC (as C1)	5.5	0.600	0.185	(9)
Nitrogen Oxides	100	21.750	3.36	(8) (13)
PM_{10}	7.6	0.828	0.26	(9)
PM	7.6	0.828	0.26	(9)
Lead	0.0005	0.00005	0.00002	(9)

Notes:

1 Stack emissions (tons/yr) = grain loading (grains/dscf) x (Air Flow dscfm) x60 min/hr x (1 lb/7000 gr)x(1ton/2000lb)
2 Maximum fugitive emission factor from AP-42, Chapter 12, Table 12.11-4 (1/95)
3 Capture efficiency of hoods at charging and tapping location estimated at 95 %.
4 Control efficiency is estimated to be 99% for completely enclosed building and venting to a baghouse.
5 Fugitive emissions (lb/yr) = Emissions factor (lb/ton of metal) * tons of metal processed (ton/yr) * *(1- Capture Eff)* (1-Control Efficiency)
6 Tons /yr = stack emissions (lb/hr) x hours/yr x 1/2000(lb/ton)
7 Fugitive emissions are assumed to be escaping from the building opening.
8 Emissions factors are from AP-42, Supplement D , Table 1.4-2 (7/1998)
9 Emissions factors are from AP-42, Supplement D , Table 1.4-1, Small Boilers - uncontrolled Emissions (7/1998)
10 Emissions (tons/yr) = Emissions Factor (lb/MMCF) x Gas Consumed(MMCF/yr)x ton/2000 lbs

11. VOC emissions reported as propane as per test method 25A. VOC emission based on MACT limit of 20 ppmv for collocated furnace and 20 ppmv for charging hoods correctred to 4% carbon dioxide..
12. Lb/hr = ppmc X 50000 (acfm) X 60 (min/hr) X 44.1 (lb/lb mole) /385.6 (ft3/lb mole) x 10^6
13. An additional allowance of 9.85 tons added for afterburner and furnaces.
14. Includes contribution from natural gas combustion.

TABLE B4

POTENTIAL EMISSIONS FROM CHARGING AND TAPPING

Hygiene Baghouse

1. Calculations for PM and Lead Emissions from Hygiene Baghouse

Stack Test Date	Air flow dscfm @ 68 F	PM Conc grain/dscf	Pb Conc grain/dscf	Hours of operation	PM Emisisons(1) ton/yr	Pb Emissions(1) ton/yr	VOC Emissions(2)(3) ton/yr
Upgraded Hygiene	17897	0.005	4.00E-05	8400	3.222	0.026	10.32
New Hygiene	22372	0.005	4.00E-05	8400	4.027	0.032	
Building Baghouse (4)	23171	0.005	4.00E-05	8400	4.171	0.033	
Total					11.419	0.091	10.32

Two Year Average PM and Lead Emissions from Hygiene Baghouse:

EMISSION SOURCE I.D	Process Description	Emission Point	Average Actual Emissions (TPY)		
			PM	Pb	VOC
S-010	Hygiene Baghouse	Stack	3.2215	0.0258	10.32
S-010	New Hygiene	Stack	4.0269	0.0322	
S-010	Building Baghouse	Stack	4.1707	0.0334	
TOTAL			11.42	0.09	10.316

Notes:

1 Stack Emissions (tons/yr) = grain loading (grains/dscf) x (Air Flow dscfm) x60 min/hr x (1 lb/7000 gr) * (1ton/2000 lb)

2. VOC emission based on MACT limit for charging hoods of 20 ppm.

3. Lb/hr = ppmc X 17959 scfm X 60 (min/hr) X 44.1 (lb/lb mole) /385.6 (ft3/lb mole) x 10^6

4. Buiding baghouse emissions based on Source Test Report for NESHAP Compliance for GNB Technologies, Los Angeles, CA, August 19, 1998. The highest emissions from the test result is 0.00002 gr/dscf. A saftey factor of 2 was applied to arrive the bagouse outlet Pb concnebtration of 0.00004 gr/dscf.

TABLE B5
POTENTIAL EMISSIONS FROM REFINING KETTLES 1, 2,3 4, 5 and 6

Refining Kettles

1. Calculations for PM and Lead Emissions from Upgraded Refining Kettle Baghouse

Process	Air flow dsfm @ 68 F	PM Conc grain/dscf	Lead Conc grain/dscf	Hours of Operation	PM Emissions(1) tons/yr	Pb Emissions(1) tons/yr
Refining Baghouse	26846	0.0044	0.0002	8760	4.43	0.202
					4.43	0.202

2. Calculations for fugitive PM and Lead Emissions from Upgraded Refining Area

Production Year	Metal Produced Tons	Hours of Operation	PM factor(2) lb/ton	Pb factor(2) lb/ton	Control(3) Efficiency	Fugitive PM (4) lb/yr	Fugitive Pb(4) lb/yr
2003	65000	8760	0.002	0.0006	84.5%	20.1500	6.0450
						20.1500	6.0450

3. Calculation of NOx emissions due to flux (NaNO3) addition in refining kettles

Production Year	Flux used lbs	Hours of Operation	NOx factor(5) lb NOx/lb NaNO3	NOx Emisisons ton/yr
Projected use	250000	8760	0.24	30.00
				30.00

Two Year Average Refining PM and Lead Emissions:

EMISSION DESIGNATION	Process Description	Emission Point	Potential Emissions (TPY)		Emission Designation
			PM	Lead	
Baghouse -S003	Refining Kettles	Stack	4.4347	0.2016	S-011
	Refining Kettles	Fugitive	0.0101	0.0030	RF-04
			4.44	**0.20**	

Refining Combustion Emissions

6 Kettles @ 4.2 MM Btu/hr	25.2	MM Btu/hr
Annual Natural Gas Consumption	220.752	MMCF/yr

Pollutant	Emissions Factor (lbs/MMCF)	Potential Emissions (8) tons/year)		Emission Designation
Carbon Monoxide	84	9.272	(6)	
Sulfur Dioxide	0.6	0.0662	(7)	S005 &
VOC (as C1)	5.5	0.607	(7)	S006
Nirogen Oxides	100	11.038	(6)	
PM_{10}	7.6	0.839	(7)	
PM	7.6	0.839	(7)	
Lead	0.0005	5.52E-05	(7)	
Emission Designation	R1- flue stack			

Notes:

1 Stack emissions (tons/yr) = grain loading (grains/dscf) x (Air Flow dscfm) x 60 min/hr x (1 lb/7000 gr) x (1ton/2000lb)

2 Fugitive emission factor from AP-42, Chapter 12, Table 12.11-4 (1/95)

3 Control efficiency is estimated to be 84.5 % for wet supression based on Table G-1, from Background document for NESHAP Subpart X

4 Fugitive emissions (lb/yr) = Emissions factor(lb/ton of metal) * tons of metal processed (ton/yr) * (1-Control Efficiency)

5 NOx emissions factor based on stack testing for Sanders Lead Company in Alabama and adjusted for a safety factor of 50 %.

6 Emissions factors are from AP-42, Supplement D , Table 1.4-1, Small Boilers - Uncontrolled Emissions (7/1998)

7 Emissions factors are from AP-42, Supplement D , Table 1.4-2 (7/1998)

8 Emissions (tons/yr) = Emissions Factor (lb/MMCF) x Gas Consumed MMCF/yr) x ton/2000 lbs

TABLE B6
POTENTIAL EMISSIONS FROM CASTING

Casting Machine

Calculations for fugitive PM and Lead Emissions from Casting

Production Year	Metal Charged Tons	Hours of Operation	PM factor(1) lb/ton	PB factor(1) lb/ton	Control(2) Efficiency	Fugitive PM (3) lb/yr	Fugitive Pb(3) lb/yr	Emission Designation
2003	65000	8760	0.002	0.0007	84.5%	20.1500	7.0525	
Two Year Average						20.1500	7.0525	

1. Fugitive emission factor from AP-42, Chapter 12, Table 12.11-4 (1/95)

2. Control efficiency is estimated to be 84.5 % for power washing and wet supression based on Table G-1, from background document for NESHAP Subpart X
3. Fugitive emissions (lb/yr) = Emissions factor(lb/ton of metal) * tons of metal processed (ton/yr) * (1-Control Efficiency)

TABLE B7
POTENTIAL EMISSIONS FROM ROAD FUGITIVES

Paved Road Calculation - Projected
AP-42 (10/97 Version) Ch. 13.2.1

$$E = k * (sL/2)^{0.65} * (W/3)^{1.5}$$

E = PM-10 emissions factor (lb/VMT)
k = Base emission factor (lb/VMT) - PM-10
sL = Silt loading (g/m^2)
W = Mean vehicle weight (tons)

1. Calculations for Pb emissions

Paved Roadways	Total Length Feet	(1) E gm/VMT	(2) Control Efficiency	Trips per week	Miles Traveled Miles/wk	Area of the Road m2	Controlled(6)(7) Emissions Pb g/sec	Pb lb/yr	Pb g/sec/m2
EAST SECTION									
18 Wheeler	3346	168.98	84.50%	5	3.17	574.00	0.000192	9.51	3.35E-07
14 Wheeler	0	156.10	84.50%	5	0.00	574.00	0.000000	0.00	0.00E+00
6 Wheeler	2400	59.54	84.50%	5	2.27	574.00	0.000049	2.40	8.46E-08
Fork Lift	8560	59.54	84.50%	7	11.35	574.00	0.000173	12.00	3.02E-07
Subotal for East Section							0.000414	23.90	7.21E-07
CENTER SECTION									
18 Wheeler	2570	168.98	84.50%	5	2.43	1,024.00	0.000148	7.30	1.44E-07
14 Wheeler	21880	156.10	84.50%	5	20.72	1,024.00	0.001161	57.42	1.13E-06
6 Wheeler	9113	59.54	84.50%	5	8.63	1,024.00	0.000184	9.12	1.80E-07
Fork Lift	0	59.54	84.50%	7	0.00	1,024.00	0.000000	0.00	0.00E+00
ubotal for Center Section							0.001492	73.84	1.46E-06
WEST SECTION									
18 Wheeler	805	168.98	84.50%	5	0.76	315.00	0.000046	2.29	1.47E-07
14 Wheeler	7176	156.10	84.50%	5	6.80	315.00	0.000381	18.83	1.21E-06
6 Wheeler	3038	59.54	84.50%	5	2.88	315.00	0.000061	3.04	1.95E-07
Fork Lift	0	59.54	84.50%	7	0.00	315.00	0.000000	0.00	0.00E+00
Subotal for West Section							0.000488	24.16	1.55E-06
					TOTAL:		0.0024	121.91	3.10E-06

2. Calculations for PM emissions

Paved Roadways	Total Length Feet	(3) k g/VMT	(4) sL* g/m^2	(5) W tons	E gm/VMT	Control Efficiency	Trips per week	Miles Traveled Miles/wk	Area of the Road m2	Controlled(6)(7) Emissions PM g/sec	PM lb/yr	PM g/sec/m2
EAST SECTION												
18 Wheeler	3346	7.3	9.7	29.7	634.61	67%	5	3.17	574.00	0.001536	76.01	2.68E-06
14 Wheeler	0	7.3	9.7	23.1	435.30	67%	5	0.00	574.00	0.000000	0.00	0.00E+00
6 Wheeler	2400	7.3	9.7	6.6	66.48	67%	5	2.27	574.00	0.000115	5.71	2.01E-07
Fork Lift	8560	7.3	9.7	6.6	66.48	67%	7	11.35	574.00	0.000412	28.52	7.17E-07
Subotal for East Section											110.23	3.59E-06
CENTER SECTION												
18 Wheeler	2570	7.3	9.7	29.7	634.61	67%	5	2.43	1,024.00	0.001180	58.37	1.15E-06
14 Wheeler	21880	7.3	9.7	23.1	435.30	67%	5	20.72	1,024.00	0.006890	340.92	6.73E-06

6 Wheeler	9113	7.3	9.7	6.6	66.48	67%	5	8.63	1,024.00	0.000438	21.68	4.28E-07
Fork Lift	0	7.3	9.7	6.6	66.48	67%	7	0.00	1,024.00	0.000000	0.00	0.00E+00
ubotal for Center Section											420.97	8.31E-06
WEST SECTION												
18 Wheeler	805	7.3	9.7	29.7	634.61	67%	5	0.76	315.00	0.000369	18.27	1.17E-06
14 Wheeler	7176	7.3	9.7	23.1	435.30	67%	5	6.80	315.00	0.002260	111.81	7.17E-06
6 Wheeler	3038	7.3	9.7	6.6	66.48	67%	5	2.88	315.00	0.000146	7.23	4.64E-07
Fork Lift	0	7.3	9.7	6.6	66.48	67%	7	0.00	315.00	0.000000	0.00	0.00E+00
Subotal for West Section											137.31	8.81E-06
								TOTAL:			668.514	2.07E-05

1. E values based on MACT Background doucment EPA 453/R-94-02B- Table F-2 Pg D-84 and Table F-3 Page 88
2. Control Efficiency based on Table G-1 Page D 115 EPA 453/R-94-02b for wet supression and power washing.
3. K - used a value of 7.3 g/VMT for PM-10 from AP-42 Table 13.2-1.1 (10/97)
4 Silt content from Ap-42, Chapter 13, Table 13.2.1-3 for Iron and Steel Foundry.
5. Average weight of the vehicle
6. Controlled emission (gm/sec) = gm/VMT)* (miles/wk)*(1- control Eff.)* (1/7)day/wk*(1/24) hrs/day * (1/3600)sec/hr
7. Controlled emission(lb/yr) = gm/VMT* (miles/wk)*(1- control Eff.)* 52 wk/yr*(1/2000) (lb/ton)

Table B8
Estimate of Vehicle Miles Travelled

	Truck Size	Distance per trip Feet	Number of Trips per	Total Distar Per day Feet	Days Per week	Distance per day (feet) for different sections East	Center	West
RECEIVING								
Spent Battery Receiving	18 Wheels	0	16	0	5			
In plant Trailer	14 Wheels	1238	19	23520	5		17640	5880
Dead Trip	6 Wheels	1350	9	12150	5		9113	3038
Misc Raw Mat. Rec	18 Wheels	0	0.4	0	5			
Misc Raw Mat. Rec	14 Wheels	880	0.4	352	5		352	
Misc Raw Mat. Rec	18 Wheels	880	1	880	5		660	220
Bulk Chemical	18 Wheels	780	2	1560	5	468	858	234
Bulk Coke	18 Wheels	1940	0.5	970	5	970		
Scrap Iron	18 Wheels	1360	0.4	544	5		408	136
Misc Deliveries	6 Wheels	400	5	2000	5	2000		
Summary of Receiving								
	18 Wheels			3954	5	1438	1926	590
	14 Wheels			23871.91	5	0	17992	5880
	6 Wheels			14150	5	2000	9113	3038
SHIPPPING								
Miscellaneous	6 Wheels	400	1	400	5	400		
Battery Case	18 Wheels	715	1.2	858	5		644	215
Customer Trailer	14 Wheels	2160	2.4	5184	5		3888	1296
Slag Disposal	18 Wheels	1060	0.4	424	5	424		
Battery Wrecker material	18 Wheels	1060	1.4	1484	5	1484		
Summary of Receiving								
	18 Wheels			2766	5	1908	644	215
	14 Wheels			5184	5	0	3888	1296
	6 Wheels			400	5	400	0	0
FORK LIFT IN YARD								
Cardboard	Fork Lift	1620	2	3240	5	1620		
Clean up activities	Fork Lift	3675	1	3675	5	3675		
Lime Moving	Fork Lift	955	4.2	4011	7	955		
Coke moving	Fork Lift	1560	1	1560	7	1560		

Flux	Fork Lift	750	1	750	7	750		
				13236		8560		
Plantwide Summary								
	18 Wheels			6720	5	3346	2570	805
	14 wheels			29055.91	5	0	21880	7176
	6 Wheels			14550	5	2400	9113	3038
	Forklift			13236	7	8560		0

TABLE B9
EMISSIONS FROM SODA ASH SILO

Soda Ash Silo

Calculations for PM Emissions from Silo Exhaust

Source	Air flow dsfm @ 68 F	PM Conc grain/dscf (1)	Hours of operation	PM Emisisons(2) ton/yr
Exist Soda Ash Silo Bin Vent	800	0.011	8760	0.33
New Soda Ash Silo Bin vent	800	0.011	8760	0.33
		0.011		0.66

(1) Vendor Guarantee for outlet concentration- same as current permit limit..

(2) Stack emissions (tons/yr) = grain loading (grains/dscf) x (Air Flow dscfm) x60 min/hr x (1 lb/7000 gr)x(1 ton/2000lb)

Appendix C
Vehicle Traffic Estimates

GULF COAST RECYCLING, INCORPORATED
FUGITIVE EMISSION INVENTORY
CURRENT OPERATING LEVEL

SECTION I: TRUCK TRAFFIC WITHIN PLANT BOUNDARIES

SECTION I.A: MATERIALS RECEIVING:

SECTION I.A.1: Raw Materials Received:

SECTION I.A.1(a): Spent batteries received:

Spent batteries are received via tractor-trailer units. Each truck enters the plant and proceeds to the scale. After weighing, the trucks drive to the north yard area where the trailers are dropped. The tractor hooks up to an outgoing trailer and drives out the gate.

Number of trucks per day: 8

Frequency of operation: 8 hours per day, 5 days per week

(NOTE: 8 hours per day of operations generally means the time period between 7:00 AM and 3:00 PM unless stated otherwise.)

Distances traveled in plant per operating day:

From gate to scale: 200 feet
From scale to north yard (turn around twice): 610 feet
From north yard to gate: 340 feet

Total distance traveled (on yard) per day: 9,200 feet @ 18 wheels

The in-plant driver hooks to the trailers, drives to the scale, weighs the trailer heavy and proceeds to the battery wrecker dock for unloading. After unloading, the trailer is moved to the scale for a tare weight and is either driven to the loading dock for finished metal loading or is returned to the north yard area empty for return to the customer or freight forwarder. Trailers that are loaded with finished metal are returned to the scale for gross weight and are moved to the north yard to wait for customer pickup. Of the 8 trailers received per day, 4 are loaded with finished metal and 4 are returned empty.

Number of trucks per day: 8

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

From north yard to scale: 325 feet
From scale to battery wrecker dock (turn around): 1125 feet
From battery wrecker dock to scale: 975 feet

(4 trailers per day) From scale to north yard (turn around twice): 610 feet
(4 trailers per day) From scale to loading dock (turn around): 460 feet
(4 trailers per day) From loading dock to scale: 335 feet
(4 trailers per day) From scale to north yard (turn around twice): 610 feet

Total distance traveled (on yard) per day: 27,460 feet @ 14 wheels

The in-plant driver makes some deadhead trips back and forth from the battery wrecker dock to the north yard area and returns to the battery wrecker dock - about 4 round trips per day @ 1,350 feet each trip

Total distance traveled (on yard) per day: 5,400 feet @ 6 wheels

SECTION I.A.1(b): Miscellaneous raw materials received:

Additional raw materials received include battery plant scrap, scrap lead, reclaimed bullet and shot lead and lead drosses. On average, 1 load per day is received. About 40% of the incoming loaded trailers are dropped after weighing and are handled and unloaded as time permits.

Each truck enters the plant and proceeds to the scale. After weighing, the trucks drive to the north yard area where the trailers are dropped. The tractor hooks up to an outgoing trailer and drives out the gate.

Number of trucks per day: 0.4

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

From gate to scale: 200 feet
From scale to north yard (turn around twice): 610 feet
From north yard to gate: 340 feet

Total distance traveled (on yard) per day: 460 feet @ 18 wheels

The in-plant driver hooks to the trailers, drives to the scale, weighs the trailer heavy and proceeds to the loading dock for unloading. After unloading, the trailer is moved to the scale for a tare weight and is either driven to the loading dock for finished metal loading or is returned to the north yard area empty for return to the customer. Trailers that are loaded with finished metal are returned to the scale for gross weight and are moved to the north yard to wait for customer pickup. Of the 0.4 trailers received per day, 0.2 are loaded with finished metal and 0.2 are returned empty.

Number of trucks per day: 0.4

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

For trailers unloaded and reloaded with finished metal:

(0.2 trailers per day) From north yard to scale: 325 feet
(0.2 trailers per day) From scale to loading dock (turn around): 460 feet
(0.2 trailers per day) From loading dock to scale: 335 feet
(0.2 trailers per day) From scale to loading dock (turn around): 460 feet
(0.2 trailers per day) From loading dock to scale: 335 feet
(0.2 trailers per day) From scale to north yard (turn around twice): 610 feet

For trailers unloaded and returned to parking area empty:

(0.2 trailers per day) From north yard to scale: 325 feet
(0.2 trailers per day) From scale to loading dock (turn around): 460 feet
(0.2 trailers per day) From loading dock to scale: 335 feet
(0.2 trailers per day) From scale to north yard (turn around twice): 610 feet

Total distance traveled (on yard) per day: 851 feet @ 14 wheels

The remainder of the loads received each day is weighed in and out but the trailers are not dropped – the tractor-trailer combination remains intact throughout the entire time in the plant.

Number of trucks per day: 0.6

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

From gate to scale: 200 feet
From scale to loading dock (turn around): 460 feet
From loading dock to scale: 335 feet
From scale to gate dock (turn around): 325 feet

Total distance traveled (on yard) per day: 792 feet @ 18 wheels

SECTION I.A.2: Operating Stores Received:

SECTION I.A.2(a): Bulk deliveries of processing chemicals:

There is an average of one load of bulk chemicals received per day, 5 days per week. These materials are (on average) 2 loads of bulk soda ash, 2 loads of liquid caustic soda and 1 load of either refinery chemicals, bagged hydrated lime, ferric chloride liquid other processing chemicals. All bulk deliveries are weighed on our scale before unloading. Since 4 of the 5 loads delivered are unloaded in the same location, the same distances are used for all 5 loads received.

Number of trucks per day: 1

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

From gate to scale: 200 feet

From scale to unloading area (between refinery and wastewater treatment plant)(turn around twice): 960 feet
From unloading area to scale (no turns): 710 feet
From scale to gate (turn around): 325 feet

Total distance traveled (on yard) per day: 2,195 feet @ 18 wheels

SECTION I.A.2(b): Bulk deliveries of furnace coke and fluxes:

We receive 3.5 loads of coke per week, 1 load of scrap iron and 1 load of limestone per week. All items pass across the scale before unloading. The coke is unloaded into the coke storage area south of the feed material storage building and the limestone and iron is unloaded and stored in the storage building near the battery wrecker unloading dock.

Coke (3.5 loads per week):

Number of trucks per day: 0.7

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

From gate to scale: 200 feet
From scale to storage area (must turn truck around): 550 feet
From storage area to scale (must back onto scale): 475 feet
From scale to gate: 200 feet

Total distance traveled (on yard) per day: 998 feet @ 18 wheels

Scrap iron (1 load per week) and limestone (1 load per week):

Number of trucks per day: 0.4

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

From gate to scale: 200 feet
From scale to storage area (must turn truck around): 950 feet
From storage area to scale: 825 feet
From scale to gate (must turn truck around): 325 feet

Total distance traveled (on yard) per day: 920 feet @ 18 wheels

SECTION I.A.2(c): Miscellaneous plant deliveries:

Repair materials and parts, miscellaneous supplies, gasoline and diesel fuel and other items are usually delivered on 2 axle trucks. Most deliveries are to the maintenance shop area or the fueling area adjacent to the truck scales.

The average is about 5 deliveries per day, 5 days per week.

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

From gate to scale: 200 feet
From scale to gate: 200 feet

Total distance traveled (on yard) per day: 2,000 feet @ 6 wheels

GRAND TOTAL DISTANCE TRAVELED PER DAY FOR MATERIALS RECEIVED:	**18 WHEELS = 14,565 FEET** 14 WHEELS = 28,311 FEET 6 WHEELS = 7,400 FEET

SECTION I.B: MATERIALS SHIPPING:

SECTION I.B.1: Lead Shipping: (NOTE: Most shipping, which is to a local customer or picked up by customers, is detailed above.)

SECTION I.B.2: Miscellaneous lead shipments (flashings, shot, small orders of pigs, etc.):

We ship about 1 load per day of miscellaneous items to local customers. These items are usually shipped on our small box truck or are picked up by the customers in small trucks. Items are generally loaded at the area adjacent to the scale and maintenance shop.

The average is about 1 shipment per day, 5 days per week.

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

From gate to scale: 200 feet
From scale to gate: 200 feet

Total distance traveled (on yard) per day: 400 feet @ 6 wheels

SECTION I.B.3: Battery case plastic:

The reclaimed polypropylene plastic from the battery wrecker system is pneumatically conveyed (saturated wet) to a box trailer. When the trailer is full, it is pulled from the area between the battery wrecker building and the wastewater treatment plant. The full trailer is temporarily dropped in the immediate area and a pre-positioned, pre-tare-weighed empty trailer is positioned at the end of the pneumatic pipe for filling. The full trailer is re-hooked to the yard tractor and moved to the scales for heavy weighing. After weighing, the trailer full of plastic is dropped at the north yard area to await customer pickup.

The customer brings in an empty trailer and drops it in the north yard area. After dropping the empty, he hooks to a full trailer of plastic and exits the plant.

The average is about 2.5 trailers per week (0.5 per day).

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

Customer tractor/trailer:

From gate to north yard area (must turn truck around): 375 feet
From north yard area to gate: 340 feet

Total distance traveled (on yard) per day: 358 feet @ 18 wheels

Yard tractor/customer trailer:

From north yard area to scale: 325 feet
From scale to plastic trailer loading area (turn around): 1050 feet
Switching trailers: 300 feet
From plastic trailer loading area to scale: 925 feet
From scale to north yard (turn around twice): 610 feet

Total distance traveled (on yard) per day: 1,605 feet @ 14 wheels

SECTION I.B.4: Barren blast furnace slag for disposal:

Barren blast furnace slag is loaded onto a dump trailer from the slag storage bins for transport to an approved disposal site. Transporter tractor/trailer enters the plant and proceeds to the scale for a tare weight. The truck then drives to the slag storage area for loading. After loading, the truck again is weighed and leaves the plant.

The average is about 2.5 trailers per week (0.5 per day), 5 days per week.

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

From gate to scale: 200 feet
From scale to storage area (must turn truck around): 490 feet
From storage area to scale (must back onto scale): 490 feet
From scale to gate: 200 feet

Total distance traveled (on yard) per day: 600 feet @ 18 wheels

SECTION I.B.5: Battery wrecker material shipped to other plant:

Battery wrecker material is shipped from our plant to another plant in Tennessee at an average of 7 loads per week. Some of the material is transported on our dump trailers and some using outside carriers' dump trailers. Battery wrecker material is loaded onto the dump trailers in the area near the slag storage bins.

Transporter tractor/trailer enters the plant and proceeds to the scale for a tare weight. The truck then drives to the designated loading area for loading. After loading, the truck again is weighed and leaves the plant.

The average is about 7 trailers per week (1.4 per day), 5 days per week.

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

From gate to scale: 200 feet
From scale to loading area (must turn truck around): 490 feet
From loading area to scale (must back onto scale): 490 feet
From scale to gate: 200 feet

Total distance traveled (on yard) per day: 1,932 feet @ 18 wheels

GRAND TOTAL DISTANCE TRAVELED PER DAY FOR MATERIALS SHIPPED:	**18 WHEELS = 2,890 FEET** **14 WHEELS = 1,605 FEET** **6 WHEELS = 400 FEET**
GRAND TOTAL DISTANCE TRAVELED PER DAY FOR TRUCK TRAFFIC IN PLANT AREA:	**18 WHEELS = 17,455 FEET** **14 WHEELS = 29,916 FEET** **6 WHEELS = 7,800 FEET**

SECTION II: MOBIL EQUIPMENT (FORKLIFT & LOADER) TRAFFIC WITHIN PLANT BOUNDARIES

SECTION II.A: PLANT PRODUCTION OPERATIONS - MATERIAL MOVEMENT

SECTION II.A.1: Battery Wrecker Operations:

SECTION II.A.1 (a): Movement of batteries (from the incoming trailers to the feed hopper of the battery wrecker system):

Frequency of operation: 9 hours per day, 5 days per week

Batteries (which are all palletized) are moved from the trailers to temporary storage on the battery wrecker dock. A second forklift moves the pallets from the dock storage area into the feed hopper of the battery wrecker system. Each of the 8 trucks received per day (average) has 20 pallets of batteries (average) for a total of 160 pallets per day, 5 days per week.

Moving batteries from trailers to dock = 40 feet each way for a total of 80 feet times 160 pallets = 9,600 feet per day forklift movement in the battery wrecker building.

Moving batteries from dock to feed hopper = 70 feet each way for a total of 140 feet times 160 pallets = 11,200 feet per day forklift movement in the battery wrecker building (this includes stacking pallets for return to customer or for disposal).

SECTION II.A.1 (b): Salvaged cardboard:

Frequency of operation: 9 hours per day, 5 days per week

The battery wrecker operation produces about 1 bale of cardboard per day, 5 days per week. The unloading forklift moves the bale of cardboard to the edge of the battery wrecker building, which is a trip of about 100 feet from the unloading area with a 100 foot return trip. One of the yard forklifts moves the bale from the battery wrecker building to the cardboard storage area. This trip is about 425 feet one way. The forklift that usually transports the cardboard on the yard is staged from the wastewater treatment plant and travels 770 feet to get to the bale, with a return from the cardboard storage area to the wastewater treatment plant of 425 feet.

Forklift movement in wrecker building: 200 feet per day
Forklift movement on yard: 1,620 feet per day

SECTION II.A.1(c): Cleanup activities:

Frequency of operation: 9 hours per day, 5 days per week

The battery wrecker produces about 3 totes of sump cleanings and floor cleanup material per day. This material is transported to the feed material storage building where it is dumped and mixed with furnace feed material.
The unloading forklift takes the materials to the edge of the battery wrecker building and returns to the unloading area, a trip of about 100 feet each way, twice per day. The yard forklift, generally staged at the wastewater treatment area, travels to the battery wrecker building, a distance of about 275 feet one way, to collect the totes. The yard forklift then transports the totes to the feed material storage building. The trip to the feed material storage building is about 1125 feet each way, for a total of 2450 feet of forklift movement on the yard and 550 feet in the furnace and feed material storage buildings.

Forklift movement in wrecker building: 600 feet per day
Forklift movement on yard: 3,675 feet per day
Forklift movement in furnace and feed material storage building: 825 feet per day

SECTION II.A.2: Furnace Operations:

SECTION II.A.2(a): Movement of slag pans from furnace to slag storage building:

Frequency of operation: 24 hours per day, 7 days per week

The furnace produces about 24 pans of slag per day. The slag pans, after filling, are allowed to stay in the slag hood until the slag is crusted over on top and is no longer emitting smoke and fume. The pans are then moved to the designated cooling area adjacent to the furnace water-cooling tank. The forklift travels across a heavily contaminated floor during this part of the trip. After cooling for an additional 8 hours or so, the pans are moved to the slag storage building where the slag is dumped.

Slag pans moved from slag tap to cooling area = 90 feet
From cooling area to slag storage building = 110 feet
From slag storage building to empty pan holding area = 225 feet
From empty pan holding area to slag tap = 80 feet

Total round trip = 505 feet x 24 pans = 12,120 feet forklift travel in the furnace building and local area per day

SECTION II.A.2(b): Movement of lead buttons to refinery area:

Frequency of operation: 24 hours per day, 7 days per week

The furnace produces an average of 36 lead buttons per day. The lead buttons are transported by forklift to storage in the lead refinery area. The distance from the furnace to the storage area is 160 feet. The forklift travels across a heavily contaminated floor during the trip to the refinery storage area.

Total round trip = 320 feet x 36 buttons = 11,520 feet forklift travel in the furnace building and refinery area per day

SECTION II.A.2(c): Furnace Charging:

SECTION II.A.2(c)(1): Lead-bearing materials:

Frequency of operation: 24 hours per day, 7 days per week

Lead-bearing materials are moved from the feed material storage building to the feed weigh hopper on the furnace, a distance of 125 feet (2 turnarounds), by front-end loader. The front-end loader travels across a heavily contaminated floor (floor is continuously wet) during the entire trip and return. The furnace accepts about 51 loads of lead-bearing materials per day.

Total round trip = 250 feet x 51 charges = 12,750 feet front-end loader travel in the furnace building and feed material storage building per day

SECTION II.A.2(c)(2): Furnace fluxes:

Frequency of operation: 24 hours per day, 7 days per week

Scrap cast iron and limestone are stockpiled near the furnace and are shoveled into the front-end loader bucket per the charge sequence. The furnace requires 17 charges of cast iron and limestone per day. The front-end loader moves the cast iron and limestone to the feed weigh hopper on the furnace, a distance of 35 feet (no turnarounds). The front-end loader travels across a heavily contaminated floor (floor is continuously wet) during the entire trip and return.

Total round trip = 70 feet x 17 charges = 1,190 feet front-end loader travel in the furnace building per day

Each shift is required to haul cast iron and limestone from the storage area to the ready bins at the furnace. One load of each is sufficient for each shift. The distance the front-end loader must travel is 1,025 feet each way for a total of 2,050 feet each trip. 1,910 feet of each round trip is traveled on the yard and 140 feet is in the furnace building, where the floor, though wet, is heavily contaminated. If the crew does not clean the tires of the front-end loader properly, tracking of contaminated material can be severe.

Total round trip = 1,025 feet x 6 trips/day = 6,150 feet

840 feet front-end loader travel in the furnace building per day

5,310 feet front-end loader travel in the yard per day

SECTION II.A.2(c)(3): Coke:

Frequency of operation: 24 hours per day, 7 days per week

There are about 26 charges of coke per day fed to the furnace. The coke is moved from the coke storage bin at the south end of the feed material storage building to the feed weigh hopper on the furnace, a distance of 185 feet (2 turnarounds), by front-end loader. The front-end loader travels across a heavily contaminated floor (floor is continuously wet) during the entire trip and return. The first 125 feet of each trip is traveled in the furnace building and the last 60 feet is in the yard area.

Total round trip:

250 feet x 26 charges = 6,500 feet front-end loader travel in the furnace building per day

120 feet x 26 charges = 3,120 feet front-end loader travel in outside yard per day

Total trip distance = 9,620 feet per day

SECTION II.A.3: Lead Refinery Operations:

SECTION II.A.3(a): Refining of lead:

Frequency of operation: 24 hours per day, 6 days per week

The lead refinery consists of 4 75-ton capacity melting kettles of which one is reserved for only calcium alloys and is not in general use. The lead refinery processes about 6 batches per week, working Sunday through Friday.

Lead buttons from the furnace are stored at the south end of the new refining building. The buttons are transported by forklift to the kettles as needed to begin a new batch. After staging at the kettles, the buttons are loaded into the kettles using an overhead bridge crane.

The forklift must travel an average of 80 feet one way to bring the buttons to the kettles for loading. Each batch uses about 43 buttons.

160 feet x 43 buttons x .86 kettles per day = 5,917 feet forklift travel in the refinery building per day

After the batch is melted, an agitator is installed in the kettle and the refining process starts. During the refining process, various chemicals are added to the batch for removal of impurities. Movement of chemicals, which are generally in bags on pallets, to the kettles is by forklift. Each batch requires about 6 forklift trips to bring chemicals, one of which is from the warehouse near the maintenance shop to the refinery area.

5 trips @ 130 feet round trip = 650 feet forklift travel in the refinery building per day

1 trip @ 250 feet round trip = 250 feet forklift travel in the refinery building per day

1 trip @ 140 feet round trip = 140 feet forklift travel in the furnace building per day

1 trip @ 750 feet round trip = 750 feet forklift travel on the yard per day

During the lead refining process, impurities are removed from the kettles in the form of "dross". This material is generally a dry powder which contains a high percentage of lead (as much as 85% lead) along with smaller amounts of other metals such as antimony, tin, copper, nickel and others.

This "dross" is skimmed from the surface of the lead in the refinery kettles into steel boxes that are positioned inside enclosed, ventilated hoods.

After a box is filled, it is moved by forklift to the feed material storage building where it is dumped and mixed with the furnace charge materials.

Each kettle generates an average of 5 boxes of dross. There is an average of 6 kettles processed per week. See SECTION II.B.1(f) for a description of refinery dross dumping operations.

SECTION II.A.3(b): Casting of lead into finished form:

Frequency of operation: 8 hours per day, 5 days per week

Lead alloyed to customer specification is cast into either 65-pound pigs using a casting machine or into 1-ton blocks.

The lead is cast at as low a temperature as is possible, with antimonial alloys being cast at 850-900° F, soft lead at about 800° F and calcium alloys at 1050-1100° F.

Each cast of pigs - 65 bundles of 35 pigs - or each cast of blocks - 70 1-ton blocks - is moved from the casting operation to the lead warehouse using a forklift. On average, 1-1/2 kettles each week are cast in blocks and 4-1/2 kettles each week are cast in pigs.

Block casting:

70 trips @ 280 feet round trip = 19,600 feet forklift travel in the refinery building per cast

1-1/2 kettles cast in blocks x 19,600 feet of travel each = 29,400 feet traveled each week.

Pig casting:

65 trips @ 180 feet round trip = 11,700 feet forklift travel in the refinery building per cast

4-1/2 kettles cast in pigs x 11,700 feet of travel each = 52,650 feet traveled each week.

Total distance traveled for forklift traffic:

29,400 feet + 52,650 feet = 82,050 feet divided by 5 days = 16,410 feet per average day, 5 days per week.

SECTION II.B: Support Operations Materials Handling:

SECTION II.B.1: Feed Building Materials Handling Operations:

SECTION II.B.1(a): Drum dumping (raw materials):

Frequency of operation: 8 hours per day, 5 days per week

Miscellaneous lead-bearing or lead-contaminated materials such as pasted plates, scrap oxide, sump mud, floor sweepings and drosses are received in sealed drums. The drums are staged in the old refining building.

Each truckload contains about 50 drums on about 22 pallets. About 3 truckloads are received each week; about 150 drums per week must be handled. Drums of incoming miscellaneous materials are dumped in the feed materials storage building as received or as time permits.

The distance from the drum staging area to the feed materials storage building is about 160 feet one way. The forklift moves about 66 pallets per week, or about 13 pallets per day. 105 feet of the 160-foot total trip is in the furnace building and the remaining 55 feet is in the feed materials storage building. The floor is heavily contaminated (floor is continuously wet) in these areas.

22 pallets x 3 loads per week = 13.2 pallets of drums average per day.

210 feet x 13.2 trips = 2,772 feet in furnace building per day
110 feet x 13.2 trips = 1,452 feet in feed storage building per day

About 1 truckload per week of self-dumping hoppers is received from one customer; each truck contains 13 hoppers. These hoppers are always handled and dumped as received and immediately returned to the customer.

13 hoppers x 1 load per week = 2.6 hoppers per day

210 feet x 2.6 trips = 546 feet in furnace building per day
110 feet x 2.6 trips = 286 feet in feed storage building per day

SECTION II.B.1(b): Battery wrecker material movement from discharge area:

Frequency of operation: 9 hours per day, 5 days per week

The front-end loader in the feed materials storage building is used to move the battery wrecker material from the discharge points to the storage areas in the building.

The battery wrecker produces about 265,000 pounds of battery wrecker material per day, 5 days per week. The front-end loader will move an average of 4,000 pounds of material per trip. The movement of materials to the first storage area is about 65 feet, and about 66 bucket loads are required to be moved each day.

66 loads x 130 feet (round trip) = 8,580 feet per day in feed materials building

SECTION II.B.1(c): Battery wrecker material movement for turnover and drying:

Frequency of operation: 8 hours per day, 7 days per week

The front-end loader in the feed materials storage building is used to move the battery wrecker material from one storage area to another in the building to facilitate mixing and drying. This process is a 7 day-per-week operation.

Each designated storage area holds about 1,600,000 pounds of battery wrecker material. It takes the battery wrecker operation about 6 running days to fill one area at about 265,000 pounds of wrecker material produced per operating day (works out to be 9 calendar days).

The material movement plan calls for one area to be moved each day in addition to the daily movement of battery wrecker material produced.

A front-end loader bucket of stockpiled, mixed battery wrecker material weighs, on average, 5,000 pounds. To move one designated storage area requires approximately 320 loader trips. The average trip from one storage area to the next is 65 feet one way.

To move battery wrecker material in planned rotation:

320 trips x 130 feet = 41,600 feet in feed material storage building per day.

SECTION II.B.1(d): Battery wrecker material loading for shipment:

Frequency of operation: 8 hours per day, 5 days per week

Requirements are to ship 7 loads per week of battery wrecker material to the plant in Tennessee. The trucks that transport battery wrecker material are loaded on the south yard between the feed material storage building and slag storage building.

Each truck requires 10 loader buckets of battery wrecker material to reach maximum gross weight for shipment. The material is loaded from the storage area immediately inside the door of the feed material storage building (this is the storage area for the driest material in the building).

Each trip consists of 120 feet in the feed materials storage building (must turn around, back and fill)through the wheel wash to the tractor-trailer truck.

1.4 loads per day x 240 foot round trip x 10 bucket loads = 3,360 feet in the feed material storage building per day.

SECTION II.B.1(e): Battery wrecker material movement for mixing furnace charges:

Frequency of operation: 8 hours per day, 7 days per week

Each day the front-end loader in the feed material storage building is used to mix the charge to feed into the blast furnace. As the furnace requires as many as 60 front-end loader bucket loads of lead-bearing material per day to be charged, this is the amount of material that must be pre-mixed each day, 7 days per week.

The pre-mix operation takes place in the bin immediately inside the door to the feed material storage building, and the mix is moved to the ready feed bin just outside the door to the feed material storage building.

The mixed charge consists of battery wrecker material, drosses, battery plant scrap, low-grade-lead-contaminated materials, sump muds, flue dust (from afterburner and cooling loop cleanout), miscellaneous lead scrap and any other lead-bearing materials generated in-house or purchased.

The loader travels about a 75-foot round trip per bucket load during this operation.

<u>75 feet x 60 bucket loads = 4,500 feet traveled per day in the feed materials storage building</u>

<u>SECTION II.B.1(f): Refinery dross dumping:</u>

During the lead refining process, impurities are removed from the kettles in the form of "dross". This material is generally a dry powder which contains a high percentage of lead (as much as 85% lead) along with smaller amounts of other metals such as antimony, tin, copper, nickel and others.

This "dross" is skimmed from the surface of the lead in the refinery kettles into steel boxes that are positioned inside enclosed, ventilated hoods.

After a box is filled, it is moved by forklift to the feed material storage building where it is dumped and mixed with the furnace charge materials.

Each kettle generates an average of 5 boxes of dross. There is an average of 6 kettles processed per week. The refinery operates 6 days per week.

Dross dumping is a very dusty process, and is potentially a prime source of fugitive emissions, though only 5 boxes per day are dumped over a 24-hour period. The distance traveled in the refining area on the way to the feed material storage building is 175 feet one way and the distance traveled in the feed material storage building is 45 feet one way.

Frequency of operation: 24 hours per day, 6 days per week

<u>350 feet x 5 dross boxes = 1,750 feet traveled per day in the refinery area</u>

<u>90 feet x 5 dross boxes = 450 feet traveled per day in the feed materials storage building</u>

<u>SECTION II.B.2: Shipping/receiving warehouse operations:</u>

<u>SECTION II.B.2(a): Loading finished metal for shipment:</u>

Frequency of operation: 8 hours per day, 5 days per week

There is an average of 4 trailers of finished lead loaded per day, 5 days per week. Each trailer contains about 21 bundles of pigs or 1-ton blocks.

The distance from the warehouse storage areas to the loading ramp varies, but the average is 60 feet. The forklift travels an additional 40 feet on the loading ramp to the trailer.

<u>200 feet (round trip) x 21 x 4 per day = 5,250 feet per day in the warehouse area.</u>

<u>SECTION II.B.2(b): Handling miscellaneous raw materials/metals:</u>

Frequency of operation: 8 hours per day, 5 days per week

4 loads of miscellaneous raw materials in drums and 1 load of incoming blend metals or impure lead are received on average each week.

The materials received are moved to the old refinery building to stage for further handling. The drummed materials are then moved to the feed materials storage building (Section II.B.1(a)) for dumping.

The unloading forklift moves these materials from the trailers to the staging area as follows: the distance moved from the trailer is 40 feet to the warehouse and an additional 75 feet to the staging area.

About 3 truckloads of drummed are received each week. Each truckload contains about 50 drums on about 22 pallets; about 150 drums per week must be handled. Drums of incoming miscellaneous materials are dumped in the feed materials storage building as received or as time permits.

About 1 truckload per week of self-dumping hoppers is received from one customer; each truck contains 13 hoppers. These hoppers are always handled and dumped as received and immediately returned to the customer.

About 1 truckload per week of blend metals or impure lead is received. These materials can be in the form of 1 ton blocks or bundles of pigs or pallets of pigs. Some of these materials are stored in the warehouse and some are stored in the old refining building.

Drums (0.6 loads per day)

<u>230 feet x 22 x 0.6 = 3,036 feet per day in warehouse/old refining</u>

Hoppers (0.2 loads per day)

<u>230 feet x 13 x 0.2 = 598 feet per day in warehouse/old refining</u>

Blend metals (0.2 loads per day)

<u>230 feet x 13 x 0.2 = 598 feet per day in warehouse/old refining</u>

<u>Total movement in warehouse/old refining building = 4,232 feet per day</u>

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FUTURE OPERATING LEVEL

The current scale is located on the south side of the plant. All the trucks entering and leaving the plant have to be weighed for before and after weighing. Hence, every truck entering from the north side has to travel to the south side of the plant where the truck scale is located. After unloading in the appropriate area the truck has to travel again to the south side for weighing before exiting the plant.

The truck scale and the entrance will be relocated to the 65th street. This will reduce the total miles traveled inside the plant by the trucks. With the proposed location of the truck scale, in the future the trucks will be weighed at the truck scale adjacent the gate before entering and leaving the gate.

SECTION I: TRUCK TRAFFIC WITHIN PLANT BOUNDARIES

SECTION I.A: MATERIALS RECEIVING:

SECTION I.A.1: Raw Materials Received:

SECTION I.A.1(a): Spent batteries received:

Spent batteries are received via tractor-trailer units. Each truck proceeds to the scale. After weighing, the trucks drive to the north yard area where the trailers are dropped. The tractor hooks up to an outgoing trailer and drives out the gate.

With the relocation of the truck scale and gate to the 65th street entrance, the trucks will not enter the plants, and this segment of the traffic will be completely eliminated.

In plant Driver

The in-plant driver hooks to the trailers, drives to the scale, weighs the trailer heavy and proceeds to the battery wrecker dock for unloading. After unloading, the trailer is moved to the scale for a tare weight and is either driven to the loading dock for finished metal loading or is returned to the north yard area empty for return to the customer or freight forwarder. Trailers that are loaded with finished metal are returned to the scale for gross weight and are moved to the north yard to wait for customer pickup. Of the 19 trailers received per day, 9 are loaded with finished metal and 10 are returned empty.

Number of trucks per day: 19

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

From north yard to the scale to loading dock: 800 feet
From loading dock back to scale : 760 feet
From Scale to refining = 500 feet
From refining to scale = 380 feet

(10 trailers per day) From scale to loading dock back to scale: (800+760) = 1,560 feet
(9 trailers per day) From scale to refining back to scale: (500+380)= 880 feet

Total distance traveled (on yard) per day: 23,520 @ 14 wheels

The in-plant driver makes some deadhead trips back and forth from the battery wrecker dock to the north yard area and returns to the battery wrecker dock - about 9 round trips per day @ 1,350 feet each trip

Total distance traveled (on yard) per day: 12,150 feet @ 6 wheels

<u>SECTION I.A.1(b): Miscellaneous raw materials received</u>:

Additional raw materials received include battery plant scrap, scrap lead, reclaimed bullet and shot lead and lead drosses. On average, 1 loads per day is received. About 40% of the incoming loaded trailers are dropped after weighing and are handled and unloaded as time permits.

This traffic is totally eliminated since the north yard area is located adjacent to the gate.

<u>In plant Driver</u>

The in plant driver hooks the miscellaneous raw material trailer, drives to the scale, weighs the trailer heavy and proceeds to the loading dock (in the refinery area) for unloading. After unloading, the trailer is moved to the scale for a tare weight and either driven to the refinery for finish metal loading or return to the north yard area empty. Trailers that are loaded with finished metal are returned to the scale for gross weight and are moved to the north yard to wait for customer pickup. Of the 0.4 trailers received per day, 0.2 are loaded with finished metal and 0.4 are returned empty.

Number of trucks per day: 0.4

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day: 880 feet

Total distance traveled (on yard) per day: 880X 0.4 feet = 352 feet @ 14 wheels

The remainder of the loads received each day is weighed in and out but the trailers are not dropped - the tractor-trailer combination remains intact throughout the entire time in the plant.(Douglas battery)

Number of trucks per day: 1

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

From scale to loading dock at refinery (turn around): 500 feet
From refinery loading dock to scale: 380 feet

Total distance traveled (on yard) per day: (500+380)*1 = 880 feet @ 18 wheels

SECTION I.A.2: Operating Stores Received:

SECTION I.A.2(a): Bulk deliveries of processing chemicals:

There is an average of two load of bulk chemicals received per day, 5 days per week. These materials are (on average) 4 loads of bulk soda ash, 4 loads of liquid caustic soda and 2 load of either refinery chemicals, bagged hydrated lime, ferric chloride liquid other processing chemicals. All bulk deliveries are weighed on our scale before unloading. Since 4 of the 5 loads delivered are unloaded in the same location, the same distances are used for all 5 loads received.

Number of trucks per day: 2

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

From scale to unloading area (between refinery and wastewater treatment plant)(turn around twice): 500 feet
From unloading area to scale (no turns): 280 feet

Total distance traveled (on yard) per day: (500+280)*2 = 1560 feet @ 18 wheels

SECTION I.A.2(b): Bulk deliveries of furnace coke and fluxes:

We receive 2.5 loads of coke per week, 1 load of scrap iron and 1 load of limestone per week. All items pass across the scale before unloading. The coke is unloaded into the coke storage area south of the feed material storage building and the limestone and iron is unloaded and stored in the storage building near the battery wrecker unloading dock.

Coke (2.5 loads per week):

Number of trucks per day: 0.5

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

From scale to storage area (must turn truck around)
From storage area to scale
Distance : 1,940feet

Total distance traveled (on yard) per day: 1,940* 0.5 = 970 feet @ 18 wheels

Scrap iron (1 load per week) and limestone (1 load per week):

Number of trucks per day: 0.4

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

From gate to storage area and from storage area to scale and out = 1,360 feet

Total distance traveled (on yard) per day: 1,360*0.4= 544 feet @ 18 wheels

SECTION I.A.2(c): Miscellaneous plant deliveries:

Repair materials and parts, miscellaneous supplies, gasoline and diesel fuel and other items are usually delivered on 2 axle trucks. Most deliveries are to the maintenance shop area or the fueling area adjacent to the truck scales.

The average is about 5 deliveries per day, 5 days per week.

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

From gate to scale: 200 feet
From scale to gate: 200 feet

Total distance traveled (on yard) per day: 2,000 feet @ 6 wheels

GRAND TOTAL DISTANCE TRAVELED PER DAY	**18 WHEELS = 3,954 FEET**
FOR MATERIALS RECEIVED:	14 WHEELS = 23,872 FEET
	6 WHEELS = 14,150 FEET

SECTION I.B: MATERIALS SHIPPING:

SECTION I.B.1: Lead Shipping: (NOTE: Most shipping, which is to a local customer or picked up by customers, is detailed above.)

SECTION I.B.2: Miscellaneous lead shipments (flashings, shot, small orders of pigs, etc.):

We ship about 1 load per day of miscellaneous items to local customers. These items are usually shipped on our small box truck or are picked up by the customers in small trucks. Items are generally loaded at the area adjacent to the scale and maintenance shop.

The average is about 1 shipment per day, 5 days per week.

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

From gate to scale: 200 feet
From scale to gate: 200 feet

Total distance traveled (on yard) per day: 400 feet @ 6 wheels

SECTION I.B.3: Battery case plastic:

The customer brings in an empty trailer and drops it in the north yard area. After dropping the empty, he hooks to a full trailer of plastic and exits the plant.

The average is about 6 trailers per week (1.2 per day).

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

Customer tractor/trailer (sander lead Pick up after hours will use the old gate) :

From old gate to north yard area : 375
From north yard area to old gate : 340 feet

Total distance traveled (on yard) per day: (375+340)*1.2 = 858 feet @ 18 wheels

Yard tractor/customer trailer:
The reclaimed polypropylene plastic from the battery wrecker system is pneumatically conveyed (saturated wet) to a box trailer. When the trailer is full, it is pulled from the area between the battery wrecker building and the wastewater treatment plant. The full trailer is temporarily dropped in the immediate area and a pre-positioned, pre-tare-weighed empty trailer is positioned at the end of the pneumatic pipe for filling. The full trailer is re-hooked to the yard tractor and moved to the scales for heavy weighing. After weighing, the trailer full of plastic is dropped at the north yard area to await customer pickup.

From north yard area to scale:
From scale to plastic trailer loading area (turn around):
Switching trailers:
From plastic trailer loading area to scale:
From scale to north yard (turn around twice)
Total Distance per trip = 2,160

No of trips per day = 2.4

Total distance traveled (on yard) per day: 2,160*2.4 = 5,184 feet @ 14 wheels

SECTION I.B.4: Barren blast furnace slag for disposal:

Barren blast furnace slag is loaded onto a dump trailer from the slag storage bins for transport to an approved disposal site. Transporter tractor/trailer enters the plant and proceeds to the scale for a tare weight. The truck then drives to the slag storage area for loading. After loading, the truck again is weighed and leaves the plant.

The average is about 2.0 trailers per week (0.4 per day), 5 days per week.

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day:

From scale to storage area
From storage area to scale
Distance traveled per trip = 1060 feet

Total distance traveled (on yard) per day: 1,060x 0.4 = 424 feet @ 18 wheels

SECTION I.B.5: Battery wrecker material shipped to other plant:

Battery wrecker material is shipped from our plant to another plant in Tennessee at an average of 7 loads per week. Some of the material is transported on our dump trailers and some using outside carriers' dump trailers. Battery wrecker material is loaded onto the dump trailers in the area near the slag storage bins.

Transporter tractor/trailer enters the plant and proceeds to the scale for a tare weight. The truck then drives to the designated loading area for loading. After loading, the truck again is weighed and leaves the plant.

The average is about 7 trailers per week (1.4 per day), 5 days per week.

Frequency of operation: 8 hours per day, 5 days per week

Distances traveled in plant per operating day: 1,060 per trip

Total distance traveled (on yard) per day: 1,060x 1.4 = 1,484 feet @ 18 wheels

GRAND TOTAL DISTANCE TRAVELED PER DAY FOR MATERIALS SHIPPED:	**18 WHEELS = 2,766 FEET** **14 WHEELS = 5,184 FEET** **6 WHEELS = 400 FEET**

SECTION II: MOBIL EQUIPMENT (FORKLIFT & LOADER) TRAFFIC WITHIN PLANT BOUNDARIES

SECTION II.A: PLANT PRODUCTION OPERATIONS - MATERIAL MOVEMENT

SECTION II.A.1: Battery Wrecker Operations:

SECTION II.A.1 (a): Movement of batteries (from the incoming trailers to the feed hopper of the battery wrecker system):

Frequency of operation: 9 hours per day, 5 days per week

Batteries (which are all palletized) are moved from the trailers to temporary storage on the battery wrecker dock. A second forklift moves the pallets from the dock storage area into the feed hopper of the battery wrecker system. Each of the 8 trucks received per day (average) has 20 pallets of batteries (average) for a total of 160 pallets per day, 5 days per week.

Moving batteries from trailers to dock = 40 feet each way for a total of 80 feet times 160 pallets = 9,600 feet per day forklift movement in the battery wrecker building.

Moving batteries from dock to feed hopper = 70 feet each way for a total of 140 feet times 160 pallets = 11,200 feet per day forklift movement in the battery wrecker building (this includes stacking pallets for return to customer or for disposal).

SECTION II.A.1 (b): Salvaged cardboard:

Frequency of operation: 9 hours per day, 5 days per week

The battery wrecker operation produces about 1 bale of cardboard per day, 5 days per week. The unloading forklift moves the bale of cardboard to the edge of the battery wrecker building, which is a trip of about 100 feet from the unloading area with a 100 foot return trip. One of the yard forklifts moves the bale from the battery wrecker building to the cardboard storage area. This trip is about 425 feet one way. The forklift that usually transports the cardboard on the yard is staged from the wastewater treatment plant and travels 770 feet to get to the bale, with a return from the cardboard storage area to the wastewater treatment plant of 425 feet.

Forklift movement in wrecker building: 200 feet per day
Forklift movement on yard: 3,240 feet per day

SECTION II.A.1(c): Cleanup activities:

Frequency of operation: 9 hours per day, 5 days per week

The battery wrecker produces about 3 totes of sump cleanings and floor cleanup material per day. This material is transported to the feed material storage building where it is dumped and mixed with furnace feed material.
The unloading forklift takes the materials to the edge of the battery wrecker building and returns to the unloading area, a trip of about 100 feet each way, twice per day. The yard forklift, generally staged at the wastewater treatment area, travels to the battery wrecker building, a distance of about 275 feet one way, to collect the totes. The yard forklift then transports the totes to the feed material storage building. The trip to the feed material storage building is about 1125 feet each way, for a total of 2450 feet of forklift movement on the yard and 550 feet in the furnace and feed material storage buildings.

Forklift movement in wrecker building: 600 feet per day
Forklift movement on yard: 3,675 feet per day
Forklift movement in furnace and feed material storage building: 825 feet per day

SECTION II.A.2: Furnace Operations:

SECTION II.A.2(a): Movement of slag pans from furnace to slag storage building:

Frequency of operation: 24 hours per day, 7 days per week

The furnace produces about 24 pans of slag per day. The slag pans, after filling, are allowed to stay in the slag hood until the slag is crusted over on top and is no longer emitting smoke and fume. The pans are then moved to the designated cooling area adjacent to the furnace water-cooling tank. The forklift travels across a heavily contaminated floor during this part of the trip. After cooling for an additional 8 hours or so, the pans are moved to the slag storage building where the slag is dumped.

Slag pans moved from slag tap to cooling area = 90 feet
From cooling area to slag storage building = 110 feet
From slag storage building to empty pan holding area = 225 feet
From empty pan holding area to slag tap = 80 feet

Total round trip = 505 feet x 24 pans = 12,120 feet forklift travel in the furnace building and local area per day

SECTION II.A.2(b): Movement of lead buttons to refinery area:

Frequency of operation: 24 hours per day, 7 days per week

The furnace produces an average of 36 lead buttons per day. The lead buttons are transported by forklift to storage in the lead refinery area. The distance from the furnace to the storage area is 160 feet. The forklift travels across a heavily contaminated floor during the trip to the refinery storage area.

Total round trip = 320 feet x 36 buttons = 11,520 feet forklift travel
in the furnace building and refinery area per day

SECTION II.A.2(c): Furnace Charging:

SECTION II.A.2(c)(1): Lead-bearing materials:

Frequency of operation: 24 hours per day, 7 days per week

Lead-bearing materials are moved from the feed material storage building to the feed weigh hopper on the furnace, a distance of 125 feet (2 turnarounds), by front-end loader. The front-end loader travels across a heavily contaminated floor (floor is continuously wet) during the entire trip and return. The furnace accepts about 51 loads of lead-bearing materials per day.

Total round trip = 250 feet x 51 charges = 12,750 feet front-end
loader travel in the furnace building and feed material storage
building per day

SECTION II.A.2(c)(2): Furnace fluxes:

Frequency of operation: 24 hours per day, 7 days per week

Scrap cast iron and limestone are stockpiled near the furnace and are shoveled into the front-end loader bucket per the charge sequence. The furnace will require 12 charges of cast iron and limestone per day. The front-end loader moves the cast iron and limestone to the feed weigh hopper on the furnace, a distance of 35 feet (no turnarounds). The front-end loader travels across a heavily contaminated floor (floor is continuously wet) during the entire trip and return.

Total round trip = 70 feet x 12 charges = 840 feet front-end loader
travel in the furnace building per day

Each shift is required to haul cast iron and limestone from the storage area to the ready bins at the furnace. 0.7 load of each will be sufficient for each shift. The distance the front-end loader must travel is 1,025 feet each way. 955 feet of trip is traveled on the yard and 140 feet is in the furnace building.

840 feet front-end loader travel in the furnace building per day

Distance Travelled by the front-end loader travel in the yard per day

=955*1.4 load per shift *3 shift per day = 4,011 feet per day.

SECTION II.A.2(c)(3): Coke:

Frequency of operation: 24 hours per day, 7 days per week

There are about 13 charges of coke per day fed to the furnace. The coke is moved from the coke storage bin at the south end of the feed material storage building to the feed weigh hopper on the furnace, a distance of 185 feet (2 turnarounds), by front-end loader. The front-end loader travels across a heavily contaminated floor (floor is continuously wet) during the entire trip and return. The first 125 feet of each trip is traveled in the furnace building and the last 60 feet is in the yard area.

Total round trip:

250 feet x 13 charges = 3,250 feet front-end loader travel in the furnace building per day

120 feet x 13 charges = 1,560 feet front-end loader travel in outside yard per day

SECTION II.A.3: Lead Refinery Operations:

SECTION II.A.3(a): Refining of lead:

Frequency of operation: 24 hours per day, 6 days per week

The lead refinery consists of 4 75-ton capacity melting kettles of which one is reserved for only calcium alloys and is not in general use. The lead refinery processes about 6 batches per week, working Sunday through Friday.

Lead buttons from the furnace are stored at the south end of the new refining building. The buttons are transported by forklift to the kettles as needed to begin a new batch. After staging at the kettles, the buttons are loaded into the kettles using an overhead bridge crane.

The forklift must travel an average of 80 feet one way to bring the buttons to the kettles for loading. Each batch uses about 43 buttons.

160 feet x 43 buttons x .86 kettles per day = 5,917 feet forklift travel in the refinery building per day

After the batch is melted, an agitator is installed in the kettle and the refining process starts. During the refining process, various chemicals are added to the batch for removal of impurities. Movement of chemicals, which are generally in bags on pallets, to the kettles is by forklift. Each batch requires about

6 forklift trips to bring chemicals, one of which is from the warehouse near the maintenance shop to the refinery area.

5 trips @ 130 feet round trip = 650 feet forklift travel in the refinery building per day

1 trip @ 250 feet round trip = 250 feet forklift travel in the refinery building per day

1 trip @ 140 feet round trip = 140 feet forklift travel in the furnace building per day

1 trip @ 750 feet round trip = 750 feet forklift travel on the yard per day

During the lead refining process, impurities are removed from the kettles in the form of "dross". This material is generally a dry powder which contains a high percentage of lead (as much as 85% lead) along with smaller amounts of other metals such as antimony, tin, copper, nickel and others.

This "dross" is skimmed from the surface of the lead in the refinery kettles into steel boxes that are positioned inside enclosed, ventilated hoods.

After a box is filled, it is moved by forklift to the feed material storage building where it is dumped and mixed with the furnace charge materials.

Each kettle generates an average of 5 boxes of dross. There is an average of 6 kettles processed per week. See SECTION II.B.1(f) for a description of refinery dross dumping operations.

SECTION II.A.3(b): Casting of lead into finished form:

Frequency of operation: 8 hours per day, 5 days per week

Lead alloyed to customer specification is cast into either 65-pound pigs using a casting machine or into 1-ton blocks.

The lead is cast at as low a temperature as is possible, with antimonial alloys being cast at 850-900° F, soft lead at about 800° F and calcium alloys at 1050-1100° F.

Each cast of pigs - 65 bundles of 35 pigs - or each cast of blocks - 70 1-ton blocks - is moved from the casting operation to the lead warehouse using a forklift. On average, 1-1/2 kettles each week are cast in blocks and 4-1/2 kettles each week are cast in pigs.

Block casting:

70 trips @ 280 feet round trip = 19,600 feet forklift travel in the refinery building per cast

1-1/2 kettles cast in blocks x 19,600 feet of travel each = 29,400 feet traveled each week.

Pig casting:

65 trips @ 180 feet round trip = 11,700 feet forklift travel in the refinery building per cast

4-1/2 kettles cast in pigs x 11,700 feet of travel each = 52,650 feet traveled each week.

Total distance traveled for forklift traffic:

29,400 feet + 52,650 feet = 82,050 feet divided by 5 days = 16,410 feet per average day, 5 days per week.

SECTION II.B: Support Operations Materials Handling:

SECTION II.B.1: Feed Building Materials Handling Operations:

SECTION II.B.1(a): Drum dumping (raw materials):

Frequency of operation: 8 hours per day, 5 days per week

Miscellaneous lead-bearing or lead-contaminated materials such as pasted plates, scrap oxide, sump mud, floor sweepings and drosses are received in sealed drums. The drums are staged in the old refining building.

Each truckload contains about 50 drums on about 22 pallets. About 3 truckloads are received each week; about 150 drums per week must be handled. Drums of incoming miscellaneous materials are dumped in the feed materials storage building as received or as time permits.

The distance from the drum staging area to the feed materials storage building is about 160 feet one way. The forklift moves about 66 pallets per week, or about 13 pallets per day. 105 feet of the 160-foot total trip is in the furnace building and the remaining 55 feet is in the feed materials storage building. The floor is heavily contaminated (floor is continuously wet) in these areas.

22 pallets x 3 loads per week = 13.2 pallets of drums average per day.

210 feet x 13.2 trips = 2,772 feet in furnace building per day
110 feet x 13.2 trips = 1,452 feet in feed storage building per day

About 1 truckload per week of self-dumping hoppers is received from one customer; each truck contains 13 hoppers. These hoppers are always handled and dumped as received and immediately returned to the customer.

13 hoppers x 1 load per week = 2.6 hoppers per day

210 feet x 2.6 trips = 546 feet in furnace building per day
110 feet x 2.6 trips = 286 feet in feed storage building per day

SECTION II.B.1(b): Battery wrecker material movement from discharge area:

Frequency of operation: 9 hours per day, 5 days per week

The front-end loader in the feed materials storage building is used to move the battery wrecker material from the discharge points to the storage areas in the building.

The battery wrecker produces about 265,000 pounds of battery wrecker material per day, 5 days per week. The front-end loader will move an average of 4,000 pounds of material per trip. The movement of materials to the first storage area is about 65 feet, and about 66 bucket loads are required to be moved each day.

66 loads x 130 feet (round trip) = 8,580 feet per day in feed materials building

SECTION II.B.1(c): Battery wrecker material movement for turnover and drying:

Frequency of operation: 8 hours per day, 7 days per week

The front-end loader in the feed materials storage building is used to move the battery wrecker material from one storage area to another in the building to facilitate mixing and drying. This process is a 7 day-per-week operation.

Each designated storage area holds about 1,600,000 pounds of battery wrecker material. It takes the battery wrecker operation about 6 running days to fill one area at about 265,000 pounds of wrecker material produced per operating day (works out to be 9 calendar days).

The material movement plan calls for one area to be moved each day in addition to the daily movement of battery wrecker material produced.

A front-end loader bucket of stockpiled, mixed battery wrecker material weighs, on average, 5,000 pounds. To move one designated storage area requires approximately 320 loader trips. The average trip from one storage area to the next is 65 feet one way.

To move battery wrecker material in planned rotation:

320 trips x 130 feet = 41,600 feet in feed material storage building per day.

SECTION II.B.1(d): Battery wrecker material loading for shipment:

Frequency of operation: 8 hours per day, 5 days per week

Requirements are to ship 7 loads per week of battery wrecker material to the plant in Tennessee. The trucks that transport battery wrecker material are loaded on the south yard between the feed material storage building and slag storage building.

Each truck requires 10 loader buckets of battery wrecker material to reach maximum gross weight for shipment. The material is loaded from the storage area immediately inside the door of the feed material storage building (this is the storage area for the driest material in the building).

Each trip consists of 120 feet in the feed materials storage building (must turn around, back and fill)through the wheel wash to the tractor-trailer truck.

1.4 loads per day x 240 foot round trip x 10 bucket loads = 3,360 feet in the feed material storage building per day.

SECTION II.B.1(e): Battery wrecker material movement for mixing furnace charges:

Frequency of operation: 8 hours per day, 7 days per week

Each day the front-end loader in the feed material storage building is used to mix the charge to feed into the blast furnace. As the furnace requires as many as 60 front-end loader bucket loads of lead-bearing material per day to be charged, this is the amount of material that must be pre-mixed each day, 7 days per week.

The pre-mix operation takes place in the bin immediately inside the door to the feed material storage building, and the mix is moved to the ready feed bin just outside the door to the feed material storage building.

The mixed charge consists of battery wrecker material, drosses, battery plant scrap, low-grade-lead-contaminated materials, sump muds, flue dust (from afterburner and cooling loop cleanout), miscellaneous lead scrap and any other lead-bearing materials generated in-house or purchased.

The loader travels about a 75-foot round trip per bucket load during this operation.

<u>75 feet x 60 bucket loads = 4,500 feet traveled per day in the feed materials storage building</u>

<u>SECTION II.B.1(f): Refinery dross dumping:</u>

During the lead refining process, impurities are removed from the kettles in the form of "dross". This material is generally a dry powder which contains a high percentage of lead (as much as 85% lead) along with smaller amounts of other metals such as antimony, tin, copper, nickel and others.

This "dross" is skimmed from the surface of the lead in the refinery kettles into steel boxes that are positioned inside enclosed, ventilated hoods.

After a box is filled, it is moved by forklift to the feed material storage building where it is dumped and mixed with the furnace charge materials.

Each kettle generates an average of 5 boxes of dross. There is an average of 6 kettles processed per week. The refinery operates 6 days per week.

Dross dumping is a very dusty process, and is potentially a prime source of fugitive emissions, though only 5 boxes per day are dumped over a 24-hour period. The distance traveled in the refining area on the way to the feed material storage building is 175 feet one way and the distance traveled in the feed material storage building is 45 feet one way.

Frequency of operation: 24 hours per day, 6 days per week

<u>350 feet x 5 dross boxes = 1,750 feet traveled per day in the refinery area</u>

<u>90 feet x 5 dross boxes = 450 feet traveled per day in the feed materials storage building</u>

<u>SECTION II.B.2: Shipping/receiving warehouse operations:</u>

<u>SECTION II.B.2(a): Loading finished metal for shipment:</u>

Frequency of operation: 8 hours per day, 5 days per week

There is an average of 4 trailers of finished lead loaded per day, 5 days per week. Each trailer contains about 21 bundles of pigs or 1-ton blocks.

The distance from the warehouse storage areas to the loading ramp varies, but the average is 60 feet. The forklift travels an additional 40 feet on the loading ramp to the trailer.

200 feet (round trip) x 21 x 4 per day = 5,250 feet per day in the warehouse area.

SECTION II.B.2(b): Handling miscellaneous raw materials/metals:

Frequency of operation: 8 hours per day, 5 days per week

4 loads of miscellaneous raw materials in drums and 1 load of incoming blend metals or impure lead are received on average each week.

The materials received are moved to the old refinery building to stage for further handling. The drummed materials are then moved to the feed materials storage building (Section II.B.1(a)) for dumping.

The unloading forklift moves these materials from the trailers to the staging area as follows: the distance moved from the trailer is 40 feet to the warehouse and an additional 75 feet to the staging area.

About 3 truckloads of drummed are received each week. Each truckload contains about 50 drums on about 22 pallets; about 150 drums per week must be handled. Drums of incoming miscellaneous materials are dumped in the feed materials storage building as received or as time permits.

About 1 truckload per week of self-dumping hoppers is received from one customer; each truck contains 13 hoppers. These hoppers are always handled and dumped as received and immediately returned to the customer.

About 1 truckload per week of blend metals or impure lead is received. These materials can be in the form of 1 ton blocks or bundles of pigs or pallets of pigs. Some of these materials are stored in the warehouse and some are stored in the old refining building.

Drums (0.6 loads per day)

230 feet x 22 x 0.6 = 3,036 feet per day in warehouse/old refining

Hoppers (0.2 loads per day)

230 feet x 13 x 0.2 = 598 feet per day in warehouse/old refining

Blend metals (0.2 loads per day)

230 feet x 13 x 0.2 = 598 feet per day in warehouse/old refining

Total movement in warehouse/old refining building = 4,232 feet per day

Appendix D
Standard Operating Procedures

STANDARD OPERATING PROCEDURES FOR THE CONTROL OF FUGITIVE EMISSIONS

GULF COAST RECYCLING, INC.
1901 NORTH 66th STREET
TAMPA, FL 33619

REVISED MAY 3, 1999

File:FDSOP

Introduction

Gulf Coast Recycling, Inc. (GCR) is a secondary lead smelter. The facility processes spent lead acid batteries. Battery components are separated and the lead bearing materials are smelted in a blast furnace rendering a product known as blast lead. The blast lead is further refined to produce specific grades of lead for the manufacture of new batteries.

The facility has a Blast Furnace Operation, Refining Operation, Slag Fixation Operation, Battery Breaking/Recycling Operation, and a Materials Storage and Handling Area for lead bearing materials.

GCR is committed to the operation of its facility in a manner which will comply with applicable federal, state, and county environmental regulations and in harmony with the surrounding community. GCR has operated at its present location for more than thirty five (35) years and expects to continue operation well into the next century. Regulatory compliance is a corporate commitment. This commitment is vigorously reinforced throughout the company; from the top down.

Purpose

The purpose of this plan is to maintain effective fugitive controls to meet the requirements of the U.S. Environmental Protection Agency (EPA), the Florida Department of Environmental Protection (FDEP), and the Environmental Protection Commission of Hillsborough County (EPC).

The EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP) From Secondary Lead Smelting (40 CFR 63 Subpart X) apply to this facility. This rule requires the owner to prepare and operate in accordance with a standard operating procedures (SOP) manual that describes the measures used to control fugitive emissions at the facility. The NESHAP requirements are also referred to as EPA Maximum Achievable Control Technology (MACT) standards for secondary lead smelters.

FDEP rule 62-296.601 requires lead processing operations located within lead non-attainment or maintenance areas to employ reasonably available control technology (RACT) to control potential fugitive emissions at the facility. The RACT rule addresses measures that apply to areas and activities that are not addressed by the MACT rule or are more stringent than the MACT requirements. These measures are also covered in this SOP. Additionally, GCR entered into a Consent Order (CO), case No. 95-0728SKW057, with the EPC which has specific requirements which are also incorporated into this SOP manual.

The EPC is the administrator of the aforementioned EPA and FDEP regulations and is authorized to issue facility construction and operation permits. All of the NESHAP, MACT, RACT and CO requirements will be incorporated as specific conditions into an air construction permit to be issued by the County to GCR. This SOP manual will also be incorporated, by reference, as a specific condition.

Potential sources of fugitive emissions at the facility include:

(1) Plant Roadways and Parking Areas

(2) Battery Recycling (battery breaking)

(3) Blast Furnace Area

(4) Refining and Casting Area

(5) Materials Storage and Handling Area (Group Pile)

(6) Slag Fixation Operation

(7) Unpaved Outside Areas

Operating Procedures

The following procedures will be used at GCR, at a minimum, for the control of fugitive emissions:

Plant Roadways

Vehicular traffic areas are all paved and are periodically wetted down by a ten zone (see attached plot plan) automatic sprinkler system. Each zone is setup with a timer and control valve that cycles the zone on several times a day. The timers are electronic programmable timers in lockable plastic cases. Sprinkler operation will be noted on the Sprinkler Operation Log sheet (see Attachment 1). The sprinkler zones and cycles are as follows:

Zone	Location	On/Off Time
1	Office Parking Lot Fence	10 Min./80 Min.
2	Maintenance Shop/Roofed Parking Area, Front Gate, and Hygiene Building	10 Min./80 Min.
3	Refining, Pig Warehouse and N.E. Corner of Furnace	10 Min./80 Min.

4	Furnace Baghouses	10 Min./80 Min.
5	S.E. Wall Section	10 Min./80 Min.
6	S.W. Wall Section	10 Min./80 Min.
7	Waste Water Treatment Plant	10 Min./80 Min.
8	West Pavement Perimeter	10 Min./80 Min.
9	Northwest Pavement Perimeter	10 Min./80 Min.
10	Old Battery Saw Area	10 Min./80 Min.

As indicated above, zone 1 and zone 7 will cycle on for ten (10) minutes and off for eighty (80) minutes, independently, on a daily basis. The remaining zones will operate as follows:

Zones 2 & 3 on simultaneously - 10 minutes
(Note: Zones 2 & 3 are on the same timer)

5 Minute Delay

Zones 4 & 9 on simultaneously - 10 minutes

5 Minute Delay

Zones 5 & 10 on simultaneously - 10 minutes

5 Minute Delay

Zones 6 & 8 on simultaneously - 10 minutes

5 Minute Delay

Zone 7 on 10 - minutes

5 Minute Delay

There is approximately five (5) minutes between the cycling of each zone(s).

The single impulse sprinkler at the plant entrance gate and the two impulse sprinklers on the hygiene building will operate automatically with zone 2 and zone 3 sprinklers.

Number and type of sprinklers in use:

Zone	Location	Quantity & Type
1	Office Parking Lot Fence	13 Spray Heads
2	Maintenance Shop/Roofed Parking Area	5 Impulse Heads
3	Refining, Pig Warehouse and N.E. Corner of Furnace	7 Impulse Heads
4	Furnace Baghouses	5 Impulse Heads
5	S.E. Wall Section	11 Spray Heads
6	S.W. Wall Section	16 Spray Heads
7	Waste Water Treatment Plant	5 Impulse Heads
8	West Pavement Perimeter	7 Impulse Heads
9	Northwest Pavement Perimeter	6 Impulse Heads
10	Old Battery Saw Area	2 Impulse Heads

Traffic paths shall be vacuumed three (3) times each day with a Tennant ,or equivalent, vacuum sweeper except when rain occurs or when areas are sufficiently wetted by the pavement sprinkler system. The employee parking lots will be vacuumed three (3) times a week, unless prohibited by prolonged periods of rain fall. Sweeper operation will be noted on the Sweeper Operation Log sheet (see Attachment 2). Several sprinkler zones cycle on and off automatically throughout the day which keep the plant traffic paths wet.

Battery Breaking Area

This area is partially enclosed with walls on all four sides. The walls extend down from the roof line to approximately ten (10) feet from the top of the curbing that is around the entire floor area. Approximately three quarters of the east wall is directly adjacent to the west wall of the materials storage and handling area which provides a wall from the roof to the floor. Any wash down water or process water from the operation gravity flows to a collection sump on the north side of the building. Water collected in the sump is pumped to the on-site waste water treatment plant for treatment. The battery breaking area will be washed/hosed down at least twice a day. Each wash down will be noted on the daily operation log sheet and signed by the operator (see Attachment 3).

Blast Furnace Area

The blast furnace area is partially enclosed with walls on the south, east and west side that extend down from the roof to approximately fourteen (14') feet from the floor. The wall on the north side is shared with the refining area and extends down to the floor. The furnace is bordered on the south by the baghouses which are walled in and is bordered on the west (approximately 30 feet away) by the materials storage and handling area building. The furnace work area will be washed/hosed down at least twice a day; a minimum of once during two of the three shifts. Each wash down will be noted on the shift operation log sheet and signed by the operator (see Attachment 4). The wash down water in the furnace area gravity flows to one of two floor sumps. The sumps are located on the east and west sides of the blast furnace area. Water collected in these sumps will be pumped to the waste water treatment plant for treatment.

Potential process fugitive emissions in the blast furnace operation are controlled by two enclosures and two hoods that are vented to three baghouses. The blast furnace slag tapping enclosure, lead tapping hood, and dust agglomeration furnace slag tapping enclosure are vented to one baghouse. The blast furnace charging hood is vented to two baghouses. The openings or faces of these hoods and enclosures will meet the 300 feet per minute face velocity requirements while access doors are in the normal operating position.

Refining Area

The refining area is partially enclosed. The south wall extends from the roof to the floor. A portion of the east and west walls extend from the roof to the floor. The pig warehouse directly east and adjacent to the refining area essentially provides a wall for two thirds of the east side of the refining area. This area is bordered on the west by the old battery saw area which is roofed and the tanks and concrete structures provides additional wind breaks to the west of the refining area. The work area will be washed/hosed down at least twice a day. Each wash down will be noted on the daily operation log sheet and signed by the operator (see Attachment 5). Wash down water in the refining area is collected in a floor sump near the northwest corner of the area. Wash down water collected in the sump is pumped to the waste water treatment plant for treatment.

Potential process fugitive emissions in the refining operation are controlled by hoods over each of the three refining kettles and three drossing enclosures. The hoods and enclosures are vented to two baghouses. The kettle hoods will meet the 250 feet per minute face velocity requirement while the doors are in their normal operating position. The drossing enclosures will meet the 300 feet per minute face velocity requirement while the doors are in their normal operating position.

Molten lead is pumped from the kettles to one of two casting machines. A pre-set amount of lead is delivered to the pig molds through a star ladle at the front end of the casting machines. The star ladle is kept hot with a gas flame. A hood will be constructed over the star ladle to capture potential emissions. The face of the hood will meet the 300 feet per minute face velocity requirement.

Slag Fixation

This operation is enclosed with walls on all four sides that extend from the roof to the floor. The north wall has a roll-up garage door, approximately 14' X 14', for equipment access. There is a walk-in door on the west side. This area will be swept or washed down at the end of the operating day. Each floor cleaning will be noted on the daily operation log sheet and signed by the operator (see Attachment 6). There are two floor sumps in the building, one on the east side and one on the west side. Wash down water collected in the sumps is pumped to the waste water treatment plant for treatment.

Potential fugitive emissions in the slag fixation operation are controlled by a single baghouse. There are pick-up points on the slag crusher outlet, sizing screen, and the mixer inlet. All doors are kept closed during the slag crushing and fixation operation. Therefore, the in-draft requirement for doors open during normal operation is not applicable.

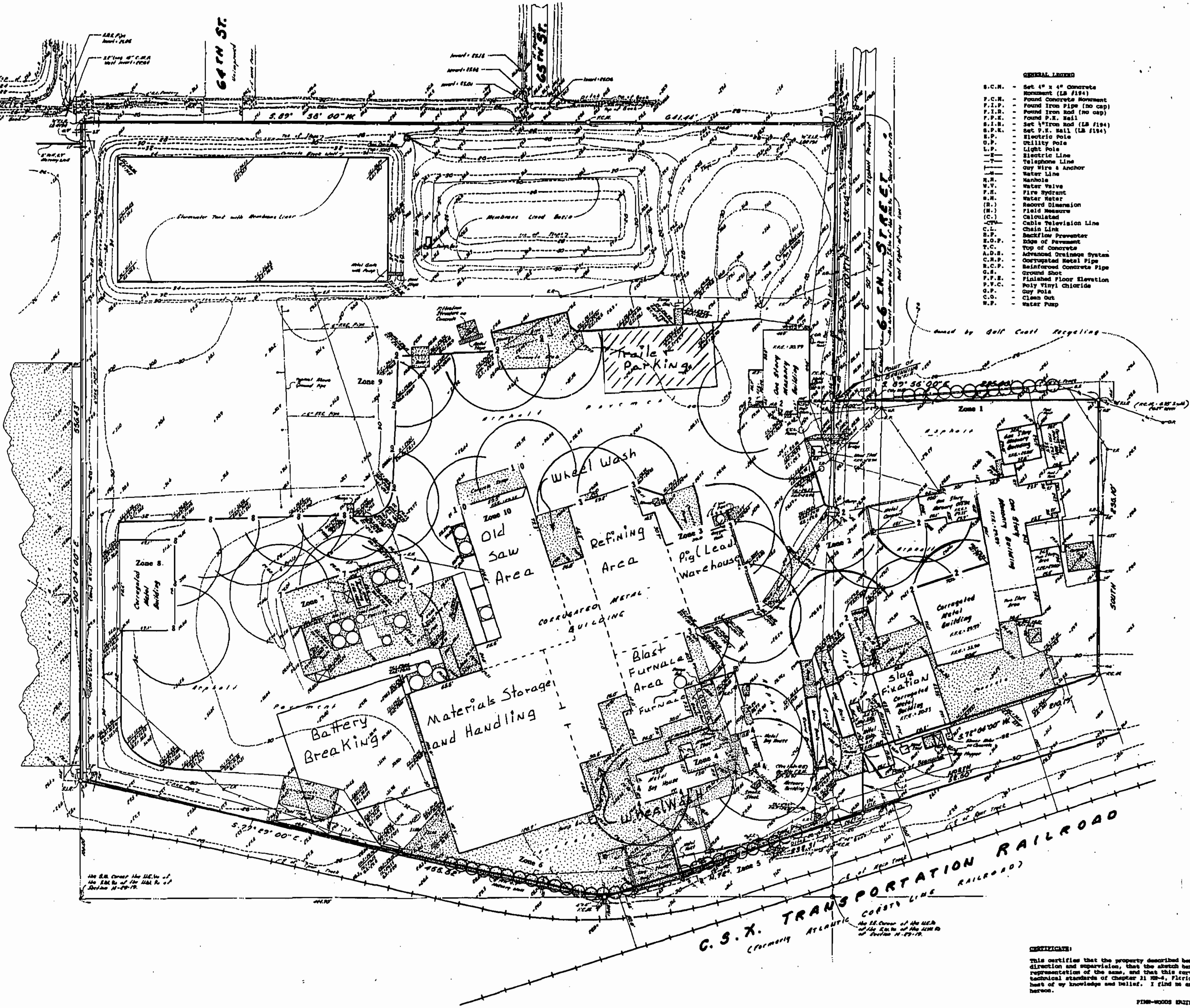
Materials Storage and Handling Area

The materials storage and handling area has walls from the roof to the floor on all four sides. There is an approximately 24' X 14' equipment access opening on the west side of the area. There is an approximately 12' X 13' loading/unloading ramp access opening on the north side of the area. Accumulated water in this area gravity flows to one of two floor sumps. There is a collection sump on the east wall near the southeast corner of the area and one sump on the north side of the area. Water collected in the east sump is pumped to the waste water treatment plant for treatment. Water collected in the north sump will be pumped to the desulfurization reactor(s) or to the waste water treatment plant for treatment. The pathways within this area will be wetted down as needed to prevent the generation of dust. The materials stored in this area are washed/wetted prior to storage and will remain moist even after long term storage. Additional wetting of the stored material will be provided, as needed, to prevent the generation of dust (see Attachment 7).

The main entrance/exit to the materials storage and handling area is under a contiguous roof that provides covered access for equipment moving between the materials storage and handling, blast furnace and refining areas. An employee is stationed at this location for the sole purpose of pressure washing any equipment (forklift, front-end loader) that will be leaving the roofed area. The washing of the equipment will be documented on a log (see Attachment 8).

The activities described above will be documented on a separate log sheet or the daily operating log kept for each process operation (see attached forms).

SECTION 14, TOWNSHIP 29 SOUTH, RANGE 19 EAST, CITY OF TAMPA, FLORIDA



GENERAL LEGEND

S.C.M.	-	Set 4" x 4" Concrete Monument (LB #194)
F.C.M.	-	Found Concrete Monument
F.I.P.	-	Found Iron Pipe (no cap)
F.I.R.	-	Found Iron Rod (no cap)
F.P.K.	-	Found P.K. Nail
S.I.R.	-	Set ½"Iron Rod (LB #194)
S.P.K.	-	Set P.K. Nail (LB #194)
E.P.	-	Electric Pole
U.P.	-	Utility Pole
L.P.	-	Light Pole
—E—	-	Electric Line
—T—	-	Telephone Line
├——	-	Guy Wire & Anchor
—W—	-	Water Line
M.H.	-	Manhole
W.V.	-	Water Valve
F.H.	-	Fire Hydrant
W.M.	-	Water Meter
(R.)	-	Record Dimension
(M.)	-	Field Measure
(C.)	-	Calculated
—CTV—	-	Cable Television Line
C.L.	-	Chain Link
B.P.	-	Backflow Preventer
E.O.P.	-	Edge of Pavement
T.C.	-	Top of Concrete
A.D.S.	-	Advanced Drainage System
C.M.P.	-	Corrugated Metal Pipe
R.C.P.	-	Reinforced Concrete Pipe
G.S.	-	Ground Shot
F.F.E.	-	Finished Floor Elevation
P.V.C.	-	Poly Vinyl Chloride
G.P.	-	Guy Pole
C.O.	-	Clean Out
W.P.	-	Water Pump

LEGAL DESCRIPTION:

Part of the Northeast 1/4 of the Southwest 1/4 of the Northwest 1/4 of Section 14, Township 29 South, Range 19 East, Hillsborough County, Florida, described as follows: From the Northeast corner of the Southwest 1/4 of the Northwest 1/4 Section 14, run South 89°58' West along the North boundary of said Southwest 1/4 of the Northwest 1/4 of Section 14 a distance of 25.0 feet to a point-of-beginning on the West right-of-way line of 66th Street: From said point-of-beginning, continue South 89°58' West along the North boundary of said Southwest 1/4 of the Northwest 1/4 of Section 14, a distance of 641.44 feet to the Northwest corner of the Northeast 1/4 of the Southwest 1/4 of the Northwest 1/4 of Section 14; run thence South 0°04' East along the West boundary of said Northeast 1/4 of the Southwest 1/4 of the Northwest 1/4 of Section 14 a distance of 556.43 feet to a point which is 100.0 feet North of the Southwest corner of said Northeast 1/4 of the Southwest 1/4 of the Northwest 1/4 of Section 14; run thence South 77°29' East a distance of 455.53 feet to a point on the South boundary of said Northeast 1/4 of the Southwest 1/4 of the Northwest 1/4 of Section 14, which point is 444.7 feet East of the Southwest corner of said Northeast 1/4 of the Southwest 1/4 of the Northwest 1/4 of Section 14; run thence North 72°04' East along the Northerly right-of-way line of Atlantic Coast Line Railroad a distance of 232.31 feet to intersection with the East boundary of said Northeast 1/4 of the Southwest 1/4 of the Northwest 1/4 of Section 14; run thence North along said East boundary of the Northeast 1/4 of the Southwest 1/4 of the Northwest 1/4 of Section 14 a distance of 352.5 feet; run thence North 89°56' West a distance of 25.0 feet; run thence North along the West right-of-way line of 66th Street a distance of 231.66 feet to the point-of-beginning;

AND:

Part of the Southeast 1/4 of the Northwest 1/4 of Section 14, Township 29 South, Range 19 East, Hillsborough County, Florida, described as follows: From a point-of-beginning which is the intersection of the West boundary of said Southeast 1/4 of the Northwest 1/4 of Section 14 and the Northerly right-of-way line of Atlantic Coast Line Railroad, which point is 100.0 feet Northerly (measured at right angles) from the centerline of main track of said railroad, run North along said West boundary of the Southeast 1/4 of the Northwest 1/4 of Section 14 a distance of 300.0 feet; run thence South 89°56' East (measured) (nominal "East" by previous description) a distance of 200.0 feet: run thence South, parallel to the West boundary of said Southeast 1/4 of the Northwest 1/4 of Section 14, a distance of 335.1 feet to a point on the North right-of-way line of Atlantic Coast Line Railroad; run thence South 72°04' West along said North right-of-way line of Atlantic Coast Line Railroad a distance of 210.19 feet to the point-of-beginning.

SURVEYORS NOTES:

1. No underground foundations, structures, installations or improvements have been located unless otherwise shown hereon.
2. See legend for symbols and/or abbreviations used hereon.
3. This survey is NOT VALID UNLESS EMBOSSED WITH SURVEYORS SEAL and was prepared for the exclusive use of the current owners and also those who purchase, mortgage or guarantee the title thereto and/or others whose names appear on the face of this survey.
4. This parcel located in Flood Zone "C" as per the Flood Insurance Rate Map for the City of Tampa, Florida, Community Panel Number 120114 - 0005 C, date _/_/_. Base flood elevation, if applicable, is ______ feet. Elevation datum is N.G.V.D.-29, unless otherwise shown.
5. This survey prepared without the benefit of a title search. No instruments of record reflecting ownership, easements or rights of way were furnished to the undersigned, unless otherwise shown hereon.
6. Elevations shown hereon are in feet and refer to N.G.V.D. - 29 Datum.
7. Reference Benchmark is City of Tampa Circuit No. 22 Benchmark No. A618. Elevation = 29.731
8. On-site Temporary Benchmark is " □ " cut set on the S.W. corner of New Truck Scale located 110'± N. and 14'± W. of the S.E. corner of the N.E. ¼ of the S.W. ¼ of the N.W. ¼ of Section 14-29-19. Elevation = 30.91 (See Sketch)

CERTIFICATE:

This certifies that the property described hereon was surveyed under my direction and supervision, that the sketch hereon is a true and accurate representation of the same, and that this survey meets the minimum technical standards of Chapter 21 HH-6, Florida Administrative Code, to the best of my knowledge and belief. I find no encroachments except as shown hereon.

10-11-93
Date of Survey

PIMM-WOODS ENGINEERING COMPANY

Steven M. Woods
Florida Registration No. 5271

PIMM-WOODS ENGINEERING CO.
CIVIL ENGINEERS-LAND SURVEYORS
2909 NORTH FLORIDA AVENUE-TAMPA, FLORIDA-33603-(813) 229-1747

Scale 1"=40'	NOT VALID UNLESS EMBOSSED WITH SURVEYORS SEAL	F.B. Hitt. Lk. 63
Drawn D.Stuthard		Pg. 37-55
Crew E.Trabeyr		Checked

BOUNDARY SURVEY With Elevations And Occupation

For Gulf Coast Recycling, Inc. — Drawing Number 9333-0168

Revision	Date	Comment	
D.L.S.	11-18-93	Added Fire Hydrant	
D.L.S.	12-6-93	Remove Fence Section	
D.C.F.	2-1-94	Added Contour Lines	9333-0168-01

Attachment 1

Sprinkler Operation Log

Month: ____________________ Year: ________

		Sprinkler Zones In Operation									
Day	By	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											

If a sprinkler or a zone is inoperable, please note the inoperable zone and the measures taken to effect the repairs and/or replacements needed. Document the date of the repairs.

____

____

____

____

____

____

____

Sprinkler Operation Log

Month: ____________________ Year:________

		Sprinkler Zones In Operation									
Day	By	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
31											

If a sprinkler or a zone is inoperable, please note the inoperable zone and the measures taken to effect the repairs and/or replacements needed. Document the date of the repairs.

Attachment 2

Sweeper Operation Log

Date: ______________

Operator	Start Time	Hour Meter Reading Start	Hour Meter Reading End	Operation Time	Area(s) Swept

Area(s) Swept: (1) Plant Roadways, (2) Office Parking Lot, (3) Safety Office Parking Lot

Under areas swept, list by number the areas swept each time the sweeper is operated. The plant roadways must be swept a minimum of three times each day. The parking lots must be swept a minimum of three time per week.

Engine Air Filter: Check Indicator ______ Empty Dust Cap ______

Engine Crankcase: Check Oil Level ______

Brush Compartment Skirt: Check For Damage & Wear ______
Adjustments Made: ______ (Yes or NO)

Hopper Lip Skirts: Check For Damage & Wear ______
Adjustments Made: ______ (Yes or NO)

Main Brush: Check For Damage & Wear ______
Adjustments Made: ______ (Yes or NO)

Hopper Dust Filters: Condition of Filters ______
Filters Changed ______ (Yes or No)
Filter Screens Changed ______ (Yes or No)

1.) Operators must sign the log sheet each time the sweeper is used.

2.) Shake the hopper filters approximately every fifteen minutes.

Notes: ____

____

File:SWEEPERQP

Attachment 3

Battery Breaking Operation

Date: ______________ Operator: ______________________________

Start Time	End Time	Run Time

Remote Conveyor Panel Hour Meter: (Read Daily)

Start: ______________ Hours End: ______________ Hours

Processing Time: __________ Hours Pallets Processed: __________

Dehumidifier Magnehelic Readings: Inlet ________ "H2O Outlet: __________ "H2O

Soda Ash Silo Panel Hour Meter: (Read Daily)

Start: ______________ Hours End: ______________ Hours

Soda Ash Delivery: ________ (Yes or No)

Soda Ash Silo Level: Start __________ Ft. End __________ Ft.

Floor Wash Downs:

1. ______ Time: __________ Signature: ______________________________
2. ______ Time: __________ Signature: ______________________________
3. ______ Time: __________ Signature: ______________________________

Floor Must be washed down at least twice each day.

Notes: ____

File:BATTERYSHEET

Daily Blast Furnace Operation Process Sheet

Date: ________________ Shift: ____________ Operator: ____________________________ Start Time: __________

No.	Time	Tag No.
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		

		1	2	3	4	5	6	7	8
1	1/2 Coke								
	Return Slag								
	Iron 135, Lime 135								
2	Groups								
3	Groups								
4	1/2 Coke								
5	Groups								
	Iron 135, Lime 135								
6	1/2 Coke								
7	Groups								
8	Groups								

Furnace Area Wash Downs

1. Time: ________ Signed: ________________________
2. Time: ________ Signed: ________________________
3. Time: ________ Signed: ________________________

Area must be washed down at least once each shift

Slag Pull Times:

Dust Slag Pots:

Equipment & Furnace Checks:

Furnace
Bucket
Tweers Open
Pipes Cleaned
Scale
Torch
Pressure Washer

Attachment 4

Baghouse Differential Pressure Readings						
3)	4)	5)	6)	7)	8)	
9)	10)	11)	12)	H1)	H2)	H3)

Baghouse Inlet Temp. Degrees F:

File:FURNSHEET

Attachment 5

Daily Refining Operation Process Sheet

Date:____________________ Operator: ______________________________

	Pot No. 1	Pot No. 2	Pot No. 3
Type Lead			
Preparation	Start	Start	Start
Time	Finish	Finish	Finish
Pumping	Start	Start	Start
Time	Finish	Finish	Finish
Total Hours			

Blast Lead Buttons Used: ________ Average Weight Each : _______________ Lbs.

Finished Pigs Produced: _____________ Average Weight Each : _______________ Lbs.

Finished 1/2 Pigs Produced: __________ Average Weight Each : _______________ Lbs.

Refining Materials Used: Recycled Pigs or Scrap Lead: ____________ Lbs.

Arsenic [ ] ____________ Lbs. Sodium Hydroxide [ ] ____________ Lbs.

Antimony [ ] ____________ Lbs. Red Phosphorous [ ] ____________ Lbs.

Aluminum [ ] ____________ Lbs. Sodium Nitrate [ ] ____________ Lbs.

Sulfur [ ] ____________ Lbs. Calcium [ ] ____________ Lbs.

Tin [ ] ____________ Lbs. Selenium [ ] ____________ Lbs.

Drosses Removed: Tin __________ Lbs. Antimony __________ Lbs. Misc. __________ Lbs.

Final Saw Dust Wash: ______ Shovels Used

Baghouse Differential Pressure Readings R1: ________ "H2O R2: ________ "H2O

Emission Control System Inspection (Baghouses, Fan, Duct Work & Hoods): OK [ ]
Stack Observed: __________

Floor Wash Downs: Floor area must be washed down at least twice day

1 ______ Time: __________ Signed:_____________________________________

2 ______ Time: __________ Signed:_____________________________________

3 ______ Time: __________ Signed:_____________________________________

File:REFNSHEET

Attachment 6

Slag Fixation Batch Sheet

Date: ________________ Batch No.: ________________

Batch Start Time: ________________ Batch End Time: ______________

Run Time: ________ Hours __________ Minutes

Batch Material Inputs:

			Tons	TPH
Crushed Slag:	__________	Lbs.	__________	__________
Gallons of Water: ______	___________	Lbs.		
Enviroblend:	___________	Lbs.		
Totals	___________	Lbs.	__________	Tons

Composite Sample No.: ______________ Sample Date: ___________
(Batches BCH_______ & BCH_______)

Sample Time: ___________

Sampled By: ___________________________

Sample Submitted To ______________________________ Date: ____________

Laboratory Results - TCLP Lead ________ ppm

Crusher Checks During Run: Time: ________ ________ ________
Inlet :
Outlet:

Crusher On Time: __________ Crusher Off Time :__________

Crusher Operating Time: ___________

Baghouse Delta P Reading:______ "H20

Floor Cleaned ______ Time: _______ Signed: ______________________________

Comments:____

____

File:BATCSHET

Attachment 7

Materials Storage and Handling Area

Sprinkler System Operation

Month: ____________________ Year: ________

Day	Signed By	(1) Sprinklers Operated	(2) Pile(s) Surface	(3) Visible Dust Noticed	(5) Sump Pumps Operational
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					

File:MATLSTORAGE (1) Yes or No (2)Wet,Damp,Dry (3) Yes or No (4) Yes or No

Attachment 8

Daily Vehicle Wash Log

Date: ____________________

	Blast Furnace Front-end Loader	Washed By	Blast Furnace Fork Lift	Washed By
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
19				
20				

The equipment must be washed each time before it exits the roofed area of the blast furnace. The individual washing the equipment must check off and sign the log sheet each time it is washed.

BAGHOUSES STANDARD OPERATING PROCEDURES MANUAL

GULF COAST RECYCLING, INC.
1901 NORTH 66th STREET
TAMPA, FL 33619

REVISED APRIL 14, 1999

File:BHSOP

Introduction

Gulf Coast Recycling, Inc. (GCR) is a secondary lead smelter. The facility processes spent lead acid batteries. Battery components are separated and the lead bearing materials are smelted in a blast furnace rendering a product known as blast lead. The blast lead is further refined to produce specific grades of lead for the manufacture of new batteries.

GCR is committed to the operation of its facility in a manner which will comply with applicable federal, state, and county environmental regulations and in harmony with the surrounding community. GCR has operated at its present location for more than thirty five (35) years and expects to continue operation well into the next century. Regulatory compliance is a corporate commitment. This commitment is vigorously reinforced throughout the company; from the top down.

Purpose

The purpose of this plan is to effectively operate the emission control (baghouses) systems to meet or exceed the requirements of the U.S. Environmental Protection Agency (EPA), the Florida Department of Environmental Protection (FDEP), and the Environmental Protection Commission of Hillsborough County (EPC).

The EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP) From Secondary Lead Smelting (40 CFR 63 Subpart X) apply to this facility. This rule requires the owner to prepare and operate in accordance with a standard operating procedures (SOP) manual that describes the operation and maintenance procedures for the point source emission control systems at the facility.

GCR has five permitted point sources. The point sources include the Blast Furnace operation, Blast Furnace Charging, Blast Furnace & Dust Furnace Tapping, Refining operation and Slag Fixation. Each point source is controlled by shaker type, fabric filter baghouses. Each of the five (5) point sources is equipped with a Goyen Tribo-Electric monitoring system to detect bag failures. A bag failure will be indicated by a drastic and sustained increase in the relative dust loading readout scale and will trigger a visual and audible alarm. Each monitoring system consists of an in-stack Teflon coated stainless steel sensing probe, an active sensor head and a EMS4 controller with display scale. The output from each monitoring reports to an electronic six (6) channel data logger with hard drive and disk recording capabilities. There are two (2) four (4) point annunciators to provide visual and audible alarm displays when a monitor detects an alarm condition.

Sensing probe length and stack diameters are as follows:

Point Source	Stack Diameter	Probe Length
Blast Furnace Operation	36"	20"

Charging Operation	22"	15"
Tapping Operation	12"	10"
Refining Operation	26"	15"
Slag Fixation Operation	14"	10"

There are ten (10) baghouses on the Blast Furnace operation, two (2) baghouses on the Charging operation, one (1) baghouse on the Tapping operation, two (2) baghouses on the Refining operation and one (1) baghouse on the Slag Fixation operation; for a total of sixteen individual baghouses. The ten baghouses on the Blast Furnace operation are equipped with automatic timers to actuate the shaker mechanisms at preset intervals. The remaining six baghouses have manually actuated shaker mechanisms. All baghouses have indicating transmitter-type differential pressure gauges. The output from these differential pressure gauges report to a continuos recording Cleveland Hays paperless recorder w/disk drive. The data saved on the disk drive is used to produce a permanent record of the baghouse differential pressure readings relative to date(s) and time(s).

This SOP manual provides the minimum guidelines needed for inspections and routine maintenance of the baghouses to ensure proper operation of the baghouses and maximum control efficiency.

The following procedures will be followed at GCR to ensure the proper operation of the baghouses.

(1) The pressure drop across each baghouse will be continuously recorded on an electronic data logger and hard copies will be produced from the data disk. In addition, during each day of process operation, the readings from the direct reading indicators will be logged on the daily process log sheet for the Blast Furnace, Refining, and Slag Fixation operations (see Daily Operation Process Sheet (see Attachments 1A, 1B, and 1C). On a daily basis, the process operator will also check the pressure drop display screens (monitors) for a displayed null reading, indicating that a cleaning cycle has occurred on the blast furnace baghouses. The operator will also inspect the operating condition of the stack(s), air compressor, and the vibrators (where applicable) on the baghouse hoppers which aide in the removal of accumulated dust in the hoppers. Each day; the results of the inspection will logged on the Daily Emission Control Inspection sheets (see Attachments 2A, 2B, and 2C). The inlet temperature of the blast furnace baghouses will also be checked and recorded on the process log sheet. The ten (10) baghouses for the blast furnace are equipped with timers and automatic shaker mechanisms which operate on a pre-set timed cycle. The remaining six (6) baghouses are manually actuated to shake at least once per operating day.

(2) On a weekly basis the process operator will inspect the baghouse hoppers, vibrators, and the screw conveyors to insure that dust is being removed from the hoppers. A hopper blocked by material build-up can also be evidenced by the pressure drop indicator for the baghouse. The operator will verify the function of the shaker mechanisms, which can be evidenced by observation of pressure drop monitors. During each cleaning event the baghouse(s) is taken off-line and the pressure drop reading essentially goes to zero (null) which is graphically displayed on the monitor screen. The resulting decrease in pressure drop after each off-line cycle/cleaning event is indicated by the graphic display. The monitor continuously displays an approximately one (1) hour block of real-time data for each baghouse. The operator will also check the hopper doors and vibrators, and clean crossover ducts on the blast furnace baghouse(s) inlet/distribution duct. The results of the inspection will be logged on the Weekly Inspection sheets (see Attachments 3A, 3B, and 3C).

(3) On a monthly basis, the operator will inspect the baghouse shaker mechanisms for mechanical operation. Twice a month a hard copy of each baghouse pressure monitoring, in twenty four (24) hour time spans, is produced. The chart will indicate the cleaning event and null reading. It will also graphically display the Delta P decreases after cleaning and the increase in Delta P between cleaning events. The bag tension will also be checked and verified by the chart read out. Improperly tensioned bags will not clean properly and will crimp at the bottom and not allow the dust to fall out of the bag, causing an unusually high Delta P reading. The results of the inspection will be recorded on the Monthly Inspection sheets (see Attachments 4A, 4B, and 4C).

(4) Quarterly, the interior of each baghouse will be inspected for corrosion and bag integrity. The fans/housings will visually be inspected for wear, material build-up, and corrosion. The operating condition of the fan will be checked visually or by using a vibration detector, or equivalent method. The results of the inspection will be recorded on the Quarterly Baghouse Inspection sheets (see Attachments 5A, 5B, and 5C).

The manufacturer's suggested maintenance and maintenance schedule is a follows:

Baghouse Structure: Maintain in an air and water tight condition and paint periodically to prevent corrosion.

Doors:	Access and inspection doors must be keep tightly closed except when unit is shut-down. Threaded bolts and clamps must be lubricated to prevent corrosion. Door seals and gaskets should be maintained in good condition.
Automatic Dampers:	Provide clean air at a minimum of 80 psi. and clean or replace sluggish solenoid valves. Protect damper valve linkage from corrosion.
Shaker Mechanism:	Inspect motor, v-belts, and linkage for proper operation weekly. Lubricate bearings, shaker bar, and clevis pins monthly.
Other Equipment:	Lubricate fan bearings and motor bearings (where applicable) at least monthly.
Baghouse Bags:	If acrylic bags are used in the ten baghouses on the furnace operation, replacement may be required every nine to twelve months. If membrane technology bags are used (teflon on acrylic), replacement will not be required for at least twenty-four months.

Corrective Measures

A leak detection system has been installed to monitor the point source discharge for each emission control system. The system for each point source consists of a GOYEN EMS4 Control Unit and Active Head Sensor & Probe. Each leak detection system is interfaced with a visual and an audible alarm that activates when the alarm relay is tripped for more than twelve (12) seconds. The data from each system is recorded by a Monarch Data Chart 3000 data acquisition system w/disk drive. Data recorded on the disk drive is used to produce hard copy charts which detail continuous sensor output with relative date(s) and time(s).

Should the leak detection system for a point source indicate a broken bag/leak, the individual compartment will be identified. The baghouse will first be taken off-line. The baghouse will then be entered to pinpoint the damaged bag(s). Typically the bottom entry-type bags used by GCR will leave a noticeable accumulation of dust adjacent to the damaged bag. If the bag(s) are not identified by this method, the baghouse will be closed, brought back on-line and a trace dye will be introduced into the unit. The baghouse will then be taken off-line, re-entered and inspected with a black light to identify the damaged bag(s). The damaged bags will be replaced or blanked off and the baghouse will be closed.

The baghouse(s) will then be brought back on line and the monitor read out will be observed to verify the elimination of the alarm condition. If a broken bag/leak indication is still present the procedure will be repeated until a normal percent of scale read out is observed. The date and time of the alarm event and the measures taken to correct the alarm condition will be logged on the Leak Detection Event sheet (see Attachment 6).

Baghouse Leak Detection System Quality Assurance Procedures:

Monitor Set Up: Each point source leak detection monitor will be set-up as follows: With the point source in operation, baghouses in good condition and the pressure normal, the EMS4 will be set to read out approximately 10 - 25 % of scale using the coarse sensitivity switch when possible. The delay time will be set at twelve (12) seconds. The peak/average switch will be set to peak in the peak position to minimize spikes and false alarms. These adjustments may vary according to the characteristics of each point source. Each point will have an alarm set point approximately equal to twice the cleaning cycle peak or 70% of scale.

Sensing Probe: The sensing probe is Teflon coated and the insulator is Teflon. The manufacturer recommends cleaning annually. Initially the probes and insulator will be checked and cleaned quarterly. This frequency may be adjusted to semiannually should the quarterly checks support a longer interval.

Response Test: The response check will be performed using a Goyen Electronic Dust Signature (EDS4) as per the manufacturer's procedure (see manufacturer's literature attached). The monitors will be checked after six months and annually thereafter.

Drift Check: Electronic drift will also be checked/verified using the EDS4 Electronic Dust Signature. The electronic calibration will be performed annually after installation or whenever the sensing head is replaced.

Annually: If the monitor's settings have not been adjusted within a years time, an annual instrument set up shall be performed. In this instance the probe will be cleaned and the same procedures followed during the initial set up will be performed if the readout is twenty (20) percent higher or lower than the reading taken prior to the probe cleaning.

Daily Blast Furnace Operation Process Sheet

Date: ______________ Shift: ___________ Operator: ________________________ Start Time: _________

No.	Time	Tag No.
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		

	1	2	3	4	5	6	7	8
1 1/2 Coke								
Return Slag								
Iron 135, Lime 135								
2 Groups								
3 Groups								
4 1/2 Coke								
5 Groups								
Iron 135, Lime 135								
6 1/2 Coke								
7 Groups								
8 Groups								

Furnace Area Wash Downs

1. Time: ________ Signed: ______________________
2. Time: ________ Signed: ______________________
3. Time: ________ Signed: ______________________

Area must be washed down at least once each shift

Slag Pull Times:

Dust Slag Pots:

Equipment & Furnace Checks:
Furnace
Bucket
Tweers Open
Pipes Cleaned
Scale
Torch
Pressure Washer

Baghouse Differential Pressure Readings						
3)	4)	5)	6)	7)	8)	
9)	10)	11)	12)	H1)	H2)	H3)

Baghouse Inlet Temp. Degrees F:

File:FURNSHEET

Attachment 1A

Attachment 1B

Daily Refining Operation Process Sheet

Date:____________________ Operator: ________________________________

	Pot No. 1	Pot No. 2	Pot No. 3
Type Lead			
Preparation	Start	Start	Start
Time	Finish	Finish	Finish
Pumping	Start	Start	Start
Time	Finish	Finish	Finish
Total Hours			

Blast Lead Buttons Used: ________ Average Weight Each : _______________ Lbs.

Finished Pigs Produced: _____________ Average Weight Each : _______________ Lbs.

Finished 1/2 Pigs Produced: __________ Average Weight Each : _______________ Lbs.

Refining Materials Used: Recycled Pigs or Scrap Lead: ____________ Lbs.

Arsenic [ ] ____________ Lbs. Sodium Hydroxide [ ] ____________ Lbs.

Antimony [ ] ____________ Lbs. Red Phosphorous [ ] ____________ Lbs.

Aluminum [ ] ____________ Lbs. Sodium Nitrate [ ] ____________ Lbs.

Sulfur [ ] ____________ Lbs. Calcium [ ] ____________ Lbs.

Tin [ ] ____________ Lbs. Selenium [ ] ____________ Lbs.

Drosses Removed: Tin __________ Lbs. Antimony __________ Lbs. Misc. __________ Lbs.

Final Saw Dust Wash: ______ Shovels Used

Baghouse Differential Pressure Readings R1: ________ "H2O R2: ________ "H2O

Emission Control System Inspection (Baghouses, Fan, Duct Work & Hoods): OK [ ]
Stack Observed: __________

Floor Wash Downs: Floor area must be washed down at least twice day

1 ______ Time: __________ Signed:_____________________________________

2 ______ Time: __________ Signed:_____________________________________

3 ______ Time: __________ Signed:_____________________________________

File:REFNSHEET

Attachment 1C

Slag Fixation Batch Sheet

Date: ______________ Batch No.: ________________

Batch Start Time: ______________ Batch End Time: ____________

Run Time: ______ Hours ________ Minutes

Batch Material Inputs:

Tons TPH

Crushed Slag: _________ Lbs. _________ _________

Gallons of Water: _____ __________ Lbs.

Enviroblend: __________ Lbs.

Totals __________ Lbs. _________ Tons

Composite Sample No.: _____________ Sample Date: __________
(Batches BCH______ & BCH______)
Sample Time: __________

Sampled By: ________________________

Sample Submitted To ____________________________ Date: ___________

Laboratory Results - TCLP Lead _______ ppm

Time: _______ _______ _______
Crusher Checks During Run: Inlet :
Outlet:

Crusher On Time: _________ Crusher Off Time :_________

Crusher Operating Time: __________

Baghouse Delta P Reading:_____ "H20

Floor Cleaned _____ Time: ______ Signed: ___________________________

Comments:____

____

Attachment 2A

Daily Blast Furnace Emission Control Inspection

Date: ______________ Inspected By: ______________________________

BH No.'s	Monitor Screen Zero Reading	Delta P Reading	Hopper Virators	Shake Down Baghouses	Stack Fans	Leak Detection System
3					No. 1 ( )	Furnace:
4					No. 2 ( )	Alarm Yes( ) No( )
5						Observed High _____ %
6						
7						Tapping:
8						Alarm Yes( ) No( )
9						Observed High _____ %
10						
11						Charging:
12						Alarm Yes( ) No( )
H1					TP ( )	Observed High _____ %
H2					CH ( )	
H3						

No. 1 & 2 Blast Furnace Fans TP - Tapping Fan CH - Charging Fan

A "Yes" entry for the leak detection alarm must be followed-up with an Alarm Event sheet

Lead Tapping Hood: ______ Indicate the general condition of hoods and enclosures

Slag Tapping Enclosure: ______ A - Very Good, B - Good, C - Poor

Dust Furnace Slag Tapping Enclosure: ______
If "C" is indicated you must follow-up with a work order for repairs.

Notes: ____

____

____

____

____

File:BHDAILY

Attachment 2B

Daily Refining Emission Control Inspection

Date: ____________ Inspected By: ________________________________

BH No.'s	Delta P Reading	Stack Fan	Shake Down Baghouses	Leak Detection System
R1				Alarm Yes ( ) No ( )
R2				Observed High _____ %

A "yes" entry for the leak detection alarm must be follow-up with an Alarm Event sheet

Pots	Hood	Drossing Enclosure
1		
2		
3		

Indicate the general condition of the hoods and enclosures,

A - Very Good, B - Good, C - Poor.

If "C" is indicated you must follow-up with a work order for repairs.

Notes: ____

____

____

____

File:REFNDAIILY

Attachment 2C

Daily Slag Fixiation Emission Control Inspection

Date: ____________Inspected By: ________________________________

BH No.	Delta P Reading	Stack Fan	Shake Down Baghouses	Leak Detection Alarm
S1				Yes( ) No( )

A "yes" entry for the leak detection alarm must be follow-up with an Alarm Event sheet

	Condition
Crusher Inlet	
Crusher Discharge	
Screener Inlet	
Mixer Inlet	

Indicate the general condition of the hoods and enclosures,

A - Very Good, B - Good, C - Poor.

If "C" is indicated you must follow-up with a work order for repairs.

Notes: ____

____

____

____

File:SLAGDAIILY

Weekly Blast Furnace Baghouse Inspection

Date:________________ Inspected By:______________________________________

Baghouses & Cooling Loops							
BH No.	Check Doors	Check Hoppers	Shaker Operation	Clean Cross Over Ducts	Screw Conveyors	Hour Meter Readings	Air Comprs.
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
H1							
H2							
H3							
CL's - 1							
CL's - 2							

Notes: ____

____

____

File:BHWEEKLY

Attachment 3B

Weekly Refining Baghouse Inspection

Date:________________ Inspected By:______________________________________

Baghouses						
BH No.	Check Doors	Check Hoppers	Shaker Operation	Screw Conveyor	Hour Meter Readings	Dampers
R1						Pot 1 ( )
R2						Pot 2 ( )
						Pot 3 ( )

Notes: ____

____

____

____

____

File:REFNWEEKLY

Attachment 3C

Weekly Slag Fixation Baghouse Inspection

Date:________________ Inspected By:________________________________

Baghouse					
BH No.	Check Doors	Check Hopper	Shaker Operation	Screw Conveyor	Hour Meter Reading
R1					

Notes: ____

____

____

____

____

File:SLAGWEEKLY

Attachment 4A

Monthly Blast Furnace Baghouse Inspection

Date:_______________ Inspected By:______________________________

Baghouses & Cooling Loops							
BH No.	Damper	Soleniod	Shaker Mechanism	Bag Tension	Rotary Air Locks	No. 1 Screw Conveyor	No. 2 Screw Conveyor
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
H1							
H2							
H3							
CL's - 1							
CL's - 2							
36"							

CL - Cooling Loops

Notes: ______________________________

____

____

____

____

File:BHMONTHLY

Attachment 4B

Monthly Refining Emission Control Inspection

Date: ______________ Inspected By: ____

BH No.'s	Doors	Hopper	Bag Tension	Shaker Mechanism
R1				
R2				

Notes: ____

____

____

____

____

File:REFNMONTHILY

Attachment 4C

Monthly Slag Fixation Emission Control Inspection

Date: ______________ Inspected By: ______________________________________

BH No.	Doors	Hopper	Bag Tension	Shaker Mechanism
S1				

Notes: ____

____

____

____

____

File:SLAGMONTHILY

Attachment 5A

Quarterly Blast Furnace Baghouse Inspection

Date: ______________ Inspected By: ______________________________

Baghouse No.(s): _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____ 8 _____ 9

(1). Inspect the interior of the baghouse for leaks and corrosion _____ (OK)

(2). Inspect the exterior of the baghouse for leaks and corrosion _____ (OK)

(3). Check the shaker bars and bag hangers _____ (OK)

(4). Check baffle plate for wear and corrosion _____ (OK)

(5). Inspect the damper for leaks and corrosion _____ (OK)

Baghouse No.(s): _____ 10 _____ 11 _____ 12 _____ H1 _____ H2 _____ H3

(1). Inspect the interior of the baghouse for leaks and corrosion _____ (OK)

(2). Inspect the exterior of the baghouse for leaks and corrosion _____ (OK)

(3). Check the shaker bars and bag hangers _____ (OK)

(4). Check baffle plate for wear and corrosion _____ (OK)

(5). Inspect the damper for leaks and corrosion _____ (OK)

Stack Fan(s): _____ Furnace 1 _____ Furnace 2 _____ Charging _____ Tapping

(1). Inspect the interior of the fan housing for leaks and corrosion _____ (OK)

(2). Inspect the fan for build-up and corrosion/wear _____ (OK)

(3). Check Motor and V-belts _____ (OK)

Notes: ____

____

____

____

____

File: BHQUARTERLY

Quarterly Refining Baghouse Inspection

Date: ______________ Inspected By: ______________________________

Baghouse No.(s) _____ R1 _____ R2

(1). Inspect the interior of the baghouse for leaks and corrosion _____ (OK)

(2). Inspect the exterior of the baghouse for leaks and corrosion _____ (OK)

(3). Check the shaker bars and bag hangers _____ (OK)

(4). Check baffle plate for wear and corrosion _____ (OK)

(5). Inspect the damper for leaks and corrosion _____ (OK)

Stack Fan:

(1). Inspect the interior of the fan housing for leaks and corrosion _____ (OK)

(2). Inspect the fan for build-up and corrosion/wear _____ (OK)

(3). Check Motor and V-belts _____ (OK)

Notes: ____

____

____

____

____

Attachment 5C

Quarterly Slag Fixation Baghouse Inspection

Date: ______________ Inspected By: ______________________________

Baghouse No: _____ S1

(1). Inspect the interior of the baghouse for leaks and corrosion _____ (OK)

(2). Inspect the exterior of the baghouse for leaks and corrosion _____ (OK)

(3). Check the shaker bars and bag hangers _____ (OK)

(4). Check baffle plate for wear and corrosion _____ (OK)

(5). Inspect the damper for leaks and corrosion _____ (OK)

Stack Fan:

(1). Inspect the interior of the fan housing for leaks and corrosion _____ (OK)

(2). Inspect the fan for build-up and corrosion/wear _____ (OK)

(3). Check Motor and V-belts _____ (OK)

Notes: ____

____

____

____

____

File: SLAGQUARTERLY

Attachment 6

Leak Detection System Alarm Event

Date: ______________ By: ______________________________

Leak Detection Sysem	Alarm On	Time Noted	Visible Emissions From Stack	Alarm Silenced	Did Alarm Reoccur
Blast Furnace			Yes ( ) No ( )		Yes ( ) No ( )
Charging			Yes ( ) No ( )		Yes ( ) No ( )
Tapping			Yes ( ) No ( )		Yes ( ) No ( )
Refining			Yes ( ) No ( )		Yes ( ) No ( )
Slag Fixation			Yes ( ) No ( )		Yes ( ) No ( )

If "Yes" is indicated for any entry you must determine the source of, and/or individual baghouse causing the alarm. All measures taken to determine the cause of the alarm and the actions taken to correct the alarm condition must be documented below.

Notes: ____

File:ALARMEVENT

Appendix E
Air Permit Application Forms

The following revised construction permit application forms are submitted for consideration. These applications supersede the application forms submitted in January 2002.

Department of Environmental Protection

Division of Air Resources Management

APPLICATION FOR AIR PERMIT - TITLE V SOURCE

See Instructions for Form No. 62-210.900(1)

I. APPLICATION INFORMATION

Identification of Facility

1. Facility Owner/Company Name: Gulf Coast Recycling, Inc.	
2. Site Name: Gulf Coast Recycling, Inc.	
3. Facility Identification Number: 0570057	[ ] Unknown
4. Facility Location: Street Address or Other Locator: 1901 North 66th Street City: Tampa County: Hillsborough Zip Code: 33619	
5. Relocatable Facility? [ ] Yes [X] No	6. Existing Permitted Facility? [X] Yes [ ] No

Application Contact

1. Name and Title of Application Contact: Ms. Joyce Morales-Caramella

2. Application Contact Mailing Address:
Organization/Firm: Gulf Coast Recycling, Inc
Street Address: 1901 North 66th Street
City: Tampa State: FL Zip Code: 33619

3. Application Contact Telephone Numbers:
Telephone: (813) 626 - 6151 Fax: (813) 622 - 8388

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	8/29/02
2. Permit Number:	0570057-012-AC
3. PSD Number (if applicable):	PSD-FL-326
4. Siting Number (if applicable):	

Purpose of Application

Air Operation Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

[ ] Initial Title V air operation permit for an existing facility which is classified as a Title V source.

[ ] Initial Title V air operation permit for a facility which, upon start up of one or more newly constructed or modified emissions units addressed in this application, would become classified as a Title V source.

Current construction permit number:______________________________

[ ] Title V air operation permit revision to address one or more newly constructed or modified emissions units addressed in this application.

Current construction permit number: ______________________________

Operation permit number to be revised: ______________________________

[ ] Title V air operation permit revision or administrative correction to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application. (Also check Air Construction Permit Application below.)

Operation permit number to be revised/corrected: ______________________________

[ ] Title V air operation permit revision for reasons other than construction or modification of an emissions unit. Give reason for the revision; e.g., to comply with a new applicable requirement or to request approval of an "Early Reductions" proposal.

Operation permit number to be revised:______________________________

Reason for revision:____

Air Construction Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

[X] Air construction permit to construct or modify one or more emissions units.

[ ] Air construction permit to make federally enforceable an assumed restriction on the potential emissions of one or more existing, permitted emissions units.

[ ] Air construction permit for one or more existing, but unpermitted, emissions units.

Owner/Authorized Representative or Responsible Official

1.	Name and Title of Owner/Authorized Representative or Responsible Official: Mr. Carlos E. Agüero President
2.	Owner/Authorized Representative or Responsible Official Mailing Address: Organization/Firm: Gulf Coast Recycling, Inc. Street Address: 1901 North 66th Street City: Tampa State: FL Zip Code: 33619
3.	Owner/Authorized Representative or Responsible Official Telephone Numbers: Telephone: (813) 626-6151 Fax: (813) 622 - 8388
4.	Owner/Authorized Representative or Responsible Official Statement: *I, the undersigned, am the owner or authorized representative*(check here [ ], if so) or the responsible official (check here [✓], if so) of the Title V source addressed in this application, whichever is applicable. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof. I understand that a permit, if granted by the Department, cannot be transferred without authorization from the Department, and I will promptly notify the Department upon sale or legal transfer of any permitted emissions unit.* Carlos E. Agüero — August 26, 2002 Signature — Date

* Attach letter of authorization if not currently on file.

Professional Engineer Certification

1.	Professional Engineer Name: Russell Kemp Registration Number: 56355
2.	Professional Engineer Mailing Address: Organization/Firm: RMT, Inc. Street Address: 8607 Roberts Drive Suite 100 City: Atlanta State: GA Zip Code: 30350
3.	Professional Engineer Telephone Numbers: Telephone: (770) 641 - 9756 Fax: (770) 642 – 0257

4. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

If the purpose of this application is to obtain a Title V source air operation permit (check here [ ], if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [X], if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [ ], if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Signature: [signature] Date: 8/19/02

(seal) STEPHEN ... CERTIFICATE NO. 60356 STATE OF FLORIDA PROFESSIONAL ENGINEER

* Attach any exception to certification statement.

Scope of Application

Emissions Unit ID	Description of Emissions Unit	Permit Type	Processing Fee
001	One Blast Furnaces	AC1A	
	One Reverberatory Furnace	AC1A	
	One Feed Dryer	AC1A	
011	Six (6) Refining Kettles	AC1A	
004	Furnace Charging, Furnace Tapping –Blast Furnace	AC1A	
	Furnace Charging, Furnace Tapping – Reverberatory Furnace	AC1A	
008	Two Soda Ash Silos	AC1A	
009	Facility Grounds and Miscellaneous Operations	AC1A	
012	CRT & Pallet Crusher	AC1A	
013	Exhaust Stacks from Indirect Firing of Kettles	AC1A	
	Battery Breaking	AC1A	

Application Processing Fee

Check one: [ ] Attached - Amount: $__ [X] Not Applicable

Construction/Modification Information

1. Description of Proposed Project or Alterations:

   - Addition of a New Reverberatory Furnace to increase furnace output to 65,000 tons per year.
   - Addition of a Feed Dryer
   - Construction of two (2) additional Refining Kettles (Total of Six) to increase refinery output to 65,000 tons per year of lead.
   - Increase in exhaust flow rate from baghouse controlling the emissions from the existing blast furnace
   - Addition of a CRT/pallet crusher
   - Upgrading the existing blast furnace hygiene baghouse
   - Installation of new Hygiene baghouse for reverberatory charging and tapping emissions
   - Enclosing the furnace building and installing a cartridge collector to control furnace building exhaust
   - Upgrading the refining baghouse
   - Installation of a wet scrubber for battery breaking operations
   - Addition of second soda ash silo. (Draft Application approved)

   With the completion of this project, production capacity of the facility will increase to 65,000 ton per year of lead in the furnace area and 65,000 ton per year in the refining area.

2. Projected or Actual Date of Commencement of Construction: ASAP after permit issuance

3. Projected Date of Completion of Construction: 12 months after commencement

Application Comment

Gulf Coast Recycling has recently completed the construction of four new refining kettles to replace the three former kettles. The company has also been issued a permit to construct a pallet and CRT crusher system. Emission increases associated with these projects have been included in the netting analysis. Both the refining source (by adding two additional kettles) and the pallet/CRT crusher source (by venting it to the scrubber instead of a baghouse as originally permitted) will be modified as part of this application.

The dryer will not be installed at the start up of the new furnace, but is considered here for PSD purpose as one project.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates: Zone: 17	East (km): 364.0	North (km): 3093.5	
2. Facility Latitude/Longitude: Latitude (DD/MM/SS):		Longitude (DD/MM/SS):	
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 33	6. Facility SIC(s): 3341
7. Facility Comment (limit to 500 characters):			

Facility Contact

1. Name and Title of Facility Contact: Ms. Joyce Morales-Caramella
2. Facility Contact Mailing Address: Organization/Firm: Gulf Coast Recycling, Inc. Street Address: 1901 North 66th Street City: Tampa State: FL Zip Code: 33619
3. Facility Contact Telephone Numbers: Telephone: (813) 626 - 6151 Fax: (813) 622 - 8388

Facility Regulatory Classifications

Check all that apply:

1. [ ] Small Business Stationary Source? [ ] Unknown
2. [X] Major Source of Pollutants Other than Hazardous Air Pollutants (HAPs)?
3. [ ] Synthetic Minor Source of Pollutants Other than HAPs?
4. [ ] Major Source of Hazardous Air Pollutants (HAPs)?
5. [X] Synthetic Minor Source of HAPs?
6. [X] One or More Emissions Units Subject to NSPS?
7. [X] One or More Emission Units Subject to NESHAP?
8. [X] Title V Source by EPA Designation?
9. Facility Regulatory Classifications Comment (limit to 200 characters): Item 5: The facility could emit greater than ten tons per year of lead compounds if not for required baghouse controls and MACT requirements which restrict the pollutant to well below ten tons per year.

List of Applicable Regulations

40 CFR 63 Subparts A & X	62-213 Major Source Op Permits
62-212.300 F.A.C.	62-297 Emissions Monitoring
62-296.603 F.A.C.	40 CFR 60.122(a)
62-296.700 F.A.C.	Core List
40 CFR 60.122(a)	
62-296.800 F.A.C.	
62-4.070(3) F.A.C.	
62-204 F.A.C. General Provisions	
62-210 F.A.C. Stationary Sources – General	
62-212 Stationary Sources – Pre-construction Review	

B. FACILITY POLLUTANTS

List of Pollutants Emitted

1. Pollutant Emitted	2. Pollutant Classif.	3. Requested Emissions Cap lb/hour	tons/year	4. Basis for Emissions Cap	5. Pollutant Comment
PM	SM		31.13	ESCPSD	
SO_2	A		798.9	ESCPSD	
NO_x	B		65.15	ESCPSD	
CO	A		750.13	ESCPSD	
VOC(THC)	A		34.89	ESCPSD	THC, as propane
Lead	SM		1.59	ESCPSD	

C. FACILITY SUPPLEMENTAL INFORMATION

Supplemental Requirements

1. Area Map Showing Facility Location: [X] Attached, Document ID:___A____[ ] Not Applicable [ ] Waiver Requested
2. Facility Plot Plan: [X] Attached, Document ID:___B Not Applicable [ ] Waiver Requested
3. Process Flow Diagram(s): [X] Attached, Document ID:_C___ [ ] Not Applicable [ ] Waiver Requested
4. Precautions to Prevent Emissions of Unconfined Particulate Matter: [X] Attached *, Document ID:_Appendix D [ ] Not Applicable [ ] Waiver Requested
5. Fugitive Emissions Identification: [X] Attached*, Document ID: Appendix D [ ] Not Applicable [ ] Waiver Requested
6. Supplemental Information for Construction Permit Application: [ ] Attached, Document ID:________ [X] Not Applicable
7. Supplemental Requirements Comment: * Existing document attached. Document to be revised upon issuance of construction permit and prior to modification start-up as required by 40 CFR 63.

Additional Supplemental Requirements for Title V Air Operation Permit Applications

8. List of Proposed Insignificant Activities: [ ] Attached, Document ID:________ [X] Not Applicable	
9. List of Equipment/Activities Regulated under Title VI: [ ] Attached, Document ID:________ [ ] Equipment/Activities On site but Not Required to be Individually Listed [X] Not Applicable	
10. Alternative Methods of Operation: [ ] Attached, Document ID:________ [X] Not Applicable	
11. Alternative Modes of Operation (Emissions Trading): [ ] Attached, Document ID:________ [X] Not Applicable	
12. Identification of Additional Applicable Requirements: [ ] Attached, Document ID:________ [X] Not Applicable	
13. Risk Management Plan Verification: [ ] Plan previously submitted to Chemical Emergency Preparedness and Prevention Office (CEPPO). Verification of submittal attached (Document ID:________) or previously submitted to DEP (Date and DEP Office:________________________) [ ] Plan to be submitted to CEPPO (Date required:________________________) [X] Not Applicable	
14. Compliance Report and Plan: [ ] Attached, Document ID:________ [X] Not Applicable	
15. Compliance Certification (Hard-copy Required): [ ] Attached, Document ID:________ [X] Not Applicable	

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):

Type 2 – One (1) Blast Furnace and One(1) Reverberatory Furnace

4. Emissions Unit Identification Number: [ ] No ID
ID: 001 [ ] ID Unknown

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A and C	July 2003	33	[ ]

9. Emissions Unit Comment: (Limit to 500 Characters)

Addition of new reverberatory furnace to existing permit unit (Blast Furnace)

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method): Both the existing blast furnace and the new reverberatory furnace will be ducted to a new, common blend chamber. The blend chamber will be a multi-chambered, refractory lined vessel or a water-jacketed steel vessel with a dwell time of at least two (2) seconds.
2. Control Device or Method Code(s): 021

Emissions Unit Details

1. Package Unit: Manufacturer: Gulf Coast Recycling	Model Number:
2. Generator Nameplate Rating: N/A MW	
3. Incinerator Information: Dwell Temperature: Dwell Time: Incinerator Afterburner Temperature:	 Unknown °F 2 seconds ~1450 °F

Emission Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

A 10 module shaker-type baghouse with Gore Technology or equivalent membrane on acrylic bags. Baghouse will be used to control PM and lead emissions from the furnaces.

The airflow from the furnace process baghouse is 50,000 acfm at 180 degrees F.

Each module contains 204 bags with 13.75 sq. ft. of cloth each for a total of 2,805 sq. ft./module and a baghouse total of 28,050 sq. ft. With one module off line the total will be 25,245 sq. ft. The gross air/cloth ratio will be 1.78:1; and the net will be 1.98:1.

The existing baghouse will be upgraded with new ductwork and new induced draft fans.

2. Control Device or Method Code(s): 018

Emissions Unit Details

1. Package Unit: Manufacturer:	N/A	Model Number:	
2. Generator Nameplate Rating:		MW	
3. Incinerator Information: Dwell Temperature:			°F
Dwell Time:			seconds
Incinerator Afterburner Temperature:			°F

Emission Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

A nine (9) foot diameter, forty-two (42) foot tall tower will be constructed at the outlet of the blend chamber, prior to inlet of baghouse. A soda ash slurry will be injected to control SO_2 emissions. The amount of soda injection will be controlled by the existing SO_2 CEM system and will be operated at a level necessary to maintain compliance with the proposed limits.

2. Control Device or Method Code(s): 052

Emissions Unit Details

1. Package Unit:
   Manufacturer: Gulf Coast Recycling, Inc   Model Number: N/A
2. Generator Nameplate Rating: N/A MW
3. Incinerator Information:
   Dwell Temperature: °F
   Dwell Time: seconds
   Incinerator Afterburner Temperature: °F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate: N/A			mmBtu/hr
2. Maximum Incineration Rate: N/A	lb/hr		tons/day
3. Maximum Process or Throughput Rate: 18Tons/Hr (daily average input)			
4. Maximum Production Rate: 65,000 T/Yr metal out of furnaces.			
5. Requested Maximum Operating Schedule:			
24 hours/day		7	days/week
50 weeks/year		8400	hours/year
6. Operating Capacity/Schedule Comment (limit to 200 characters):			

The throughput rate is based on a maximum input feed rate of 7 ton/hr for blast furnace and 11 ton/hr for reverberatory furnace averaged over a 24-hr period. (Worst-case scenario when both furnaces are in operation.)

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

62-204.800 F.A.C.	
40 CFR 63 Subpart A, X	
62-296.603 F.A.C.	
40 CFR 60.122(a)	
62-296.800 F.A.C.	
62-296.700 F.A.C.	
62-4.070(3) F.A.C.	
62-212.300 F.A.C.	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? Main Stack	2. Emission Point Type Code: 2

3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point):

Exhaust stack from baghouse controlling emissions from two furnaces and combined with exhaust from two hygiene baghouses and furnace building ventilation baghouse.

4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:

Blast Furnace and Reverberatory Furnace- Emission Unit ID # 1
New Hygiene Baghouse for Reverberatory Furnace
Upgraded Blast Furnace hygiene baghouse- Emission Unit ID # 4
Furnace Building Ventilation cartridge collector

5. Discharge Type Code: V	6. Stack Height: 100 feet	7. Exit Diameter: 5.95
8. Exit Temperature: 140 °F	9. Actual Volumetric Flow Rate: 120,000 acfm	10. Water Vapor: 3.08 (est) %

11. Maximum Dry Standard Flow Rate: 102,348 dscfm	12. Nonstack Emission Point Height: feet

13. Emission Point UTM Coordinates:

Zone: 17 East (km): 364.086 North (km): 3093.524

14. Emission Point Comment (limit to 200 characters):

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): In process coke burning		
2. Source Classification Code (SCC): 3-90-008-99	3. SCC Units: Tons	
4. Maximum Hourly Rate: 0.60	5. Maximum Annual Rate: 5,000	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.58	8. Maximum % Ash: 5.4	9. Million Btu per SCC Unit: 26
10. Segment Comment (limit to 200 characters):		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Natural Gas Burner for the Reverberatory Furnace		
2. Source Classification Code (SCC): 3-90-008-99	3. SCC Units: Million Cubic Feet	
4. Maximum Hourly Rate: 0.020	5. Maximum Annual Rate 168	6. Estimated Annual Activity Factor:
6. Maximum % Sulfur NA	8. Maximum % Ash: NA	9. Million Btu per SCC Unit: 1000
10. Segment Comment (limit to 200 characters):		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	018	000	EL
SO_2	052	000	EL
NO_x	000	000	EL
CO	000	000	EL
VOC	000	000	EL
Lead	018	000	EL

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM	2. Total Percent Efficiency of Control:
3. Potential Emissions: 2.06 lb/hour 8.64 tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: 0.006 gr/dscf Reference:	7. Emissions Method Code: 0

8. Calculation of Emissions (limit to 600 characters):

0.006 gr/dscf x 40,103 dscfm x 60 min/hr ÷ 7000 gr/lb = 2.06 lb/hr

2.06 lb/hr x 8,400 hr/yr ÷ 2000 lb/ton = 8.64 ton/yr

9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):

Not expected; building ventilated to a cartridge collector

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 0.006 gr/dscf	4. Equivalent Allowable Emissions: 0.006 gr/dscf 8.64 tons/year

5. Method of Compliance (limit to 60 characters):

Annual source testing using EPA Method 5

6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):

62-212.300, 40 CFR 63 Subpart X

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: SO_2	2. Total Percent Efficiency of Control: 90 %	
3. Potential Emissions: 190.2 lb/hour (daily average) 798.84 tons/year		4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year		
6. Emission Factor: Reference:		7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): 190.2 lb/hr (daily average) is based on past two year actual plus 39 tons. 190.2 lb/hr x 8,400 hr/yr ÷ 2000 lb/ton = 798.84 ton/yr		
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Negligible		

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 190.2 lb/hr (Daily average)	4. Equivalent Allowable Emissions: 190.2 lb/hour 798.84 tons/year
5. Method of Compliance (limit to 60 characters): All feed to the furnace is desulfurized and Soda Ash injection after the blend chamber in the flue gases from the furnaces.	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): GCR operates a SO_2 CEMS system and will operate furnace and controls in a manner not to exceed 798.84 tons per year SO_2 emissions.	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: CO	2. Total Percent Efficiency of Control:
3. Potential Emissions: 175.72 lb/hour 738.04 tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: 175.72 lb/hr per Reference:	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): Based on past two year actual plus 99 tons 175.72 lb/hr x 8,400 hr/yr ÷ 2000 lb/ton = 738.04 ton/yr	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Negligible	

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: F.A.C. 62-212-300	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 175.72 lb/hr	4. Equivalent Allowable Emissions: 175.72 lb/hour 738.04 tons/year
5. Method of Compliance (limit to 60 characters): Annual source testing using EPA Method 10 to establish operating conditions	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: VOC (as THC)	2. Total Percent Efficiency of Control:
3. Potential Emissions: 5.66 lb/hour 23.78 tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: 0

8. Calculation of Emissions (limit to 600 characters):

Based on a MACT limit of 20 ppm THC measured as propane for combined exhaust

$20 \times 10^{-6} \div 385.1 \times 44.1$ lb/lb mole of propane x 41,250 scfm x 60 min/hr = 5.66 lb/hr
5.66 lb/hr x 8,400 hr/yr ÷ 2000 lb/ton = 23.78 ton/yr

9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):

Negligible

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: ESCPSD, 40CFR63 Subpart X	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 20 ppm @ 4% CO_2	4. Equivalent Allowable Emissions: 20 ppm @ 4% CO_2

5. Method of Compliance (limit to 60 characters):

Annual source testing using EPA Method 25A

6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):
62-204.800 40 CFR 63 Subpart X
VOC's are measured and reported as THC's measured by EPA Method 25A.

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: NOx	2. Total Percent Efficiency of Control:
3. Potential Emissions: 5.18 lb/hour 21.75 tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): Based on a past actual plus 39 tons and allowing for NO_x from refinery and dryer. 5.18 lb/hr x 8,400 hr/yr ÷ 2000 lb/ton = 21.75 ton/yr	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Negligible	

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 21.75 ton/yr	4. Equivalent Allowable Emissions: 21.75 ton/yr
5. Method of Compliance (limit to 60 characters): Natural gas consumption records	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): 62-204.800	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: Lead	2. Total Percent Efficiency of Control:
3. Potential Emissions: 0.212 lb/hour 0.89 tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: 0.00062 gr/dscf Reference:	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): 0.00062 gr/dscf x 40,013 dscfm x 60 min/hr ÷ 7000 gr/lb = 0.212 lb/hr 0.212 lb/hr x 8,400 hrs/yr ÷ 2000 lb/ton = 0.89 ton/yr	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Furnace building is completely enclosed and vented to a dust collector. No fugitive emissions are expected..	

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: ESCPSD, FAC 62-212-300	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 0.00062 gr/dscf	4. Equivalent Allowable Emissions: 0.00062 gr/dscf 0.89 ton/yr
5. Method of Compliance (limit to 60 characters): Compliance will be demonstrated as outlined in the Baghouse Standard Operating Annual source testing using EPA Method 12	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): 62-212.300	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE03	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: 3% Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: Annual VE readings using EPA Method 9	
5. Visible Emissions Comment (limit to 200 characters):	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor 1 of 1

1. Parameter Code:	2. Pollutant(s): SO2
3. CMS Requirement:	[ ] Rule [X] Other
4. Monitor Information: Manufacturer: Spectrum Systems Model Number: 300	Serial Number: GCR Tampa #1
5. Installation Date: 4/15/01	6. Performance Specification Test Date: 6/27/01
7. Continuous Monitor Comment (limit to 200 characters):	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram [X] Attached, Document ID: C [ ] Not Applicable [ ] Waiver Requested	
2. Fuel Analysis or Specification [ ] Attached, Document ID:____ [X] Not Applicable [ ] Waiver Requested	
3. Detailed Description of Control Equipment [ ] Attached, Document ID:____ [ ] Not Applicable [X] Waiver Requested	
4. Description of Stack Sampling Facilities [ ] Attached, Document ID:____ [ ] Not Applicable [X] Waiver Requested	
5. Compliance Test Report [ ] Attached, Document ID:____ [ ] Previously submitted, Date:____ [X] Not Applicable (All data previously submitted)	
6. Procedures for Startup and Shutdown [ ] Attached, Document ID: * [ ] Not Applicable [ ] Waiver Requested	
7. Operation and Maintenance Plan [ ] Attached, Document ID: * [ ] Not Applicable [ ] Waiver Requested	
8. Supplemental Information for Construction Permit Application [ ] Attached, Document ID:____ [X] Not Applicable	
9. Other Information Required by Rule or Statute [ ] Attached, Document ID:____ [X] Not Applicable	
10. Supplemental Requirements Comment: * These plans are being updated and will be submitted for approval prior to modification start-up.	

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation [ ] Attached, Document ID:________ [X] Not Applicable
12. Alternative Modes of Operation (Emissions Trading) [ ] Attached, Document ID:________ [X] Not Applicable
13. Identification of Additional Applicable Requirements [ ] Attached, Document ID:________ [X] Not Applicable
14. Compliance Assurance Monitoring Plan [ ] Attached, Document ID:________ [X] Not Applicable
15. Acid Rain Part Application (Hard-copy Required) [ ] Acid Rain Part – Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID:________ [ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID:________ [ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID:________ [ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID:________ [ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) Attached, Document ID:________ [ ] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) Attached, Document ID:________ [X] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):

Six (6) gas fired lead refining kettles and two (2) pouring ladles on casting machines

4. Emissions Unit Identification Number: [ ] No ID
ID: 011 [ ] ID Unknown

5. Emissions Unit Status Code: A and C	6. Initial Startup Date: July 2003	7. Emissions Unit Major Group SIC Code: 33	8. Acid Rain Unit? [ ]

9. Emissions Unit Comment: (Limit to 500 Characters)

Addition of two new 78 tons lead refining kettles

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

A four (4) module shaker-type Baghouse with Gore Technology or equivalent bags controlling particulate and lead emissions off the kettle hoods and pouring ladles on casting machines.

The airflow from the modified refining baghouse will be 30,000 acfm.

288 bags/module (3,960 sq. ft./module); total of 15,840 sq. ft.

Gross air/cloth ratio with all modules on line: 1.89:1
Net air/cloth ratio with one module off line: 2.52:1

(Indirect gas combustion exhausted through six separate flue stacks- one for each kettle)

2. Control Device or Method Code(s): 018

Emissions Unit Details

1. Package Unit:
   Manufacturer: Gulf Coast Recycling, Inc. Model Number: N/A
2. Generator Nameplate Rating: N/A MW
3. Incinerator Information:
   Dwell Temperature: °F
   Dwell Time: seconds
   Incinerator Afterburner Temperature: °F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:			25.2[1]	mmBtu/hr
2. Maximum Incineration Rate:	N/A	lb/hr		tons/day
3. Maximum Process or Throughput Rate:				
4. Maximum Production Rate: [2]				
5. Requested Maximum Operating Schedule:				
	24	hours/day	7	days/week
	52	weeks/year	8760	hours/year

6. Operating Capacity/Schedule Comment (limit to 200 characters):

[1] The maximum heat input rate shown is the total for all six kettles. Each kettle is 4.2 mm Btu/hr. The products of combustion for the indirect fired kettles are exhausted through separate flues than the kettle hoods.

[2] Nominal charge size is 86 tons per charge per kettle (varies with type of lead being produced)

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

62-296.603(1)(d) F.A.C.	
40 CFR 63 Subpart A & X	
62-204.800 F.A.C.	
62-296.603 F.A.C.	
62-212.300 F.A.C.	
62-4.07(3) F.A.C.	
62-4.210 F.A.C.	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? Refining Stack		2. Emission Point Type Code: 2
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): • Baghouse exhaust stack controlling kettle hoods • Six separate stack exhausting indirect gas combustion emissions (Exempt)		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: 011 Hood Exhaust for six (6) gas fired alloying kettles		
5. Discharge Type Code: V	6. Stack Height: 60.5 feet	7. Exit Diameter: 3.0 feet
8. Exit Temperature: 120°F	9. Actual Volumetric Flow Rate 30,000 acfm	10. Water Vapor: 1.7 % EST.
11. Maximum Dry Standard Flow Rate: 26,846 dscfm		12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates: Zone: 17 East (km): 364.019 North (km): 3093.575		
14. Emission Point Comment (limit to 200 characters): NOTE: The burner products of combustion are not exhausted through this stack.		

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Natural gas used in refining kettle heaters.		
2. Source Classification Code (SCC):	3. SCC Units: Million Cubic Feet	
4. Maximum Hourly Rate: 0.0252	5. Maximum Annual Rate: 220.752	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: N/A	8. Maximum % Ash: N/A	9. Million Btu per SCC Unit: 1,000
10. Segment Comment (limit to 200 characters): Maximum hourly rate based on all burners operating at full fire; however, plant does not ever operate in that mode.		

Segment Description and Rate: Segment _____ of ____

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	018	000	EL
Lead	018	000	EL
NO_x	000	000	EL

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM	2. Total Percent Efficiency of Control: +99%
3. Potential Emissions: 1.01 lb/hour 4.43 tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: 0.0044 gr/dscf Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters): 0.0044 gr/dscf x 26,846 dscfm x 60 min/hr ÷ 7000 gr/lb = 1.01 lb/hr 1.01 lb/hr x 8,760 hr/yr ÷ 2000 lb/ton = 4.43 ton/yr	
10. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): See Appendix B for fugitive emission estimates	

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 0.0044 gr/dscf	4. Equivalent Allowable Emissions: 0.0044 gr/dscf 4.43 tons/year
5. Method of Compliance (limit to 60 characters): Annual compliance testing using EPA Method 5	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: Lead	2. Total Percent Efficiency of Control: +99%
3. Potential Emissions: 0.046 lb/hour 0.202 tons/year	4. Synthetically Limited? [X
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: 0.0002 gr/dscf Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters): 0.0002 gr/dscf x 26,846 dscfm x 60 min/hr ÷ 7000 gr/lb = 0.046 lb/hr 0.046 lb/hr x 8,760 hr/yr ÷ 2000 lb/ton = 0.202 ton/yr	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): See Appendix B for fugitive emission estimate.	

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: F.A.C. 62-296.603	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 0.0002 gr/dscf	4. Equivalent Allowable Emissions: 0.0002 gr/dscf 0.202 tons/year
5. Method of Compliance (limit to 60 characters): Compliance will be demonstrated as outlined in the Baghouse Standard Operating Procedures Manual. Annual source testing using EPA Method 12	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: NO_x	2. Total Percent Efficiency of Control:	
3. Potential Emissions: lb/hour 30.0 tons/year		4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year		
6. Emission Factor: 0.24 lb/lb $NaNO_3$ for $NaNO_3$ Reference:		7. Emissions Method Code: 3, 5

8. Calculation of Emissions (limit to 600 characters):

250,000 lb $NaNO_3$/yr x 0.24 lb NO_X/lb $NaNO_3$ x 1 ton/2000 lb = 30 ton/yr

250,000 lb $NaNO_3$/yr x 0.24 lb NO_X/lb $NaNO_3$ x 1 yr/8760 hr = 6.85 lb/hr (annual average)

9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 30 ton/yr	4. Equivalent Allowable Emissions: N/A lb/hr 30 tons/year

5. Method of Compliance (limit to 60 characters):
$NaNO_3$ usage not to exceed 250,000 lb in any consecutive twelve month period.

6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE03	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: 3% Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: Annual Visible emissions reading using EPA Method 9	
5. Visible Emissions Comment (limit to 200 characters):	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram [X] Attached, Document ID:____C____ [ ] Not Applicable [ ] Waiver Requested
2. Fuel Analysis or Specification [ ] Attached, Document ID:________ [X] Not Applicable [ ] Waiver Requested
3. Detailed Description of Control Equipment [ ] Attached, Document ID: [ ] Not Applicable [X] Waiver Requested
4. Description of Stack Sampling Facilities [ ] Attached, Document ID:________ [ ] Not Applicable [X] Waiver Requested
5. Compliance Test Report [ ] Attached, Document ID:________ [ ] Previously submitted, Date:_______________ [X] Not Applicable
6. Procedures for Startup and Shutdown [ ] Attached, Document ID:____*____ [ ] Not Applicable [ ] Waiver Requested
7. Operation and Maintenance Plan [ ] Attached, Document ID:____*____ [ ] Not Applicable [ ] Waiver Requested
8. Supplemental Information for Construction Permit Application [ ] Attached, Document ID:________ [X] Not Applicable
9. Other Information Required by Rule or Statute [ ] Attached, Document ID:________ [X] Not Applicable
10. Supplemental Requirements Comment: * These plans are being updated and will be submitted for approval prior to modification start-up.

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation [ ] Attached, Document ID:________ [X] Not Applicable	
12. Alternative Modes of Operation (Emissions Trading) [ ] Attached, Document ID:________ [X] Not Applicable	
13. Identification of Additional Applicable Requirements [ ] Attached, Document ID:________ [X] Not Applicable	
14. Compliance Assurance Monitoring Plan [ ] Attached, Document ID:________ [X] Not Applicable	
15. Acid Rain Part Application (Hard-copy Required) [ ] Acid Rain Part – Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID:________ [ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID:________ [ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID:________ [ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID:________ [ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) Attached, Document ID:________ [ ] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) Attached, Document ID:________ [X] Not Applicable	

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):

Upgraded Blast Furnace Charging and Tapping baghouse

4. Emissions Unit Identification Number:
ID: 004

[ ] No ID
[ ] ID Unknown

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A		33	[ ]

9. Emissions Unit Comment: (Limit to 500 Characters)

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

A four (4) module shaker-type baghouse with Gore Technology or equivalent bags. Baghouse controlling emissions from Blast Furnace Charging and Tapping

The airflow from the upgraded hygiene baghouse will be 20,000 acfm.

204 bags/module (2,805 sq. ft./module); total of 11,220 sq. ft.

Gross air/cloth ratio with all modules on line: 1.78:1
Net air/cloth ratio with one module off line: 2.38:1

A bank of HEPA filters will be installed at the outlet of the upgraded hygiene baghouse.

2. Control Device or Method Code(s): 018, 101

Emissions Unit Details

1. Package Unit:
   Manufacturer: Gulf Coast Recycling, Inc Model Number: N/A
2. Generator Nameplate Rating: N/A MW
3. Incinerator Information:
   Dwell Temperature: °F
   Dwell Time: seconds
   Incinerator Afterburner Temperature: °F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:			mmBtu/hr	
2. Maximum Incineration Rate:	lb/hr		tons/day	
3. Maximum Process or Throughput Rate: N/A See 001				
4. Maximum Production Rate: N/A				
5. Requested Maximum Operating Schedule:				
	24	hours/day	7	days/week
	50	weeks/year	8,400	hours/year
6. Operating Capacity/Schedule Comment (limit to 200 characters): Process and Production rates based on 24-hour average				

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

40 CFR 63 Subpart A & X	
62-204.800 F.A.C.	
62-296.700 F.A.C.	
62-296.800 F.A.C.	
62-296.603 F.A.C.	
62-212.300 F.A.C.	
40 CFR 60.122(a)	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? Main Stack	2. Emission Point Type Code: 2

3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point):

The upgraded hygiene baghouse exhaust will be vented through the combined main stack which collectively vents the furnace process baghouse, furnace building cartridge collector, new hygiene baghouse and the upgraded blast furnace hygiene baghouse.

4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:

Blast Furnace and Reverberatory Furnace- Emission Unit ID # 1
New Hygiene Baghouse for reverberatory furnace
Upgraded Hygiene Baghouse for Blast furnace - Emission Unit ID # 4
Furnace Building Ventilation cartridge collector

5. Discharge Type Code: V	6. Stack Height: 100	7. Exit Diameter: 5.95 feet
8. Exit Temperature: 140 °F	9. Actual Volumetric Flow Rate: 120,000 acfm	10. Water Vapor: 3.08 (est.) %

11. Maximum Dry Standard Flow Rate: 102,348 dscfm	12. Nonstack Emission Point Height: feet

13. Emission Point UTM Coordinates:

Zone: 17 East (km): 364.086 North (km): 3093.524

14. Emission Point Comment (limit to 200 characters):

The upgraded hygiene baghouse exhaust will be vented through the combined main stack which collectively vents the furnace process baghouse, furnace building cartridge collector, new hygiene baghouse and the upgraded blast furnace hygiene baghouse

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
2. Source Classification Code (SCC):	3. SCC Units: Tons	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	018, 101 *	000	EL
VOC	000	000	EL
Lead	018, 101*	000	EL
*** HEPA filters following the baghouse**			

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM	2. Total Percent Efficiency of Control: +99%
3. Potential Emissions: 0.96 lb/hour 4.03 tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: 0.005 gr/dscf Reference:	7. Emissions Method Code: 0

8. Calculation of Emissions (limit to 600 characters):

0.005 gr/dscf x 17,897 dscfm x 60 min/hr ÷ 7000 gr/lb = 0.77 lb/hr

0.77 lb/hr x 8,400 hr/yr ÷ 2,000 lb/ton = 3.22 ton/yr

9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):
A bank of HEPA filters will be installed at the outlet of the baghouse for high removal efficiency.

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 0.77 lb/hr	4. Equivalent Allowable Emissions: 0.77 lb/hour 3.22 tons/year

5. Method of Compliance (limit to 60 characters):
Compliance will be demonstrated as outlined in the Baghouse Standard Operating Procedures Manual

Annual Source Testing using Method 5.

6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):

Rule 62-212.300, 40 CFR 63 Subpart X

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: VOC	2. Total Percent Efficiency of Control:
3. Potential Emissions: N/A lb/hour 10.32 tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: 20 ppm_v Reference:	7. Emissions Method Code:

8. Calculation of Emissions (limit to 600 characters):

At 17,897 CFM hood volume,

$20 \times 10^{-6} \div 385.1 \times 44.1 \times 17{,}897\ ft^3/min \times 60\ min/hr = 2.45\ lb/hr$

$2.45\ lb/hr \times 8{,}400\ hr/yr \div 20{,}00\ lb/ton = 10.32\ ton/yr$

9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: 40 CFR Part 63, Subpart X	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 20 ppm_v @ 4 % CO_2	4. Equivalent Allowable Emissions: 20 ppm_v @ 4 % CO_2 12.9 tons/year

5. Method of Compliance (limit to 60 characters):
Annual source testing using EPA Method 25A
Annual face velocity testing using EPA Method 2 or Anemometer

6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):

Part per million limit established by 40 CFR Subpart 63, Subpart X for charging hoods not blended with process exhaust.

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: Lead	2. Total Percent Efficiency of Control: +99%	
3. Potential Emissions: 0.0061 lb/hour 0.026 tons/year		4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year		
6. Emission Factor: 0.00004 gr/dscf Reference:		7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters): 0.00004 gr/dscfm x 17,897 dscfm x 60 min/hr divided by 7000 gr/lb = 0.0061 lb/hr and (0.0061 lb/hr) (8,400 hr/yr) / (2000 lb/T) = 0.026 T/yr		
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): See Appendix B for lead fugitive dust estimates used in modeling analysis.		

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: 40CFR63 Subpart X, ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 0.00004 gr/dscf	4. Equivalent Allowable Emissions: 0.00004 gr/dscf 0.026 tons/year
5. Method of Compliance (limit to 60 characters): Annual source testing using EPA Method 12	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): 62-212.300, 40 CFR 63, Subpart X	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE03 VE06	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: VE03 Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: Annual VE readings using EPA Method 9	
5. Visible Emissions Comment (limit to 200 characters): VE-03 for the main stack.	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: [ ] Rule [ ] Other	
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram [X] Attached, Document ID: C [ ] Not Applicable [ ] Waiver Requested
2. Fuel Analysis or Specification [ ] Attached, Document ID:________ [X] Not Applicable [ ] Waiver Requested
3. Detailed Description of Control Equipment [ ] Attached, Document ID:________ [ ] Not Applicable [X] Waiver Requested
4. Description of Stack Sampling Facilities [ ] Attached, Document ID:________ [X] Not Applicable [ ] Waiver Requested
5. Compliance Test Report [ ] Attached, Document ID:________ [ ] Previously submitted, Date:_______________ [X] Not Applicable
6. Procedures for Startup and Shutdown [ ] Attached, Document ID: * [ ] Not Applicable [ ] Waiver Requested
7. Operation and Maintenance Plan [ ] Attached, Document ID: * [ ] Not Applicable [ ] Waiver Requested
8. Supplemental Information for Construction Permit Application [ ] Attached, Document ID:________ [X] Not Applicable
9. Other Information Required by Rule or Statute [ ] Attached, Document ID:________ [X] Not Applicable
10. Supplemental Requirements Comment: * These plans are being updated and will be submitted for approval prior to modification start-up.

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation [ ] Attached, Document ID:________ [X] Not Applicable	
12. Alternative Modes of Operation (Emissions Trading) [ ] Attached, Document ID:________ [X] Not Applicable	
13. Identification of Additional Applicable Requirements [ ] Attached, Document ID:________ [X] Not Applicable	
14. Compliance Assurance Monitoring Plan [ ] Attached, Document ID:________ [X] Not Applicable	
15. Acid Rain Part Application (Hard-copy Required) [ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID:________ [ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID:________ [ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID:________ [ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID:________ [ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) Attached, Document ID:________ [ ] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) Attached, Document ID:________ [X] Not Applicable	

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):

Furnace building ventilation cartridge collector

4. Emissions Unit Identification Number: [X] No ID
ID: [ ] ID Unknown

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C	July 2003	33	[ ]

9. Emissions Unit Comment: (Limit to 500 Characters)
The furnace building will be completely enclosed and vented to a cartridge collector

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

A cartridge dust collector with FINE FIBER Technology or equivalent filter media. Cartridge dust collector will control fugitive emissions not captured by the Blast Furnace hygiene hooding and Reverberatory Furnace hygiene hooding.

2. Control Device or Method Code(s): 018

Emissions Unit Details

1. Package Unit:
   Manufacturer: Gulf Coast Recycling, Inc — Model Number: N/A
2. Generator Nameplate Rating: N/A MW
3. Incinerator Information:
   Dwell Temperature: °F
   Dwell Time: seconds
   Incinerator Afterburner Temperature: °F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:			mmBtu/hr
2. Maximum Incineration Rate:	lb/hr		tons/day
3. Maximum Process or Throughput Rate: N/A			
4. Maximum Production Rate: N/A			
5. Requested Maximum Operating Schedule:			
	24 hours/day	7	days/week
	50 weeks/year	8,400	hours/year
6. Operating Capacity/Schedule Comment (limit to 200 characters): Process and Production rates based on 24-hour average			

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

40 CFR 63 Subpart A & X	
62-204.800 F.A.C.	
62-296.700 F.A.C.	
62-296.800 F.A.C.	
62-296.603 F.A.C.	
62-212.300 F.A.C.	
40 CFR 60.122(a)	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? Main Stack	3. Emission Point Type Code: 2

3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point):

The furnace building ventilation cartridge collector exhaust will be vented through the combined main stack which collectively vents the furnace process baghouse, furnace building cartridge collector, new hygiene baghouse and the upgraded blast furnace hygiene baghouse

4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:

Blast Furnace and Reverberatory Furnace- Emission Unit ID # 1
New Hygiene Baghouse for reverberatory furnace
Upgraded Hygiene Baghouse- Emission Unit ID # 4
Furnace Building Ventilation cartridge collector

5. Discharge Type Code: V	6. Stack Height: 100	7. Exit Diameter: 5.95 feet
8. Exit Temperature: 140 °F	9. Actual Volumetric Flow Rate: 120,000 acfm	10. Water Vapor: 3.08 (est.) %

11. Maximum Dry Standard Flow Rate: 102,348 dscfm	12. Nonstack Emission Point Height: feet

13. Emission Point UTM Coordinates:

Zone: 17 East (km): 364.086 North (km): 3093.524

14. Emission Point Comment (limit to 200 characters):

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment ____ of ____

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
2. Source Classification Code (SCC):	3. SCC Units: Tons	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

Segment Description and Rate: Segment ____ of ____

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	018	000	EL
Lead	018	000	EL

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM	2. Total Percent Efficiency of Control: +99%
3. Potential Emissions: 0.99 lb/hour 4.17 tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: 0.005 gr/dscf Reference:	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): 0.005 gr/dscf x 23,171 dscfm x 60 min/hr ÷ 7000 gr/lb = 0.99 lb/hr 0.99 lb/hr x 8,400 hr/yr ÷ 2,000 lb/ton = 4.17 ton/yr	
10. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 0.99 lb/hr	4. Equivalent Allowable Emissions: 0.99 lb/hour 4.17 tons/year
5. Method of Compliance (limit to 60 characters): Compliance will be demonstrated as outlined in the Baghouse Standard Operating Procedures Manual Annual Source Testing using Method 5.	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Rule 62-212.300, 40 CFR 63, Subpart X	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: Lead	2. Total Percent Efficiency of Control: +99%
3. Potential Emissions: 0.0079 lb/hour 0.033 tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: 0.00004 gr/dscf Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters): 0.00004 gr/dscfm x 23,171 dscfm x 60 min/hr divided by 7000 gr/lb = 0.0079 lb/hr and (0.0079 lb/hr) (8,400 hr/yr) / (2000 lb/T) = 0.033 T/yr	
10. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): See Appendix B for lead fugitive dust estimates used in modeling analysis.	

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: 40CFR63, Subpart X	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 0.00004 gr/dscf	4. Equivalent Allowable Emissions: 0.00004 gr/dscf 0.033 tons/year
5. Method of Compliance (limit to 60 characters): Annual source testing using EPA Method 12	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): 62-212.300	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE03	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: VE03 Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: Annual VE readings using EPA Method 9	
5. Visible Emissions Comment (limit to 200 characters): VE03 – At the exit of the Main Stack	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram [X] Attached, Document ID: C [ ] Not Applicable [ ] Waiver Requested
2. Fuel Analysis or Specification [ ] Attached, Document ID:________ [X] Not Applicable [ ] Waiver Requested
3. Detailed Description of Control Equipment [ ] Attached, Document ID:________ [ ] Not Applicable [X] Waiver Requested
4. Description of Stack Sampling Facilities [ ] Attached, Document ID:________ [X] Not Applicable [ ] Waiver Requested
5. Compliance Test Report [ ] Attached, Document ID:________ [ ] Previously submitted, Date:________________ [X] Not Applicable
6. Procedures for Startup and Shutdown [ ] Attached, Document ID: * [ ] Not Applicable [ ] Waiver Requested
7. Operation and Maintenance Plan [ ] Attached, Document ID: * [ ] Not Applicable [ ] Waiver Requested
8. Supplemental Information for Construction Permit Application [ ] Attached, Document ID:________ [X] Not Applicable
9. Other Information Required by Rule or Statute [ ] Attached, Document ID:________ [X] Not Applicable
10. Supplemental Requirements Comment: * These plans are being updated and will be submitted for approval prior to modification start-up.

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation
[ ] Attached, Document ID:________ [X] Not Applicable

12. Alternative Modes of Operation (Emissions Trading)
[ ] Attached, Document ID:________ [X] Not Applicable

13. Identification of Additional Applicable Requirements
[ ] Attached, Document ID:________ [X] Not Applicable

14. Compliance Assurance Monitoring Plan
[ ] Attached, Document ID:________ [X] Not Applicable

15. Acid Rain Part Application (Hard-copy Required)

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID:________

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID:________

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID:________

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID:________

[ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
Attached, Document ID:________

[ ] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
Attached, Document ID:________

[X] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):
CRT/ Pallet Crushing Operations

4. Emissions Unit Identification Number: [ ] No ID
ID: 012 [ ] ID Unknown

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C	July 2003	33	[ ]

9. Emissions Unit Comment: (Limit to 500 Characters)

The emissions from the CRT/ pallet crusher will be routed to the scrubber in the battery breaking operations..

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method): The emissions from the CRT/ pallet crusher will be controlled in the battery breaking scrubber. Air flow through the scrubber = 25,000 acfm.
2. Control Device or Method Code(s): 002

Emissions Unit Details

1. Package Unit: Manufacturer:	Model Number:
2. Generator Nameplate Rating:	MW
3. Incinerator Information: Dwell Temperature: Dwell Time: Incinerator Afterburner Temperature:	 °F seconds °F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:			mmBtu/hr
2. Maximum Incineration Rate:	N/A lb/hr		tons/day
3. Maximum Process or Throughput Rate: 5,000 lb/hr for crusher			
4. Maximum Production Rate: N/A			
5. Requested Maximum Operating Schedule:			
	24 hours/day		6 days/week
	52 weeks/year		7,488 hours/year
6. Operating Capacity/Schedule Comment (limit to 200 characters): The crusher will be utilized alternately between pallet and CRT's. Annual throughput is projected to be approximately 1,250,000 lb/yr pallets and approximately 2,520,000 lb/yr CRT's. Maximum operating time for the crusher is 7,488 hours per year.			

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

62-204 F.A.C.	
62-296.603 F.A.C.	
40 CFR 63 Subparts A and X	
62-212.300 F.A.C.	
62-4.070(3) F.A.C.	
62-296.320 F.A.C.	
62-4.210 F.A.C.	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? Scrubber Stack	2. Emission Point Type Code: 2
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): Exhaust Stack from scrubber controlling emissions from a crusher and emissions from the battery breaker.	
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: Battery Breaking – No ID and CRT pallet Crushing – ID 012	

5. Discharge Type Code: V	6. Stack Height: 40 feet	7. Exit Diameter: 2.96 feet
8. Exit Temperature: Ambient,	9. Actual Volumetric Flow Rate: 25,000 acfm	10. Water Vapor: ~ 1.7 %

11. Maximum Dry Standard Flow Rate: 24,029 dscfm	12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates: Zone: 17 East (km): 364.005 North (km): 3093.521	
14. Emission Point Comment (limit to 200 characters):	

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type) (limit to 500 characters): None		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	002		EL
Lead	002		EL

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM	2. Total Percent Efficiency of Control: 90%
3. Potential Emissions: 70.56 lb/yr 0.036 tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: 0.0084 lb/hr Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters): 0.0084 lb/hr x 8,400 hr/yr ÷ 2,000 lb/ton = 0.036 ton/yr	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
2. Requested Allowable Emissions and Units: 0.0084 lb/hr	4. Equivalent Allowable Emissions: 0.0084 lb/hour 0.036 tons/year
5. Method of Compliance (limit to 60 characters): Compliance will be demonstrated as outlined in the Standard Operating Procedures. Additionally Annual source testing per EPA Method 5	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): 62-212.300	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: Lead	2. Total Percent Efficiency of Control: 90%
3. Potential Emissions: 0.0042 lb/hour 0.018 tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: 0.0042 lb/hr Reference:	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): 0.0042 lb/hr x 8,400 hr/yr ÷ 2,000 lb/ton = 0.018 ton/yr	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: F.A.C. 62.212.300,	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 0.0042 lb/hr	4. Equivalent Allowable Emissions: 0.0042 lb/hr 0.018 tons/year
5. Method of Compliance (limit to 60 characters): Compliance will be demonstrated as outlined in the Standard Operating Procedures. Additionally Annual source testing per EPA Method 12	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): 62-212.300	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: 3 % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment (limit to 200 characters):	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram [X] Attached, Document ID: C [ ] Not Applicable [ ] Waiver Requested
2. Fuel Analysis or Specification [ ] Attached, Document ID:________ [X] Not Applicable [ ] Waiver Requested
3. Detailed Description of Control Equipment [ ] Attached, Document ID:________ [ ] Not Applicable [X] Waiver Requested
4. Description of Stack Sampling Facilities [ ] Attached, Document ID:________ [X] Not Applicable [ ] Waiver Requested
5. Compliance Test Report [ ] Attached, Document ID:________ [ ] Previously submitted, Date:______________ [X] Not Applicable
6. Procedures for Startup and Shutdown [ ] Attached, Document ID: * [ ] Not Applicable [ ] Waiver Requested
7. Operation and Maintenance Plan [ ] Attached, Document ID: * [ ] Not Applicable [ ] Waiver Requested
8. Supplemental Information for Construction Permit Application [ ] Attached, Document ID:________ [X] Not Applicable
9. Other Information Required by Rule or Statute [ ] Attached, Document ID:________ [X] Not Applicable
10. Supplemental Requirements Comment:

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation [ ] Attached, Document ID:________ [X] Not Applicable
12. Alternative Modes of Operation (Emissions Trading) [ ] Attached, Document ID:________ [X] Not Applicable
13. Identification of Additional Applicable Requirements [ ] Attached, Document ID:________ [X] Not Applicable
14. Compliance Assurance Monitoring Plan [ ] Attached, Document ID:________ [X] Not Applicable
15. Acid Rain Part Application (Hard-copy Required) [ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID:________ [ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID:________ [ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID:________ [ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID:________ [ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) Attached, Document ID:________ [ ] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) Attached, Document ID:________ [X] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):

New Reverberatory Furnace Charging and Tapping baghouse

4. Emissions Unit Identification Number: [X] No ID
ID: [ ] ID Unknown

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C	July 2003	33	[ ]

9. Emissions Unit Comment: (Limit to 500 Characters)
A bank of HEPA filters will be installed at the outlet of the baghouse for high removal efficiency

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

A five (5) module shaker-type baghouse with Gore Technology or equivalent bags. Baghouse controlling emissions from Reverberatory Furnace Charging and Tapping

The airflow from the reverberatory hygiene baghouse will be 25,000 acfm

204 bags/module (2,805 sq. ft./module); total of 14,025 sq. ft.

Gross air/cloth ratio with all modules on line: 1.78:1
Net air/cloth ratio with one module off line: 2.23:1

OR

A four (4) module shaker-type baghouse with Gore Technology or equivalent bags. Baghouse controlling emissions from Reverberatory Furnace Charging and Tapping

288 bags/module (3,960 sq. ft./module); total of 15,840 sq. ft.

Gross air/cloth ratio with all modules on line: 1.58:1
Net air/cloth ratio with one module off line: 2.10:1

A bank of HEPA filter will be installed after the baghouse exhaust.

2. Control Device or Method Code(s): 018, 101

Emissions Unit Details

1. Package Unit:
   Manufacturer: Gulf Coast Recycling, Inc Model Number: N/A
2. Generator Nameplate Rating: N/A MW
3. Incinerator Information:
   Dwell Temperature: °F
   Dwell Time: seconds
   Incinerator Afterburner Temperature: °F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:				mmBtu/hr
2. Maximum Incineration Rate:		lb/hr		tons/day
3. Maximum Process or Throughput Rate: N/A See 001				
4. Maximum Production Rate: N/A				
5. Requested Maximum Operating Schedule:				
	24	hours/day	7	days/week
	50	weeks/year	8,400	hours/year
6. Operating Capacity/Schedule Comment (limit to 200 characters): Process and Production rates based on 24-hour average				

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

40 CFR 63 Subpart A & X	
62-204.800 F.A.C.	
62-296.700 F.A.C.	
62-296.800 F.A.C.	
62-296.603 F.A.C.	
62-212.300 F.A.C.	
40 CFR 60.122(a)	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? Main Stack	4. Emission Point Type Code: 2

3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point):

Exhaust from this baghouse is vented through the main stack.

4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:
Blast Furnace and Reverberatory Furnace- Emission Unit ID # 1
New Hygiene Baghouse for Reverberatory
Upgraded Hygiene Baghouse for blast furnace- Emission Unit ID # 4
Furnace Building cartridge collector

5. Discharge Type Code: V	6. Stack Height: 100	7. Exit Diameter: 5.95 feet
8. Exit Temperature: 140 °F	9. Actual Volumetric Flow Rate: 120,000 acfm	10. Water Vapor: 3.08 (est.) %

11. Maximum Dry Standard Flow Rate: 102,348 dscfm	12. Nonstack Emission Point Height: feet

13. Emission Point UTM Coordinates:

Zone: 17 East (km): 364.086 North (km): 3093.524

14. Emission Point Comment (limit to 200 characters):

The new reverb furnace hygiene baghouse exhaust will be vented through the combined main stack which collectively vents the furnace process baghouse, building ventilation cartridge collector, new reverb furnace hygiene baghouse and the upgraded blast furnace hygiene baghouse.

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Reverberatory Furnace Charging and Tapping		
2. Source Classification Code (SCC):	3. SCC Units: Tons	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	018, 101*	000	EL
Lead	018, 101*	000	EL
HEPA filter will be installed at the outlet of the baghouse exhaust.			

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM	2. Total Percent Efficiency of Control: +99%
3. Potential Emissions: 0.96 lb/hour 4.03 tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: 0.005 gr/dscf Reference:	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): 0.005 gr/dscf x 22,372 dscfm x 60 min/hr ÷ 7000 gr/lb = 0.96 lb/hr 0.96 lb/hr x 8,400 hr/yr ÷ 2,000 lb/ton = 4.03 ton/yr	
11. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): .Fugitive emissions not captured by the hygiene hooding are routed to the new furnace building cartridge collector.	

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 0.96 lb/hr	4. Equivalent Allowable Emissions: 0.96 lb/hour 4.03 tons/year
5. Method of Compliance (limit to 60 characters): Compliance will be demonstrated as outlined in the Baghouse Standard Operating Procedures Manual Annual Source Testing using Method 5.	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Rule 62-212.300, 40 CFR 63, Subpart X	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: Lead	2. Total Percent Efficiency of Control: +99%
3. Potential Emissions: 0.0077 lb/hour 0.032 tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: 0.00004 gr/dscf Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters): 0.00004 gr/dscfm x 22,372 dscfm x 60 min/hr ÷ 7000 gr/lb = 0.0077 lb/hr 0.0077 lb/hr x 8,400 hr/yr ÷ 2,000 lb/ton = 0.032 ton/yr	
11. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): See Appendix B for lead fugitive dust estimates used in modeling analysis.	

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: 40CFR63, Subpart X and ESPPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 0.00004 gr/dscf	4. Equivalent Allowable Emissions: 0.00004 gr/dscf 0.032 tons/year
5. Method of Compliance (limit to 60 characters): Annual source testing using EPA Method 12	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): 62-212.300	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE03 VE06	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: VE03 Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: Annual VE readings using EPA Method 9	
5. Visible Emissions Comment (limit to 200 characters): VE03 – At the exit of the main stack VE06 – From the reverberatory furnace during charging.	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram
   [X] Attached, Document ID: C [ ] Not Applicable [ ] Waiver Requested

2. Fuel Analysis or Specification
   [ ] Attached, Document ID:________ [X] Not Applicable [ ] Waiver Requested

3. Detailed Description of Control Equipment
   [ ] Attached, Document ID:________ [ ] Not Applicable [X] Waiver Requested

4. Description of Stack Sampling Facilities
   [ ] Attached, Document ID:________ [X] Not Applicable [ ] Waiver Requested

5. Compliance Test Report
   [ ] Attached, Document ID:________
   [ ] Previously submitted, Date:____________
   [X] Not Applicable

6. Procedures for Startup and Shutdown
   [ ] Attached, Document ID: * [ ] Not Applicable [ ] Waiver Requested

7. Operation and Maintenance Plan
   [ ] Attached, Document ID: * [ ] Not Applicable [ ] Waiver Requested

8. Supplemental Information for Construction Permit Application
   [ ] Attached, Document ID:________ [X] Not Applicable

9. Other Information Required by Rule or Statute
   [ ] Attached, Document ID:________ [X] Not Applicable

10. Supplemental Requirements Comment:

* These plans are being updated and will be submitted for approval prior to modification start-up.

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation
    [ ] Attached, Document ID:________ [X] Not Applicable

12. Alternative Modes of Operation (Emissions Trading)
    [ ] Attached, Document ID:________ [X] Not Applicable

13. Identification of Additional Applicable Requirements
    [ ] Attached, Document ID:________ [X] Not Applicable

14. Compliance Assurance Monitoring Plan
    [ ] Attached, Document ID:________ [X] Not Applicable

15. Acid Rain Part Application (Hard-copy Required)

    [ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
    Attached, Document ID:________

    [ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
    Attached, Document ID:________

    [ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
    Attached, Document ID:________

    [ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
    Attached, Document ID:________

    [ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
    Attached, Document ID:________

    [ ] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
    Attached, Document ID:________

    [X] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):

Battery Breaking Operation

4. Emissions Unit Identification Number: ID: — [X] No ID [ ] ID Unknown

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A and C	July 2003	33	[ ]

9. Emissions Unit Comment: (Limit to 500 Characters)
A scrubber will be installed to control emissions from battery breaker operation.

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method): A 25,000 acfm packed bed acid scrubber will be used to control the acid mist from battery breaking operation and PM emissions from CRT/pallet crusher.
2. Control Device or Method Code(s): 002

Emissions Unit Details

1. Package Unit: Manufacturer:	Model Number: N/A	
2. Generator Nameplate Rating: N/A	MW	
3. Incinerator Information: Dwell Temperature: Dwell Time: Incinerator Afterburner Temperature:		 °F seconds °F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:				mmBtu/hr
2. Maximum Incineration Rate:		lb/hr		tons/day
3. Maximum Process or Throughput Rate: N/A See 001				
4. Maximum Production Rate: N/A				
5. Requested Maximum Operating Schedule:				
	24	hours/day	6	days/week
	52	weeks/year	7,488	hours/year
6. Operating Capacity/Schedule Comment (limit to 200 characters): Process and Production rates based on 24-hour average				

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

40 CFR 63 Subpart A & X	
62-204.800 F.A.C.	
62-296.700 F.A.C.	
62-296.800 F.A.C.	
62-296.603 F.A.C.	
62-212.300 F.A.C.	
40 CFR 60.122(a)	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? Battery Breaking	5. Emission Point Type Code: 1

3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point):

The scrubber controls the exhaust from battery breaker and CRT/pallet crusher.

4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:

Battery Breaker No ID and CRT/pallet crusher –ID 012

5. Discharge Type Code: V	6. Stack Height: 40	7. Exit Diameter: 2.96 feet
8. Exit Temperature: Ambient °F	9. Actual Volumetric Flow Rate: 25,000 acfm	10. Water Vapor: ~ 1.7 %

11. Maximum Dry Standard Flow Rate: 24,029 dscfm	12. Nonstack Emission Point Height: feet

13. Emission Point UTM Coordinates:

Zone: 17 East (km): 364.005 North (km): 3093.521

14. Emission Point Comment (limit to 200 characters):

The exhaust from CRT/pallet crusher will be vented through the scrubber.

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
2. Source Classification Code (SCC):	3. SCC Units: Tons	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	002	000	EL
Lead	002	000	EL

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM and Lead	2. Total Percent Efficiency of Control: 90 %
3. Potential Emissions: See emissions Unit No 12 (CRT Crusher)	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters):	
12. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Fugitive emissions are estimated in Appendix B and used in the modeling.	

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units:	4. Equivalent Allowable Emissions:
5. Method of Compliance (limit to 60 characters):	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE03	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: VE03 Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: Annual VE readings using EPA Method 9	
5. Visible Emissions Comment (limit to 200 characters): VE03 – At the exit of the scrubber stack	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram [X] Attached, Document ID: __C__ [ ] Not Applicable [ ] Waiver Requested	
2. Fuel Analysis or Specification [ ] Attached, Document ID:________ [X] Not Applicable [ ] Waiver Requested	
3. Detailed Description of Control Equipment [ ] Attached, Document ID:________ [ ] Not Applicable [X] Waiver Requested	
4. Description of Stack Sampling Facilities [ ] Attached, Document ID:________ [X] Not Applicable [ ] Waiver Requested	
5. Compliance Test Report [ ] Attached, Document ID:________ [ ] Previously submitted, Date:______________ [X] Not Applicable	
6. Procedures for Startup and Shutdown [ ] Attached, Document ID: __*__ [ ] Not Applicable [ ] Waiver Requested	
7. Operation and Maintenance Plan [ ] Attached, Document ID: __*__ [ ] Not Applicable [ ] Waiver Requested	
8. Supplemental Information for Construction Permit Application [ ] Attached, Document ID:________ [X] Not Applicable	
9. Other Information Required by Rule or Statute [ ] Attached, Document ID:________ [X] Not Applicable	
10. Supplemental Requirements Comment: * These plans are being updated and will be submitted for approval prior to modification start-up.	

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation [ ] Attached, Document ID:________ [X] Not Applicable
12. Alternative Modes of Operation (Emissions Trading) [ ] Attached, Document ID:________ [X] Not Applicable
13. Identification of Additional Applicable Requirements [ ] Attached, Document ID:________ [X] Not Applicable
14. Compliance Assurance Monitoring Plan [ ] Attached, Document ID:________ [X] Not Applicable
15. Acid Rain Part Application (Hard-copy Required) [ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID:________ [ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID:________ [ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID:________ [ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID:________ [ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) Attached, Document ID:________ [ ] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) Attached, Document ID:________ [X] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):

Feed Dryer for reverberatory furnace

4. Emissions Unit Identification Number: [X] No ID
ID: [ ] ID Unknown

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C	July 2003	33	[ ]

9. Emissions Unit Comment: (Limit to 500 Characters)
The dryer is vented through its dedicated baghouse and stack. The installation of the dryer may be delayed but is included as one project for PSD purposes.

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

A five (5) module shaker-type baghouse with Gore Technology or equivalent bags. Baghouse controlling emissions from Reverberatory Furnace Charging and Tapping

The airflow from the dryer baghouse will be 25,000

204 bags/module (2,805 sq. ft./module); total of 14,025 sq. ft

Gross air/cloth ratio with all modules on line: 1.78:1
Net air/cloth ratio with one module off line: 2.23:1

OR

A four (4) module shaker-type baghouse with Gore Technology or equivalent bags. Baghouse controlling emissions from Reverberatory Furnace Charging and Tapping

288 bags/module (3,960 sq. ft./module); total of 15,840 sq. ft.

Gross air/cloth ratio with all modules on line: 1.58:1
Net air/cloth ratio with one module off line: 2.10:1

2. Control Device or Method Code(s): 018

Emissions Unit Details

1. Package Unit:
   Manufacturer: Gulf Coast Recycling, Inc Model Number: N/A
2. Generator Nameplate Rating: N/A MW
3. Incinerator Information:
   Dwell Temperature: °F
   Dwell Time: seconds
   Incinerator Afterburner Temperature: °F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:				mmBtu/hr
2. Maximum Incineration Rate:		lb/hr		tons/day
3. Maximum Process or Throughput Rate: N/A See 001				
4. Maximum Production Rate: N/A				
5. Requested Maximum Operating Schedule:				
	24	hours/day	7	days/week
	50	weeks/year	8,400	hours/year
6. Operating Capacity/Schedule Comment (limit to 200 characters): Process and Production rates based on 24-hour average				

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

40 CFR 63 Subpart A & X	
62-204.800 F.A.C.	
62-296.700 F.A.C.	
62-296.800 F.A.C.	
62-296.603 F.A.C.	
62-212.300 F.A.C.	
40 CFR 60.122(a)	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? Dryer Stack	6. Emission Point Type Code: 1

3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point):

Exhaust stack from baghouse controlling emissions from the feed dryer.

4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:
None

5. Discharge Type Code: V	6. Stack Height: 60.5	7. Exit Diameter: 2.96 feet
8. Exit Temperature: 150 °F	9. Actual Volumetric Flow Rate: 25,000 acfm	10. Water Vapor: 3.00 % (estimated)

11. Maximum Dry Standard Flow Rate: 20,990 dscfm	12. Nonstack Emission Point Height: feet

13. Emission Point UTM Coordinates:

Zone: 17 East (km): 364.047 North (km): 3093.511

14. Emission Point Comment (limit to 200 characters):

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type) (limit to 500 characters): Natural Gas fired burner		
2. Source Classification Code (SCC):	3. SCC Units: Million Cubic Feet	
4. Maximum Hourly Rate: 0.0080	5. Maximum Annual Rate: 67.2	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	11. Million Btu per SCC Unit: 1000
10. Segment Comment (limit to 200 characters):		

Segment Description and Rate: Segment ____ of ____

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	018	000	EL
Lead	018	000	EL
NO_x	000	000	EL
CO	000	000	EL
VOC	000	000	EL
SO_2	000	000	EL

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: PM	2. Total Percent Efficiency of Control: +99%
3. Potential Emissions: 1.08 lb/hour 4.53 tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: 0.006 gr/dscf Reference:	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): 0.006 gr/dscf x 20,990 dscfm x 60 min/hr ÷ 7000 gr/lb = 1.08 lb/hr 1.08 lb/hr x 8,400 hr/yr ÷ 2,000 lb/ton = 4.53 ton/yr	
13. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Emissions not captured by dryer hooding will be captured and vented to the furnace building ventilation cartridge collector.	

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 1.08 lb/hr	4. Equivalent Allowable Emissions: 1.08 lb/hour 4.53 tons/year
5. Method of Compliance (limit to 60 characters): Compliance will be demonstrated as outlined in the Baghouse Standard Operating Procedures Manual Annual Source Testing using Method 5.	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): Rule 62-212.300	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: Lead	2. Total Percent Efficiency of Control: +99%
3. Potential Emissions: 0.072 lb/hour 0.30 tons/year	4. Synthetically Limited? [X]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: 0.0004 gr/dscf Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters): 0.0004 gr/dscfm x 20,990 dscfm x 60 min/hr ÷ 7000 gr/lb = 0.072 lb/hr 0.072 lb/hr x 8,400 hr/yr ÷ 2,000 lb/ton = 0.30 ton/yr	
12. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): Emissions not captured by dryer baghouse hooding will be captured and vented to the furnace building ventilation cartridge collector.	

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: 40CFR63, Subpart X	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 0.0004 gr/dscf	4. Equivalent Allowable Emissions: 0.0004 gr/dscf 0.30 tons/year
5. Method of Compliance (limit to 60 characters): Annual source testing using EPA Method 12	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters): 62-212.300	

EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: SO_2	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour 0.020 tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: Reference: 0.6 lb/MM CF, AP-42 Table 1.4-1	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): 0.6 lb/MM CF x 67.2 MM CF/yr ÷ 2,000 lb/ton = 0.020 ton/yr	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 0.020 ton/yr	4. Equivalent Allowable Emissions: lb/hour 0.020 tons/year
5. Method of Compliance (limit to 60 characters): Natural Gas Consumption Records.	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: CO	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour 2.82 tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: 84 lb/MM CF Reference: AP-42 table 1.4-2	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): 84 lb/MM CF x 67.2 MM CF/yr ÷ 2,000 lb/ton = 2.82 ton/yr	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: F.A.C. 62-212-300	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 2.82 ton/yr	4. Equivalent Allowable Emissions: 2.82 ton/year
5. Method of Compliance (limit to 60 characters): Natural Gas Consumption records	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units - Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: VOC (as THC)	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour 0.185 tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: : 5.5 lb/MMCF Reference: AP-42 table 1.4-1	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): 5.5 lb/MM CF x 67.2 MM CF/yr ÷ 2,000 lb/ton = 0.185 ton/yr	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 0.185 ton/yr	4. Equivalent Allowable Emissions: lb/hour 0.185 tons/year
5. Method of Compliance (limit to 60 characters): Natural Gas Consumption records	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

Potential/Fugitive Emissions

1. Pollutant Emitted: NO_x	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour 3.36 tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: Reference: 100 lb/MM CF , AP-42 Table 1.4-2	7. Emissions Method Code: 0
8. Calculation of Emissions (limit to 600 characters): 100 lb/MM CF x 67.2 MM CF/yr ÷ 2,000 lb/ton = 3.36 ton/yr	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions ______ of ______

1. Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units: 3.36 ton.yr	4. Equivalent Allowable Emissions: lb/hour 3.36 tons/year
5. Method of Compliance (limit to 60 characters): Natural Gas Consumption Records.	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: VE03 VE06	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: VE03 Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: Annual VE readings using EPA Method 9	
5. Visible Emissions Comment (limit to 200 characters): VE03 – At the exit of the Main Stack	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor _____ of _____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram [X] Attached, Document ID: C [ ] Not Applicable [ ] Waiver Requested	
2. Fuel Analysis or Specification [ ] Attached, Document ID:________ [X] Not Applicable [ ] Waiver Requested	
3. Detailed Description of Control Equipment [ ] Attached, Document ID:________ [ ] Not Applicable [X] Waiver Requested	
4. Description of Stack Sampling Facilities [ ] Attached, Document ID:________ [X] Not Applicable [ ] Waiver Requested	
5. Compliance Test Report [ ] Attached, Document ID:________ [ ] Previously submitted, Date:______________ [X] Not Applicable	
6. Procedures for Startup and Shutdown [ ] Attached, Document ID: * [ ] Not Applicable [ ] Waiver Requested	
7. Operation and Maintenance Plan [ ] Attached, Document ID: * [ ] Not Applicable [ ] Waiver Requested	
8. Supplemental Information for Construction Permit Application [ ] Attached, Document ID:________ [X] Not Applicable	
9. Other Information Required by Rule or Statute [ ] Attached, Document ID:________ [X] Not Applicable	
10. Supplemental Requirements Comment: * These plans are being updated and will be submitted for approval prior to modification start-up.	

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation
    [ ] Attached, Document ID:________ [X] Not Applicable

12. Alternative Modes of Operation (Emissions Trading)
    [ ] Attached, Document ID:________ [X] Not Applicable

13. Identification of Additional Applicable Requirements
    [ ] Attached, Document ID:________ [X] Not Applicable

14. Compliance Assurance Monitoring Plan
    [ ] Attached, Document ID:________ [X] Not Applicable

15. Acid Rain Part Application (Hard-copy Required)

    [ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
    Attached, Document ID:________

    [ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
    Attached, Document ID:________

    [ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
    Attached, Document ID:________

    [ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
    Attached, Document ID:________

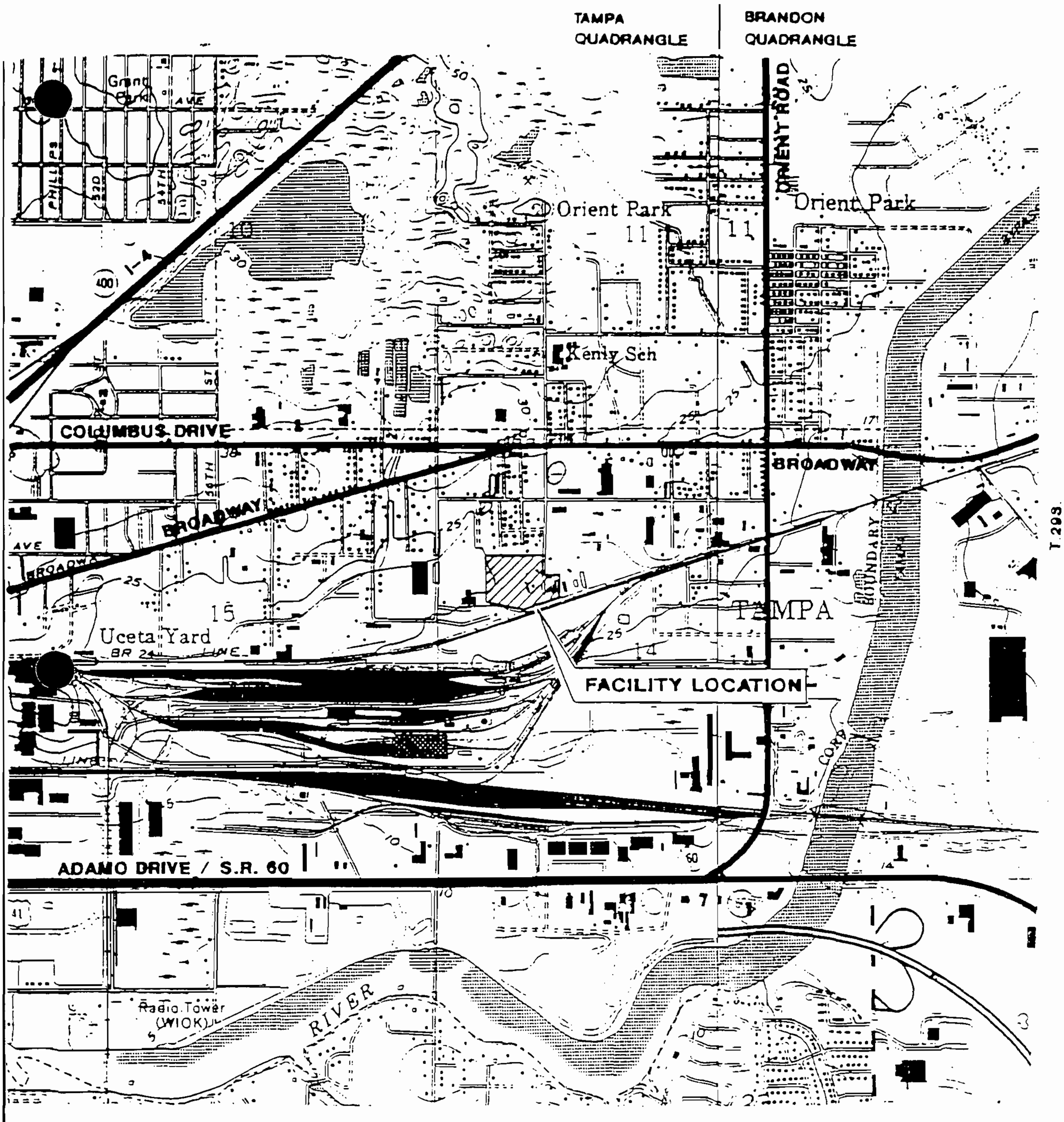
    [ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
    Attached, Document ID:________

    [ ] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
    Attached, Document ID:________

    [X] Not Applicable

ATTACHMENT A

Area Map



SOURCE: USGS 7.5 MINUTE QUADRANGLES
TAMPA 1981
BRANDON 1987

R.19E.

CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

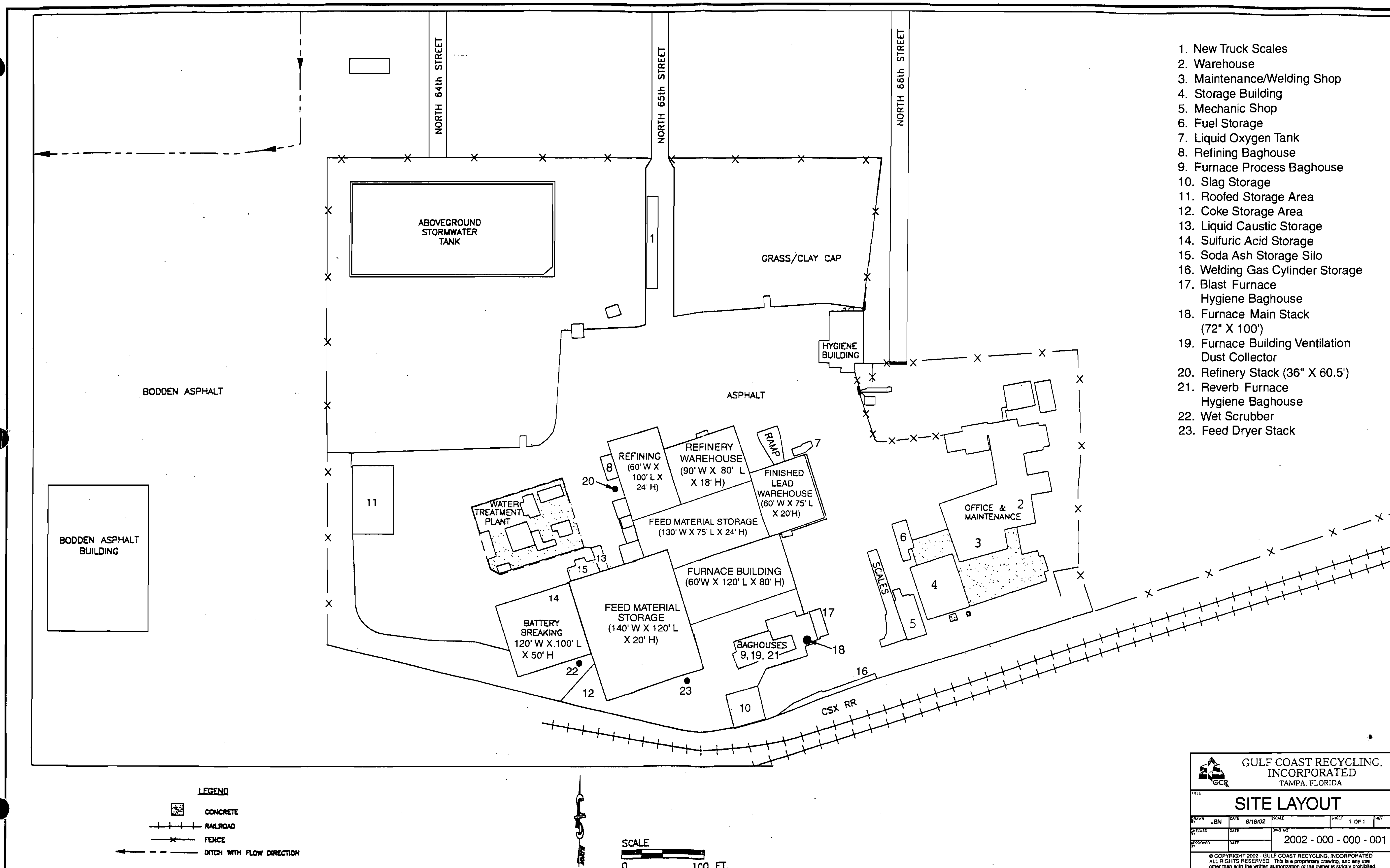
N

GULF COAST RECYCLING, INC.

Facility Location

ATTACHMENT B

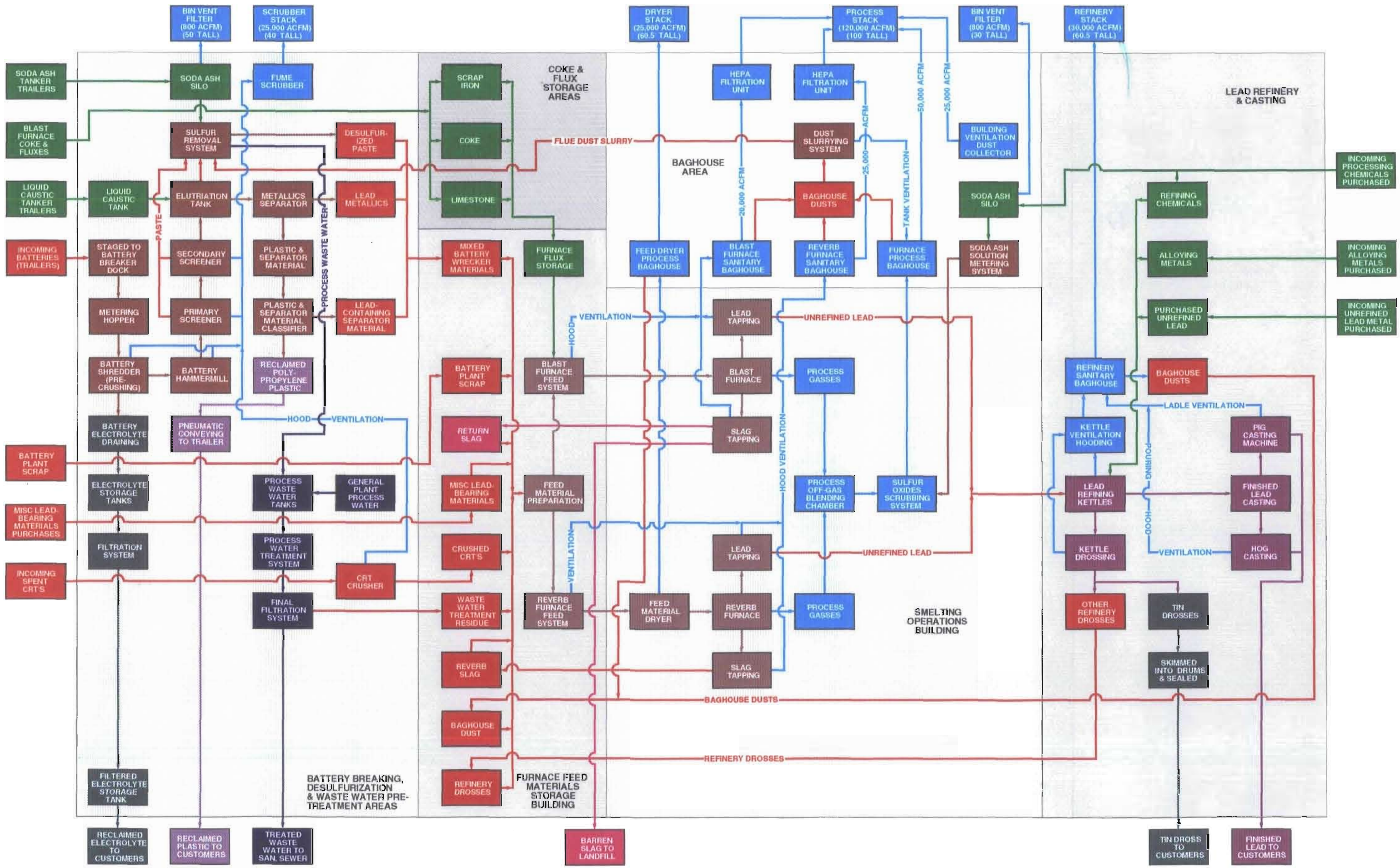
Facility Plot Plan


NORTH 64th STREET
NORTH 65th STREET
NORTH 66th STREET
ABOVEGROUND STORMWATER TANK
GRASS/CLAY CAP
HYGIENE BUILDING
BODDEN ASPHALT
ASPHALT
BODDEN ASPHALT BUILDING
REFINING (60' W X 100' L X 24' H)
REFINERY WAREHOUSE (90' W X 80' L X 18' H)
RAMP
FINISHED LEAD WAREHOUSE (60' W X 75' L X 20'H)
WATER TREATMENT PLANT
FEED MATERIAL STORAGE (130' W X 75' L X 24' H)
FURNACE BUILDING (60'W X 120' L X 80' H)
FEED MATERIAL STORAGE (140' W X 120' L X 20' H)
BATTERY BREAKING 120' W X 100' L X 50' H
BAGHOUSES 9, 19, 21
OFFICE & MAINTENANCE
SCALES
CSX RR
1. New Truck Scales
2. Warehouse
3. Maintenance/Welding Shop
4. Storage Building
5. Mechanic Shop
6. Fuel Storage
7. Liquid Oxygen Tank
8. Refining Baghouse
9. Furnace Process Baghouse
10. Slag Storage
11. Roofed Storage Area
12. Coke Storage Area
13. Liquid Caustic Storage
14. Sulfuric Acid Storage
15. Soda Ash Storage Silo
16. Welding Gas Cylinder Storage
17. Blast Furnace Hygiene Baghouse
18. Furnace Main Stack (72" X 100')
19. Furnace Building Ventilation Dust Collector
20. Refinery Stack (36" X 60.5')
21. Reverb Furnace Hygiene Baghouse
22. Wet Scrubber
23. Feed Dryer Stack
LEGEND
CONCRETE
RAILROAD
FENCE
DITCH WITH FLOW DIRECTION
SCALE
0 100 FT.
GULF COAST RECYCLING, INCORPORATED
TAMPA, FLORIDA
TITLE
SITE LAYOUT
DRAWN BY JBN
DATE 8/18/02
SCALE
SHEET 1 OF 1
REV
CHECKED BY
DATE
APPROVED BY
DATE
DWG NO 2002 - 000 - 000 - 001
© COPYRIGHT 2002 - GULF COAST RECYCLING, INCORPORATED ALL RIGHTS RESERVED. This is a proprietary drawing, and any use other than with the written authorization of the owner is strictly prohibited.

ATTACHMENT C

Process Flow Diagram

GULF COAST RECYCLING, INC.
PROPOSED PROCESS FLOWCHART



Appendix F
Dispersion Modeling Analysis

F. AIR QUALITY IMPACT ASSESSMENT

F.1 Background

Gulf Coast Recycling, Inc. (GCR) submitted a PSD permit application for a proposed facility expansion to the Florida Department of Environmental Protection (FDEP) in January 2002. In a review of this application, dated February 22, 2002, FDEP expressed serious concerns about the predicted maximum ambient lead concentration values when compared to measured ambient values.

The purposes of this air quality modeling assessment are to answer FDEP concerns by demonstrating a reasonable validation of the modeling outputs with monitored concentrations and to demonstrate anticipated compliance with ambient standards after implementation of the proposed facility modifications.

F.2 Facility Description

GCR is located on Florida's central Gulf Coast region. The facility address is 1901 North 66th Street, Tampa, Florida (Hillsborough County). Figure F.1 displays the facility location relative to USGS topographical mapping data.

The facility site is approximately 11 acres. Figure F.2 displays the general layout of facility buildings and operations.

F.3 Facility Emission Inventory

Lead (Pb) emissions were estimated based upon stack testing data performed upon the facility and emission factors from EPA's AP-42 document and MACT development documents. These emission estimates are documented in detail in Section 3 of this report. Tables F.1 and F.2 summarize the emissions used in modeling. The following subsections describe the individual sources.

F.3.1 Existing Conditions

Three process stacks were identified as emitting lead particulate emissions. Each of these stacks discharges vertically without any raincap or other impediment. Natural gas combustion in 4 Kettle Furnaces potentially generate very small amounts of lead emissions. Each Kettle Furnace discharges its combustion products through a separate vertical stack. Each of these stacks is covered by a raincap. These stacks are grouped with 2 in an easterly location. For modeling purposes, a composite stack was modeled. Additionally, a roof annulus hole through which the Blast Furnace exhaust duct is routed to the Blast Furnace Process Baghouse was identified as a potential source of lead emissions and was modeled as a point source. Therefore, a total of 5 point sources was included for the modeling of the existing conditions.

Fugitive process emissions potentially escape through large openings in building walls. These openings are in place around the 3 walls of the Battery Breaking Building; the west, north and east (partially) walls of the Refining Buildings, and the east and south walls of the Blast Furnace Building. The fugitive emissions in the Blast Furnace building which do not escape through the roof annulus are considered to be emitted through the building's wall openings. These wall sources were modeled as volume sources.

Figure F.3 displays the layout of the existing emission sources. Tables F.3, F.4, and F.5 provide site source parameters used in modeling existing conditions.

F.3.2 Future Conditions

It is proposed that a new Reverberatory Furnace be added to the facility. The new Reverberatory Furnace and the existing Blast Furnace will be housed in a expanded Furnace Building. The location of the New Furnace Building is shown in Figure F.4. In the proposed upgraded and expanded facility, the existing Blast Furnace Process Baghouse Stack (S001) will be replaced by a New Main Stack (S010) located in the same place. In addition to the existing Blast Furnace Process Baghouse, the New Main Stack will exhaust an a new Reverb Hygiene Baghouse, upgraded hygiene baghouse and a furnace building Cartridge Collector for the furnace Building. In the furnace Building, the annulus opening around the Blast Furnace duct (S004) will be eliminated. All existing wall openings in the furnace area will be eliminated in the New Furnace Building. The existing Blast Furnace Hygiene Baghouse will be discharged through the New Main Stack, thus eliminating another existing stack (S002).

A new Feed Dryer will be installed and vented through a new dedicated baghouse. The baghouse exhausts will be discharged through a new Feed Dryer Baghouse Stack (S011).

A new wet scrubber will be installed to control emissions from battery breaking operations. The scrubber will discharge through a new stack (S012). The wall openings on the south and west walls of the Battery Breaking Building will be eliminated.

The existing Refining Kettle Furnaces will be retained and will continue to exhaust combustion gases through the dedicated flues. Two additional Refining Kettle Furnaces will be added. Each will have the same capacity and exhaust parameters as the existing units. These 2 new stacks will be located on the west side of the Refining Building. For modeling purposes, combined stacks have been used for the west and east flue groupings (S005 and S006). Process emissions from the Kettle Furnaces will continue to be vented to the Refining Baghouse and exhausted through a dedicated stack (S003). In the refining area buildings, wall openings on the west and east walls will be eliminated.

Existing onsite roadways will be adequate to handle the expanded facility loads. Road cleaning measures will be implemented to control and reduce the associated fugitive particulate emissions.

Figure F.4 displays the layout of the future emission sources. Tables F.6, F.7, and F.8 provide site source parameters used in modeling future conditions.

5.4 Modeling Considerations

F.4.1 Model Selection

Modeling was performed using EPA's ISCLT3 air dispersion model (version 96113). Building downwash parameters were calculated using EPA's BPIP program (version 95086).

Stack emissions were modeled as point sources, process fugitives escaping through wall openings in manufacturing buildings as volume sources, and road particulate emissions as area sources.

F.4.2 Information on Urban/Rural Characteristics

Land use within 3 km of the site is predominantly non-urban. Urban land use types are defined according to USEPA modeling guidelines as "heavy or medium industrial, commercial or multi-family residential." All modeling was performed using the "Rural" option.

F.4.3 Surrounding Terrain

The facility in located in a flat coastal plain area. The FLAT terrain option was used in all modeling.

F.4.4 Good Engineering Practice Stack Heights and Building Downwash

GEP stack height is the minimum stack height needed to prevent the stack exhaust plume from being entrained in the wake of nearby obstructions. If a stack's height is less than the GEP height, then plume entrainment must be considered in the modeling. If a stack height is greater than 65 meters (213.5 feet), the stack will be considered GEP; however, modeling guidelines require that stack height for evaluation purposes be limited to 65 meters (that is, credit for dispersion be limited to a modeled stack height of 65 meters).

GEP stack height has been calculated according to the following formula:

$$Hgep = H + 1.5\ L$$

Where

Hgep	=	GEP stack height;
H	=	height above stack base of adjacent or nearby structure;
L	=	lesser dimension (height or projected width of nearby structures).

The existing facility has 2 principal building complexes and several outlying buildings and other structures. Within each complex are several buildings and varying roof heights. For analysis purposes, the complexes have been subdivided into adjacent buildings. Figure F.5 presents the layout of these buildings and structures.

In the proposed future scenario, the Furnace Building is rebuilt as shown in Figure F.4.

Table F.9 summarizes the dimensions of these buildings and structures. Table F.10 identifies the stacks which may be affected by downwash from each onsite building/structure (*i.e.*, those stacks within 5*L distance of a building or structure).

GEP analysis shows that in general each of the proposed stacks is less than its GEP stack height. Therefore, plume entrainment and building downwash was incorporated into the modeling. USEPA's BPIP was used to develop building height and width parameters used in the ISCST3 model. The BPIP setup and result files are included on the enclosed CD.

F.4.5 Meteorological Data

Meteorological data for the years 1987 through 1991 from the Tampa Airport Weather Station No. 12842 were used for surface and upper air parameters. An anemometer height of 10 m (33 feet) was used. The meteorological data files used in the modeling are included on the enclosed CD.

F.4.6 Existing Ambient Air Quality and Background Concentrations

During the period 1998 through 2nd Quarter of 2002, FDEP operated 4 ambient monitors for Pb concentrations near the GCR facility: No. 12-057-1066, No. 12-057-1073, No. 12-57-1074, and No. 146. Station Nos. 1066 and 146 had the highest Pb concentrations and are the closest to the GCR facility. No. 1066 is immediately south of the facility and No. 146 is immediately north of it. Station no. 1073 is approximately 400 m north, northeast of the facility and Station No. 1074 is approximately 1,000 m north of the facility. These more distant stations showed little potential impact from the GCR emissions. Figure F.6 shows the approximate locations of the monitoring stations. Table F.11 lists the monitoring data and Figure F.7 graphically summarizes monitored concentrations.

An estimated average background concentration of 0.02 $\mu g/m^3$ and maximum background concentration of 0.05 $\mu g/m^3$ were derived from ambient monitoring data. FDEP Station 139C, which is co-located with Monitoring Station 1066, is automatically activated to collect samples only at times when the wind is blow from the GCR facility toward the station. Monitoring Station 1074 is located upwind of the GCR facility at such times. Monitoring data from Station 1074 was evaluated for only those days on which Station 139C was activated. These data were averaged for each quarter during the period 1998 through 2001. The average and maximum quarterly averages for the period were determined. These data are listed in Table F.12.

F.4.7 External Sources of Lead Emissions

Off site sources of Pb emissions as identified by modeling performed previously for the January 2002 submitted PSD permit application were included in this modeling assessment. Sources were included from baghouses at Gulf Coast Metals (GCM), Johnson Controls (JC), Hillsborough County Resource Recovery Facility (HC), and City of Tampa Resource Recovery Facility (TPA). Each of these sources was modeled as a point source. Downwash parameters were included for the GCM sources, which are the closest sources to the GCR facility. The stack parameters and emissions rates used for these sources are summarized in Table F.13.

F.4.8 Model Receptor Grids

For modeling the impacts of existing emission sources for purpose of comparison to the measured concentrations at ambient monitoring stations, receptors were input at the location of each of the 4 monitoring stations. Flagpole heights were input for these receptors equal to the height of the monitor intake.

For modeling the proposed future scenario, receptors were established along the fenceline at intervals not to exceed 15 m. Offsite receptors were input as orthogonal grids, with receptors spacing varying from very fine (every 20 m) to coarse (500 m). If maximum predicted impacts were to occur in the course receptor area, a fine grid (100 m or less) would be established around the maximum point. Figures F.8, F.9, and F.10 display the layouts of these receptor grids.

F.5 Results from Modeling Existing Conditions

Quarterly average impact concentrations from the model were added to the background concentration and compared with the data from the monitoring stations. Stackpole heights were used in the model to accommodate the monitor intake heights. Because the actual split in discharge of fugitive emissions from the Blast Furnace operations between the roof annulus (S004) and the wall openings (BLAST) is not known, a range of splits was modeled. The proportion emitted through the annulus (S004) was modeled at 75%, 50%, and 25% of total.

Table F.14 summarizes the modeling outcomes. Table F.15 summarizes the numerical agreement between the modeled and monitored concentrations for the period average and period maximum. Figures F.11 and F.12 show the comparison between the predicted and measured concentrations at the two closest monitors, 1066 and 146.

On an average basis the modeling predictions were slightly lower than monitored for Stations 1066 and 1073 and slightly higher for Stations 146 and 1074. . It should be remembered that different meteorological periods were used in the modeling from the monitoring data. Therefore, exact agreement is not expected. It is concluded that the model yields reasonable estimates of the impacts resulting from GCR emissions.

Model input and output files for the assessment of existing conditions are included on the enclosed CD.

F.6 Results from Modeling Future Conditions

The results of the predicted maximum future impacts are summarized in Table F.16. Maximum impact concentrations are predicted to occur at or very near the facility fenceline in the regions of receptor spacing of 15 or 20 m. The maximum 5-year modeling impact is 0.98 $\mu g/m^3$. Adding the maximum background level of 0.05 $\mu g/m^3$ yields the maximum predicted ambient concentration at 1.0 $\mu g/m^3$. The NAAQS standard is 1.5 $\mu g/m^3$.

It is concluded that the proposed facility upgrade and expansion can reasonably be expected to comply with NAAQS standards for lead.

Model input and output files for the assessment of future conditions are included on the enclosed CD.

List of Figures

Table F.1 Summary of Existing Lead Emission Rates

Type	Source Description	Model ID#	Lead Emission Rate (g/s) **	Number Sources
Point	Blast Baghouse	S001	0.00210	1
Point	Hygiene Baghouse	S002	0.00639	1
Point	Refining Baghouse	S003	0.000619	1
Point	Furnace Bldg Roof Vent	S004	5.49E-03	1
Point	Kettle flue stack East *	S006	1.04E-07	1
Volume	North Wall Refining Bldg 1	REF1_Nx	2.39E-06	8
Volume	East Wall Refining Bldg 1	REF1_Ex	2.39E-06	4
Volume	West Wall Refining Bldg 1	REF1_Wx	2.39E-06	17
Volume	North Wall Refining Bldg 2	REF2_Nx	2.22E-05	4
Volume	East Wall Refining Bldg 2	REF2_Ex	2.22E-05	3
Volume	North Wall Battery Break Bldg	BAT_Nx	9.47E-05	6
Volume	South Wall Battery Break Bldg	BAT_Sx	9.47E-05	6
Volume	West Wall Battery Break Bldg	BAT_Wx	9.47E-05	5
Volume	SE Walls Furnace Bldg ***	BLASTx	1.10E-03	5
Area	West Onsite Roadway	ROAD_W	5.88E-06	1
Area	Central Onsite Roadway 1	ROAD_C1	3.31E-06	1
Area	Central Onsite Roadway 2	ROAD_C2	3.31E-06	1
Area	East Onsite Roadway 1	ROAD_E1	5.19E-06	1
Area	East Onsite Roadway 2	ROAD_E2	5.19E-06	1

Notes:

* There are 4 gas-fired Kettle Furnaces, each discharging through a separate stack located on the east side of Refining Bldg 1. Each furnace is the same capacity and each stack has the same parameters. For modeling purposes, a combination stack has been used.

** For area sources, emission rates are $g/s/m^2$.

*** S004 and BLASTx emission rates based upon 50/50 split of furnace bldg fugitives.

Table F.2 Summary of Future Lead Emission Rates

Type	Source Description	Model ID#	Lead Emission Rate (g/s) **	Number Sources
Point	Refining Baghouse	S003	0.00580	1
Point	Kettle flue stack West *	S005	5.30E-07	1
Point	Kettle flue stack East *	S006	1.06E-06	1
Point	New Main **	S010	0.0283	1
Point	New Feed Dryer	S011	0.00870	1
Point	New Battery Breaking Scrubber	S012	0.000508	1
Volume	North Wall Refining Bldg 1	REF1_Nx	3.84E-06	8
Volume	East Wall Refining Bldg 1	REF1_Ex	3.84E-06	4
Volume	North Wall Refining Bldg 2	REF2_Nx	3.56E-05	4
Volume	North Wall Battery Break Bldg	BAT_Nx	2.17E-05	6
Area	West Onsite Roadway	ROAD_W	1.55E-06	1
Area	Central Onsite Roadway 1	ROAD_C1	1.46E-06	1
Area	Central Onsite Roadway 2	ROAD_C2	1.46E-06	1
Area	East Onsite Roadway 1	ROAD_E1	7.21E-07	1
Area	East Onsite Roadway 2	ROAD_E2	7.21E-07	1

Notes:

* There are 6 gas-fired Kettle Furnaces, each discharging through a separate stack. Two are located on the west side of Refining Bldg 1 and 4 on the east side. Each furnace is the same capacity and each stack has the same parameters. For modeling purposes, combination stacks have been used for the west and east stack groupings.

** For area sources, emission rates are $g/s/m^2$.

Table F.3 Summary of Existing On-Site Stack Source Parameters

Stack Description	Model ID#	Center Location			Height (m)	Tip Inside Diameter (m)	Raincap or Non-Vertical Discharge? (yes/no)	Model Discharge Vertical Speed (m/s)	Discharge Temperature (K)
		UTM Easting (m)	UTM North (m)	Plant Elevation (m)					
Blast Baghouse	S001	364,086.4	3,093,524.3	0	45.72	0.914	no	35.93	366.0
Hygiene Baghouse	S002	364,095.0	3,093,529.2	0	18.44	0.762	no	20.70	321.0
Refining Baghouse	S003	364,018.7	3,093,574.8	0	18.44	0.914	no	21.56	310.4
Furnace Bldg Roof Vent	S004	364,070.0	3,093,545.0	0	15.24	1.220	no	1.52	321.0
Kettle flue stack East *	S006	364,032.3	3,093,599.4	0	9.14	0.406	yes	0.01	533.2

* There are 4 gas-fired Kettle Furnaces, each discharging through a separate stack located on the east side of Refining Bldg 1. Each furnace is the same capacity and each stack has the same parameters. For modeling purposes, a combination stack has been used.

Table F.4 Summary of Existing On-Site Volume Source Parameters

Volume Source Description	Model ID#	Center Location		Initial Latteral Dim. (m)	Initial Vertical Dim. (m)	Height of Opening (m)	Bottom Height of Opening (m)	Adjacent Building Height (m)	Source Center Separation (m)	Release Height (m)
		UTM Easting (m)	UTM North (m)							
West Wall Refining Bldg 1	REF1_W1	364024.1	3093561.2	0.930	3.402	1.0	1.0	7.31	2.0	1.5
West Wall Refining Bldg 1	REF1_W2	364023.4	3093563.0	0.930	3.402	1.0	1.0	7.31	2.0	1.5
West Wall Refining Bldg 1	REF1_W3	364022.8	3093564.9	0.930	3.402	1.0	1.0	7.31	2.0	1.5
West Wall Refining Bldg 1	REF1_W4	364022.1	3093566.8	0.930	3.402	1.0	1.0	7.31	2.0	1.5
West Wall Refining Bldg 1	REF1_W5	364021.5	3093568.7	0.930	3.402	1.0	1.0	7.31	2.0	1.5
West Wall Refining Bldg 1	REF1_W6	364020.8	3093570.6	0.930	3.402	1.0	1.0	7.31	2.0	1.5
West Wall Refining Bldg 1	REF1_W7	364020.2	3093572.5	0.930	3.402	1.0	1.0	7.31	2.0	1.5
West Wall Refining Bldg 1	REF1_W8	364019.5	3093574.4	0.930	3.402	1.0	1.0	7.31	2.0	1.5
West Wall Refining Bldg 1	REF1_W9	364018.9	3093576.3	0.930	3.402	1.0	1.0	7.31	2.0	1.5
West Wall Refining Bldg 1	REF1_W10	364018.2	3093578.2	0.930	3.402	1.0	1.0	7.31	2.0	1.5
West Wall Refining Bldg 1	REF1_W11	364017.6	3093580.1	0.930	3.402	1.0	1.0	7.31	2.0	1.5
West Wall Refining Bldg 1	REF1_W12	364016.9	3093582.0	0.930	3.402	1.0	1.0	7.31	2.0	1.5
West Wall Refining Bldg 1	REF1_W13	364016.3	3093583.8	0.930	3.402	1.0	1.0	7.31	2.0	1.5
West Wall Refining Bldg 1	REF1_W14	364015.6	3093585.7	0.930	3.402	1.0	1.0	7.31	2.0	1.5
West Wall Refining Bldg 1	REF1_W15	364015.0	3093587.6	0.930	3.402	1.0	1.0	7.31	2.0	1.5
West Wall Refining Bldg 1	REF1_W16	364014.3	3093589.5	0.930	3.402	1.0	1.0	7.31	2.0	1.5
West Wall Refining Bldg 1	REF1_W17	364013.7	3093591.4	0.930	3.402	1.0	1.0	7.31	2.0	1.5
North Wall Refining Bldg 1	REF1_N1	364013.4	3093593.6	0.930	3.402	1.0	1.0	7.31	2.0	1.5
North Wall Refining Bldg 1	REF1_N2	364015.3	3093594.3	0.930	3.402	1.0	1.0	7.31	2.0	1.5
North Wall Refining Bldg 1	REF1_N3	364017.2	3093594.9	0.930	3.402	1.0	1.0	7.31	2.0	1.5
North Wall Refining Bldg 1	REF1_N4	364019.1	3093595.6	0.930	3.402	1.0	1.0	7.31	2.0	1.5
North Wall Refining Bldg 1	REF1_N5	364021.0	3093596.2	0.930	3.402	1.0	1.0	7.31	2.0	1.5
North Wall Refining Bldg 1	REF1_N6	364022.9	3093596.9	0.930	3.402	1.0	1.0	7.31	2.0	1.5
North Wall Refining Bldg 1	REF1_N7	364024.8	3093597.5	0.930	3.402	1.0	1.0	7.31	2.0	1.5
North Wall Refining Bldg 1	REF1_N8	364026.7	3093598.2	0.930	3.402	1.0	1.0	7.31	2.0	1.5
East Wall Refining Bldg 1	REF1_E1	364030.4	3093598.9	0.930	3.402	1.0	1.0	7.31	2.0	1.5
East Wall Refining Bldg 1	REF1_E2	364031.1	3093597.0	0.930	3.402	1.0	1.0	7.31	2.0	1.5
East Wall Refining Bldg 1	REF1_E3	364031.7	3093595.2	0.930	3.402	1.0	1.0	7.31	2.0	1.5
East Wall Refining Bldg 1	REF1_E4	364032.4	3093593.3	0.930	3.402	1.0	1.0	7.31	2.0	1.5

Table F.4 Summary of Existing On-Site Volume Source Parameters (continued)

Volume Source Description	Model ID#	Center Location		Initial Latteral Dim. (m)	Initial Vertical Dim. (m)	Height of Opening (m)	Bottom Height of Opening (m)	Adjacent Building Height (m)	Source Center Separation (m)	Release Height (m)
		UTM Easting (m)	UTM North (m)							
North Wall Refining Bldg 2	REF2_N1	364037.2	3093593.4	2.835	2.552	3.0	0.0	5.49	6.1	1.52
North Wall Refining Bldg 2	REF2_N2	364042.9	3093595.4	2.835	2.552	3.0	0.0	5.49	6.1	1.52
North Wall Refining Bldg 2	REF2_N3	364048.7	3093597.4	2.835	2.552	3.0	0.0	5.49	6.1	1.52
North Wall Refining Bldg 2	REF2_N4	364054.5	3093599.4	2.835	2.552	3.0	0.0	5.49	6.1	1.52
East Wall Refining Bldg 2	REF2_E1	364060.7	3093594.9	2.835	2.552	3.0	0.0	5.49	6.1	1.52
East Wall Refining Bldg 2	REF2_E2	364062.7	3093589.1	2.835	2.552	3.0	0.0	5.49	6.1	1.52
East Wall Refining Bldg 2	REF2_E3	364064.7	3093583.3	2.835	2.552	3.0	0.0	5.49	6.1	1.52
South Wall Battery Break	BAT_S1	364003.3	3093522.4	2.835	7.088	3.0	0.0	15.24	6.1	1.52
South Wall Battery Break	BAT_S2	363997.5	3093520.4	2.835	7.088	3.0	0.0	15.24	6.1	1.52
South Wall Battery Break	BAT_S3	363991.7	3093518.4	2.835	7.088	3.0	0.0	15.24	6.1	1.52
South Wall Battery Break	BAT_S4	363986.0	3093516.5	2.835	7.088	3.0	0.0	15.24	6.1	1.52
South Wall Battery Break	BAT_S5	363980.2	3093514.5	2.835	7.088	3.0	0.0	15.24	6.1	1.52
South Wall Battery Break	BAT_S6	363974.4	3093512.5	2.835	7.088	3.0	0.0	15.24	6.1	1.52
West Wall Battery Break Bldg	BAT_W1	363971.5	3093516.3	2.835	7.088	3.0	0.0	15.24	6.1	1.52
West Wall Battery Break Bldg	BAT_W2	363969.5	3093522.1	2.835	7.088	3.0	0.0	15.24	6.1	1.52
West Wall Battery Break Bldg	BAT_W3	363967.5	3093527.8	2.835	7.088	3.0	0.0	15.24	6.1	1.52
West Wall Battery Break Bldg	BAT_W4	363965.6	3093533.6	2.835	7.088	3.0	0.0	15.24	6.1	1.52
West Wall Battery Break Bldg	BAT_W5	363963.6	3093539.4	2.835	7.088	3.0	0.0	15.24	6.1	1.52
North Wall Battery Break	BAT_N1	363967.4	3093542.3	2.835	7.088	3.0	0.0	15.24	6.1	1.52
North Wall Battery Break	BAT_N2	363973.2	3093544.3	2.835	7.088	3.0	0.0	15.24	6.1	1.52
North Wall Battery Break	BAT_N3	363978.9	3093546.3	2.835	7.088	3.0	0.0	15.24	6.1	1.52
North Wall Battery Break	BAT_N4	363984.7	3093548.3	2.835	7.088	3.0	0.0	15.24	6.1	1.52
North Wall Battery Break	BAT_N5	363990.5	3093550.2	2.835	7.088	3.0	0.0	15.24	6.1	1.52
North Wall Battery Break	BAT_N6	363996.2	3093552.2	2.835	7.088	3.0	0.0	15.24	6.1	1.52
SE Walls Blast Furnace Bldg	BLAST_1	364073.1	3093554.5	3.969	1.985	4.3	0.0	15.24	8.5	2.13
SE Walls Blast Furnace Bldg	BLAST_2	364075.9	3093546.5	3.969	1.985	4.3	0.0	15.24	8.5	2.13
SE Walls Blast Furnace Bldg	BLAST_3	364072.7	3093542.6	3.969	1.985	4.3	0.0	15.24	8.5	2.13
SE Walls Blast Furnace Bldg	BLAST_4	364067.8	3093537.2	3.969	1.985	4.3	0.0	15.24	8.5	2.13
SE Walls Blast Furnace Bldg	BLAST_5	364060.3	3093531.8	3.969	1.985	4.3	0.0	15.24	8.5	2.13

Table F.5 Summary of Existing On-Site Area Source Parameters

Area Source Description	Model ID#	Corner Location		Release Height (m)	Length E-W (m)	Width N-S (m)	Angle (deg)
		UTM Easting (m)	UTM North (m)				
West Onsite Roadway	ROAD_W	364012.0	3093554.0	1.0	7.0	45.0	-19.0
Central Onsite Roadway 1	ROAD_C1	363994.0	3093602.0	1.0	66.0	8.0	0.0
Central Onsite Roadway 2	ROAD_C2	364060.0	3093602.0	1.0	62.0	8.0	0.0
East Onsite Roadway 1	ROAD_E1	364099.0	3093518.0	1.0	7.0	42.0	0.0
East Onsite Roadway 2	ROAD_E2	364099.0	3093560.0	1.0	7.0	40.0	0.0

Table F.6 Summary of Future On-Site Stack Source Parameters

Stack Description	Model ID#	Location: UTM Easting (m)	Location: UTM North (m)	Location: Plant Elevation (m)	Height (m)	Tip Inside Diameter (m)	Raincap or Non-Vertical Discharge? (yes/no)	Model Discharge Vertical Speed (m/s)	Discharge Temperature (K)
Refining Baghouse	S003	364,018.7	3,093,574.8	0	18.44	0.914	no	21.37	310.4
Kettle flue stack West *	S005	364,148.1	3,093,600.7	0	9.14	0.406	yes	0.01	533.2
Kettle flue stack East *	S006	364,149.5	3,093,592.1	0	9.14	0.406	yes	0.01	533.2
New Main **	S010	364,086.4	3,093,524.3	0	30.48	1.816	no	21.86	333.2
New Feed Dryer	S011	364,046.6	3,093,510.9	0	18.44	0.902	no	18.48	338.8
New Battery Breaking Scrubber	S012	364,005.4	3,093,520.9	0	12.19	0.902	no	18.48	311.0

* There are 6 gas-fired Kettle Furnaces, each discharging through a separate stack. Two are located on the west side of Refining Bldg 1 and 4 on the east side. Each furnace is the same capacity and each stack has the same parameters. For modeling purposes, combination stacks have been used for the west and east stack groupings.

** New Main Stack will replace existing Blast Furnace Baghouse Stack

Table F.7 **Summary of Future On-Site Volume Source Parameters**

Volume Source Description	Model ID#	Center Location		Initial Latteral Dim. (m)	Initial Vertical Dim. (m)	Height of Opening (m)	Bottom Height of Opening (m)	Adjacent Building Height (m)	Source Center Separation (m)	Release Height (m)
		UTM Easting (m)	UTM North (m)							
North Wall Refining Bldg 1	REF1_N1	364013.4	3093593.6	0.930	3.402	1.0	1.0	7.31	2.0	1.5
North Wall Refining Bldg 1	REF1_N2	364015.3	3093594.3	0.930	3.402	1.0	1.0	7.31	2.0	1.5
North Wall Refining Bldg 1	REF1_N3	364017.2	3093594.9	0.930	3.402	1.0	1.0	7.31	2.0	1.5
North Wall Refining Bldg 1	REF1_N4	364019.1	3093595.6	0.930	3.402	1.0	1.0	7.31	2.0	1.5
North Wall Refining Bldg 1	REF1_N5	364021.0	3093596.2	0.930	3.402	1.0	1.0	7.31	2.0	1.5
North Wall Refining Bldg 1	REF1_N6	364022.9	3093596.9	0.930	3.402	1.0	1.0	7.31	2.0	1.5
North Wall Refining Bldg 1	REF1_N7	364024.8	3093597.5	0.930	3.402	1.0	1.0	7.31	2.0	1.5
North Wall Refining Bldg 1	REF1_N8	364026.7	3093598.2	0.930	3.402	1.0	1.0	7.31	2.0	1.5
East Wall Refining Bldg 1	REF1_E1	364030.4	3093598.9	0.930	3.402	1.0	1.0	7.31	2.0	1.5
East Wall Refining Bldg 1	REF1_E2	364031.1	3093597.0	0.930	3.402	1.0	1.0	7.31	2.0	1.5
East Wall Refining Bldg 1	REF1_E3	364031.7	3093595.2	0.930	3.402	1.0	1.0	7.31	2.0	1.5
East Wall Refining Bldg 1	REF1_E4	364032.4	3093593.3	0.930	3.402	1.0	1.0	7.31	2.0	1.5
North Wall Refining Bldg 2	REF2_N1	364037.2	3093593.4	2.835	2.552	3.0	0.0	5.49	6.1	1.52
North Wall Refining Bldg 2	REF2_N2	364042.9	3093595.4	2.835	2.552	3.0	0.0	5.49	6.1	1.52
North Wall Refining Bldg 2	REF2_N3	364048.7	3093597.4	2.835	2.552	3.0	0.0	5.49	6.1	1.52
North Wall Refining Bldg 2	REF2_N4	364054.5	3093599.4	2.835	2.552	3.0	0.0	5.49	6.1	1.52
North Wall Battery Break Bldg	BAT_N1	363967.4	3093542.3	2.835	7.088	3.0	0.0	15.24	6.1	1.52
North Wall Battery Break Bldg	BAT_N2	363973.2	3093544.3	2.835	7.088	3.0	0.0	15.24	6.1	1.52
North Wall Battery Break Bldg	BAT_N3	363978.9	3093546.3	2.835	7.088	3.0	0.0	15.24	6.1	1.52
North Wall Battery Break Bldg	BAT_N4	363984.7	3093548.3	2.835	7.088	3.0	0.0	15.24	6.1	1.52
North Wall Battery Break Bldg	BAT_N5	363990.5	3093550.2	2.835	7.088	3.0	0.0	15.24	6.1	1.52
North Wall Battery Break Bldg	BAT_N6	363996.2	3093552.2	2.835	7.088	3.0	0.0	15.24	6.1	1.52

Table F.8 Summary of Future On-Site Area Source Parameters

Area Source Description	Model ID#	Corner Location		Release Height (m)	Length E-W (m)	Width N-S (m)	Angle (deg)
		UTM Easting (m)	UTM North (m)				
West Onsite Roadway	ROAD_W	364012.0	3093554.0	1.0	7.0	45.0	-19.0
Central Onsite Roadway 1	ROAD_C1	363994.0	3093602.0	1.0	66.0	8.0	0.0
Central Onsite Roadway 2	ROAD_C2	364060.0	3093602.0	1.0	62.0	8.0	0.0
East Onsite Roadway 1	ROAD_E1	364099.0	3093518.0	1.0	7.0	42.0	0.0
East Onsite Roadway 2	ROAD_E2	364099.0	3093560.0	1.0	7.0	40.0	0.0

Table F.9 On-Site Building/Structure Dimensions

Building/Structure Description	Map ID#	Width (m)	Length (m)	Roof Height (m)	GEP Height (m)	Status
Battery Breaking (BAT)	1	30.5	36.6	15.2	38.1	existing
Refining (REF_1)	2	18.3	43.3	7.3	18.3	existing
Refining (REF_2)	3	25.9	40.8	5.5	13.7	existing
Group Storage	4	43.3	46.0	6.1	15.2	existing
Finish Product Warehouse (Finish WH)	5	20.4	22.9	6.1	15.2	existing
Blast Furnace (Old Furnace)	6	23.8	25.9	15.2	38.1	existing
Blast Furnace Process Baghouse (Furnace	7	7.3	21.9	9.1	22.9	existing
Blast Furnace Hygiene Baghouse (FHBH)	8	4.3	9.8	9.1	22.9	existing
Slag Bin	9	9.2	12.2	6.0	15.0	existing
Metal Building #5	10	7.6	14.9	6.1	15.2	existing
Metal Building #4	11	15.2	19.2	6.1	15.2	existing
Masonry Building #1	12	11.9	13.4	6.1	15.2	existing
Metal Building #7	13	20.7	21.6	6.1	15.2	existing
Masonry Building #2	14	20.0	37.0	6.1	15.2	existing
2-Story Extension #1	15	9.9	10.9	9.1	22.9	existing
2-Story Extension #2	16	7.1	7.4	9.1	22.9	existing
Masonry Building #3	17	9.2	9.9	6.1	15.2	existing
Metal Building #6	18	5.8	11.7	6.1	15.2	existing
Masonry Office	19	9.6	15.1	6.1	15.2	existing
Masonry Building (MB)	20	12.2	20.8	6.1	15.2	existing
Metal Building (CMB)	21	14.4	24.0	6.1	15.2	existing
New Furnace Building	22	18.3	18.3	18.3	45.7	proposed

Table F.10 On-Site Stacks Potentially Affected by Downwash

Building/Structure Description	Map ID#	Stacks Potentially Affected by Downwash								
		S001	S002	S003	S004	S005	S006	S010	S011	S012
Battery Breaking (BAT)	1	yes	yes	yes	yes	yes	yes	yes	yes	yes
Refining (REF_1)	2	yes	yes	yes	yes	yes	yes	yes	yes	yes
Refining (REF_2)	3	yes	yes	yes	yes	yes	yes	yes	yes	yes
Group Storage	4	yes	yes	yes	yes	yes	yes	yes	yes	yes
Finish Product Warehouse (Finish WH)	5	yes	yes	yes	yes	yes	yes	yes	yes	yes
Blast Furnace (Old Furnace)	6	yes	yes	yes	yes		yes			
Blast Furnace Process Baghouse (Furnace BH)	7	yes	yes		yes			yes		
Blast Furnace Hygiene Baghouse (FHBH)	8	yes	yes		yes			yes		
Slag Bin	9								yes	
Metal Building #5	10		yes							
Metal Building #4	11									
Masonry Building #1	12									
Metal Building #7	13									
Masonry Building #2	14									
2-Story Extension #1	15									
2-Story Extension #2	16									
Masonry Building #3	17									
Metal Building #6	18									
Masonry Office	19									
Masonry Building (MB)	20									
Metal Building (CMB)	21									
New Furnace Building	22			yes		yes	yes	yes	yes	yes

Note: Blank cells indicate stack is not affected by building downwash.

Table F.11 Summary of FDEP Ambient Monitoring Data For Lead

Monitoring Site ID	FDEP Monitoring Data per Calendar Quarter (µg/m³)																	
	1Q98	2Q98	3Q98	4Q98	1Q99	2Q99	3Q99	4Q99	1Q00	2Q00	3Q00	4Q00	1Q01	2Q01	3Q01	4Q01	1Q02	2Q02
12-057-1066 (1998-02.5)	0.41	0.51	0.27	0.37	0.42	0.41	0.42	1.02	0.67	0.28	0.41	2.01	1.29	0.33	0.38	0.80	1.00	0.30
12-057-1073 (1998-02.5)	0.13	0.23	0.12	0.08	0.27	0.17	0.13	0.07	0.27	0.39	0.12	0.13	0.47	0.31	0.21	0.10	0.20	0.20
12-057-1074 (1998-01)	0.07	0.08	0.04	0.01	0.03	0.08	0.03	0.01	0.04	0.01	0.02	0.01	0.06	0.03	0.02	0.20	0.00	0.00
MS 146 (1998-02.5)	0.36	0.36	0.20	0.30	0.60	0.40	0.30	0.10	0.20	0.50	0.30	0.40	0.50	0.40	0.50	0.40	0.70	0.30

Table F.12 Summary of Data Used to Estimate Background Lead Concentrations

Calendar Year	Calendar Quarter	Sampling Date	Lead Concentration (µg/m³)		
			Station 139C*	Station 1074 (145)	Quarterly Average
1998	1	16-Feb-98	2.9	0.10	
		12-Mar-98	4.2	0.00	
		18-Mar-98	3.9	0.00	
		24-Mar-98	1.5	0.00	
		30-Mar-98	0.3	0.00	0.02
1998	2	11-Apr-98	3.3	0.00	
		29-May-98	2.3	0.00	
		04-Jun-98	4.2	0.00	
		22-Apr-98	2.3	0.20	
		28-Jun-02	0.5	0.00	0.04
1998	3	10-Jul-98	3.1	0.00	
		28-Jul-98	3.3	0.00	
		15-Aug-98	2.0	0.10	
		14-Sep-98	3.8	0.10	0.05
1998	4	20-Oct-98	0.9	0.00	
		26-Oct-98	2.1	0.00	
		01-Nov-98	1.8	0.00	
		07-Nov-98	3.0	0.00	
		25-Nov-98	1.8	0.00	
		13-Dec-98	4.7	0.00	
		19-Dec-98	5.7	0.00	
		25-Dec-98	1.9	0.00	
		31-Dec-98	4.9	0.10	0.01
1999	1	18-Jan-99	4.5	0.2	0.1
		30-Jan-99	32.0	0.0	0.2
		05-Feb-99	1.5	0.0	0.3
		17-Feb-99	5.9	0.2	0.4
		23-Feb-99	6.3	0.0	1
		07-Mar-99	4.7	0.0	0.4
		13-Mar-99	5.8	0.0	0.2
		25-Mar-99	4.6	0.0	0.05
1999	2	06-Apr-99	5.3	0.0	0.4
		18-Apr-99	5.5	0.0	
		30-Apr-99	3.0	0.0	
		18-May-99	2.0	0.0	
		05-Jun-99	2.3	0.1	
		11-Jun-99	1.4	0.1	0.03
1999	3	07-May-99	1.2	0.0	
		04-Aug-99	2.6	0.0	
		28-Aug-99	2.7	0.0	
		15-Sep-99	4.3	0.0	
		27-Sep-99	5.6	0.0	0.00
1999	4	09-Oct-99	1.0	0.0	
		21-Oct-99	4.8	0.0	3.3
		27-Oct-99	4.0	0.0	3.5
		02-Nov-99	6.7	0.0	0.4
		08-Nov-99	3.7	0.0	1.2
		14-Nov-99	2.9	0.0	
		20-Nov-99	2.7	0.0	
		26-Nov-99	3.1	0.1	
		02-Dec-99	3.8	0.0	
		20-Dec-99	4.6	0.0	0.01
2000	1	13-Jan-00	7.0	0.1	
		19-Jan-00	4.5	0.0	
		25-Jan-00	6.4	0.0	
		31-Jan-00	4.1	0.0	
		06-Feb-00	6.3	0.1	
		18-Feb-00	6.4	0.1	
		07-Mar-00	3.8	0.0	
		25-Mar-00	6.3	0.0	0.04
2000	2	12-Apr-00	10.1	0.0	
		20-Apr-00	6.4	0.0	
		05-Jun-00	2.9	0.0	0.00
		07-May-00	3.7	0.1	
2000	3	29-Jul-00	2.9	0.0	
		28-Aug-00	2.6	0.0	
		27-Sep-00	4.0	0.0	0.03
2000	4	03-Oct-00	9.0	0.0	
		15-Oct-00	8.1	0.0	3.4
		21-Oct-00	1.7	0.0	
		27-Oct-00	5.3	0.0	3.5
		14-Nov-00	5.6	0.1	
		20-Nov-00	1.3	0.0	8.2
		26-Nov-00	4.7	0.0	0.5
		02-Dec-00	5.4	0.0	0.8
		14-Dec-00	4.7	0.0	
		20-Dec-00	7.8	0.0	0.01
2001	1	01-Jan-01	5.9	0.0	2.6
		13-Jan-01	3.9	0.0	1.4
		25-Jan-01	14.4	0.1	5.4
		06-Feb-01	5.6	0.1	
		24-Feb-01	2.8	0.0	
		14-Mar-01	2.9	0.0	0.03
2001	2	01-Apr-01	5.2	0.0	
		19-Apr-01	4.7	0.0	
		01-May-01	1.7	0.0	
		07-May-01	1.4	0.0	
		31-May-01	2.8	0.1	
		30-Jun-01	3.2	0.0	0.02
2001	3	24-Jul-01	2.3	0.1	
		11-Aug-01	2.4	0.0	
		16-Aug-01	2.9	0.0	0.03
2001	4	04-Oct-01	6.4	0.0	
		28-Oct-01	5.6	0.0	
		09-Nov-01	7.0	0.0	
		21-Dec-01	2.9	0.0	0.00
Total Period			Average Qtrly Avg		0.02
Total Period			Maximum Qtrly Avg		0.05

ppb = (µm/g) * (0.0245/207.19) *1000

(µg) = ppb/0.118249

Table F.13 Summary of Off-Site Source Parameters

Stack Description	Model ID#	Center Location			Pb Emission Rate (ug/m3)	Height (m)	Discharge Temperature (K)	Model Discharge Vertical Speed (m/s)	Tip Inside Diameter (m)
		UTM Easting (m)	UTM North (m)	Plant Elevation (m)					
Johnson Controls cast-on-strap (COS) line #1.	JC2	359949	3102591	0	0.0066	10.67	308	9.63	0.914
Johnson Controls central vacuum system #1.	JC5	359949	3102591	0	0.0013	10.67	325	21.22	0.244
Johnson Controls paste line #1.	JC7	359949	3102591	0	0.0069	10.06	308	20.94	0.823
Johnson Controls PbO bulk storage & handling.	JC14	359949	3102591	0	0.0006	10.67	311	2.16	0.253
Johnson Controls ball mill	JC15	359949	3102591	0	0.0008	8.23	311	14.24	0.366
Johnson Controls wet/dry mixer process.	JC17	359949	3102591	0	0.0052	10.97	305	8.86	0.701
Johnson Controls COS line #2.	JC18	359949	3102591	0	0.0072	10.06	305	12.09	1.219
Johnson Controls COS line #3.	JC20	359949	3102591	0	0.0101	9.45	314	13.7	1.219
Johnson Controls grid fasting	JC21	359949	3102591	0	0.0024	10.67	339	17.97	0.701
Johnson Controls paste line #3.	JC22	359949	3102591	0	0.0058	10.67	303	13.4	0.823
Johnson Controls post pouring	JC31	359949	3102591	0	0.002	13.72	305	2.74	0.762
Johnson Controls chemset/plate curing operations.	JC33	359949	3102591	0	0.0019	9.14	366	12.94	0.61
Johnson Controls dry pasting line	JC34	359949	3102591	0	0.0054	15.24	305	12.94	0.762
Johnson Controls strip caster & expander.	JC35	359949	3102591	0	2.50E-04	7.62	311	11.43	0.405
Johnson Controls Mark X COS	JC40	359949	3102591	0	0.0052	15.24	305	12.94	0.762
Johnson Controls trim dry oven.	JC41	359949	3102591	0	6.00E-05	12.19	589	4.85	0.122
Hillsborough County Resource Recovery Facility Unit 1	HC1	368249	3092791	0	0.0462	67.06	522	23.11	1.555
Hillsborough County Resource Recovery Facility Unit 2	HC2	368249	3092791	0	0.0462	67.06	505	20.84	1.555
Hillsborough County Resource Recovery Facility Unit 3	HC3	368249	3092791	0	0.0462	67.06	511	22.34	1.555
Gulf Coast Metals Baghouse #1	BAG1	364749	3093691	0	0.00083	9.14	408	23.93	0.546
Gulf Coast Metals Baghouse #2	BAG2	364742.6	3093692.7	0	0.00083	9.14	408	23.93	0.546
Gulf Coast Metals Baghouse #3	BAG3	364736.2	3093694.4	0	0.00083	9.14	408	23.93	0.546
Gulf Coast Metals Baghouse #4	BAG4	364729.8	3093696.1	0	0.00083	9.14	408	23.93	0.546
City of Tampa Resource Recovery Facility Units 1, 2, 3 and 4.	TPA1234	360049	3091991	0	0.388	48.77	505	12.71	1.737

Table F.15 Summary of Existing Model Validation

Roof Annulus Scenario	Monitoring Station #	Model 20-Qtr Average (µg/m³)	Background Pb (µg/m³)	Predicted Ambient Pb (µg/m³)	Monitoring 18-Qtr * (1998-02.5) Average (µg/m³)	Model 20-Qtr Maximum Impact (µg/m³)	Background Pb (µg/m³)	Predicted 20-Qtr Maximum Pb Conc. (µg/m³)	Monitoring 18-Qtr * (1998-02.5) Maximum (µg/m³)
S004 = 75%	1066	0.38	0.02	0.40	0.63	1.01	0.05	1.06	2.01
S004 = 75%	1073	0.08	0.02	0.10	0.20	0.13	0.05	0.18	0.47
S004 = 75%	1074	0.03	0.02	0.05	0.05	0.07	0.05	0.12	0.20
S004 = 75%	146	0.42	0.02	0.44	0.38	0.87	0.05	0.92	0.70
S004 = 50%	1066	0.41	0.02	0.43	0.63	1.11	0.05	1.16	2.01
S004 = 50%	1073	0.09	0.02	0.11	0.20	0.14	0.05	0.19	0.47
S004 = 50%	1074	0.04	0.02	0.06	0.05	0.07	0.05	0.12	0.20
S004 = 50%	146	0.43	0.02	0.45	0.38	0.91	0.05	0.96	0.70
S004 = 25%	1066	0.45	0.02	0.47	0.63	1.21	0.05	1.26	2.01
S004 = 25%	1073	0.09	0.02	0.11	0.20	0.15	0.05	0.20	0.47
S004 = 25%	1074	0.04	0.02	0.06	0.05	0.08	0.05	0.13	0.20
S004 = 25%	146	0.45	0.02	0.47	0.38	0.95	0.05	1.00	0.70
Validation Excluding 2 Anomalous Monitoring Data **									
S004 = 75%	1066	0.38	0.02	0.40	0.50	1.01	0.05	1.06	1.02
S004 = 75%	1073	0.08	0.02	0.10	0.20	0.13	0.05	0.18	0.47
S004 = 75%	1074	0.03	0.02	0.05	0.05	0.07	0.05	0.12	0.20
S004 = 75%	146	0.42	0.02	0.44	0.38	0.87	0.05	0.92	0.70
S004 = 50%	1066	0.41	0.02	0.43	0.50	1.11	0.05	1.16	1.02
S004 = 50%	1073	0.09	0.02	0.11	0.20	0.14	0.05	0.19	0.47
S004 = 50%	1074	0.04	0.02	0.06	0.05	0.07	0.05	0.12	0.20
S004 = 50%	146	0.43	0.02	0.45	0.38	0.91	0.05	0.96	0.70
S004 = 25%	1066	0.45	0.02	0.47	0.50	1.21	0.05	1.26	1.02
S004 = 25%	1073	0.09	0.02	0.11	0.20	0.15	0.05	0.20	0.47
S004 = 25%	1074	0.04	0.02	0.06	0.05	0.08	0.05	0.13	0.20
S004 = 25%	146	0.45	0.02	0.47	0.38	0.95	0.05	1.00	0.70

Notes:

* For Monitoring Station 1074, no data available for 1st and 2nd Qtr, 2002

** For Monitoring Station 1066, data for 4th Qtr, 2000 and 1st Qtr, 2001 have been excluded as being anomalous

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Table F.14 Summary of Model Results for Existing Conditions

		Monitoring Station ID#				Monitoring Station ID#				Monitoring Station ID#			
		1066	1073	1074	146	1066	1073	1074	146	1066	1073	1074	146
Year	Qtr	S004 = 75%				S004 = 50%				S004 = 25%			
1987	1	0.28	0.11	0.04	0.34	0.31	0.12	0.04	0.36	0.34	0.12	0.04	0.37
1987	2	0.17	0.09	0.02	0.29	0.18	0.09	0.02	0.30	0.19	0.10	0.02	0.32
1987	3	0.19	0.10	0.03	0.45	0.21	0.10	0.03	0.47	0.22	0.10	0.03	0.49
1987	4	0.38	0.05	0.02	0.16	0.42	0.05	0.02	0.16	0.46	0.05	0.02	0.17
1988	1	0.35	0.06	0.02	0.27	0.38	0.07	0.02	0.28	0.41	0.07	0.03	0.29
1988	2	0.34	0.12	0.03	0.29	0.37	0.13	0.03	0.30	0.40	0.13	0.04	0.31
1988	3	0.28	0.06	0.05	0.87	0.31	0.07	0.05	0.91	0.33	0.07	0.06	0.95
1988	4	0.90	0.05	0.02	0.37	0.99	0.05	0.02	0.39	1.08	0.05	0.02	0.40
1989	1	0.66	0.13	0.07	0.69	0.73	0.14	0.07	0.72	0.79	0.15	0.08	0.76
1989	2	0.50	0.11	0.06	0.66	0.54	0.12	0.06	0.69	0.59	0.12	0.07	0.72
1989	3	0.55	0.10	0.04	0.69	0.60	0.10	0.05	0.72	0.65	0.11	0.05	0.75
1989	4	1.01	0.06	0.04	0.42	1.11	0.06	0.04	0.43	1.21	0.06	0.05	0.45
1990	1	0.29	0.07	0.06	0.69	0.31	0.07	0.06	0.62	0.34	0.08	0.06	0.65
1990	2	0.17	0.08	0.03	0.29	0.19	0.08	0.03	0.31	0.20	0.08	0.03	0.32
1990	3	0.17	0.06	0.02	0.36	0.18	0.06	0.02	0.38	0.19	0.06	0.03	0.40
1990	4	0.41	0.07	0.02	0.18	0.46	0.07	0.02	0.19	0.49	0.07	0.02	0.20
1991	1	0.23	0.09	0.04	0.32	0.25	0.10	0.04	0.34	0.27	0.10	0.04	0.35
1991	2	0.13	0.10	0.02	0.40	0.14	0.10	0.02	0.42	0.15	0.10	0.02	0.44
1991	3	0.14	0.12	0.02	0.40	0.15	0.13	0.02	0.41	0.16	0.13	0.03	0.43
1991	4	0.41	0.05	0.02	0.19	0.45	0.05	0.02	0.20	0.49	0.06	0.02	0.20
20-Qtr Average		0.38	0.08	0.03	0.42	0.41	0.09	0.04	0.43	0.45	0.09	0.04	0.45

Table F.16 Summary of Model Results for Future Conditions

Quarter	Predicted Maximum Quarterly Lead Impact ($\mu g/m^3$) Meteorological Data Year 1987	1988	1989	1990	1991
1	0.741	0.459	0.976	0.793	0.669
2	0.678	0.834	0.963	0.673	0.737
3	0.719	0.830	0.847	0.706	0.811
4	0.529	0.745	0.762	0.700	0.632
20-Qtr Period				Maximum Quarterly Impact =	0.98
				Background Concentration =	0.05
	Predicted Maximum Quaterly Ambient Concentration =				1.03