



**Felman
Production, LLC**

Philip Gardner
Plant Manager



Mail To: 4442 Graham Station Road, Letart, WV 25253 • Phone (304) 882 -1432 • Fax (304) 882-3853
Ship To: US Route 62 North, New Haven, WV 25265

Carrie McCumbers
Title V Program Manager
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston WV 25304

Dear Ms. McCumbers;

Re: Title V Permit Renewal Application

Enclosed you will find 3 copies of Felman Production's Title V Permit Application Renewal.

Should you have any questions, please contact our Environmental and Safety Consultant Wayne Appleton at wappleton@fpiwv.com or by phone at (304) 561-4198.

Sincerely yours,

Phil Gardner
Plant Manager

9. Governmental Code:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Privately owned and operated; 0 | <input type="checkbox"/> County government owned and operated; 3 |
| <input type="checkbox"/> Federally owned and operated; 1 | <input type="checkbox"/> Municipality government owned and operated; 4 |
| <input type="checkbox"/> State government owned and operated; 2 | <input type="checkbox"/> District government owned and operated; 5 |

10. Business Confidentiality Claims

Does this application include confidential information (per 45CSR31)? Yes No

If yes, identify each segment of information on each page that is submitted as confidential, and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's "PRECAUTIONARY NOTICE-CLAIMS OF CONFIDENTIALITY" guidance.

11. Mailing Address

Street or P.O. Box: 4442 Graham Station Rd.

City: Letart

State: WV

Zip: 25253-8701

Telephone Number: (304) 882-1181

Fax Number: (304) 882-3853

12. Facility Location

Street: US Route 62 North

City: New Haven

County: Mason

UTM Easting: 419.73 km

UTM Northing: 4312.468 km

Zone: 17 or 18

Directions: Approximately 4 miles east of New Haven adjacent to US Route 33.

Portable Source? Yes No

Is facility located within a nonattainment area? Yes No

If yes, for what air pollutants?

Is facility located within 50 miles of another state? Yes No

If yes, name the affected state(s).
Ohio

Is facility located within 100 km of a Class I Area¹? Yes No

If yes, name the area(s).

If no, do emissions impact a Class I Area¹? Yes No

¹ Class I areas include Dolly Sods and Otter Creek Wilderness Areas in West Virginia, and Shenandoah National Park and James River Face Wilderness Area in Virginia.

13. Contact Information			
Responsible Official: Phil Gardner		Title: Plant Manager	
Street or P.O. Box: 4442 Graham Station Rd.			
City: Letart	State: WV	Zip: 25253-8701	
Telephone Number: (304) 882-1181	Fax Number: (304) 882-3853		
E-mail address: pgardner@fpiwv.com			
Environmental Contact: Wayne Appleton		Title: Sr. EHS Specialist	
Street or P.O. Box: 4442 Graham Station Rd.			
City: Letart	State: WV	Zip: 25253-8701	
Telephone Number: (304) 882-1181	Fax Number: (304) 882-3853		
E-mail address: wappleton@fpiwv.com			
Application Preparer: Wayne Appleton		Title: Sr. EHS Specialist	
Company: O'Brien's Safety Services, L.L.C.			
Street or P.O. Box: 106 Mission Drive			
City: Marietta	State: OH	Zip: 45750	
Telephone Number: (740) 336-8407	Fax Number: n/a		
E-mail address: wayne@obrienssafetyservices.com			

14. Facility Description			
List all processes, products, NAICS and SIC codes for normal operation, in order of priority. Also list any process, products, NAICS and SIC codes associated with any alternative operating scenarios if different from those listed for normal operation.			
Process	Products	NAICS	SIC
Electrometallurgical Ferroalloy Product Manufacturing	Silicomanganese	331112	3313
Secondary Smelting, Refining	Silicomanganese	331492	3341

Provide a general description of operations.

Felman Production, L.L.C. manufactures manganese and silicomanganese/ferrosilicon. The facility consists of 3 electric submerged arc furnaces, associated sizing equipment and environmental controls.

15. Provide an **Area Map** showing plant location as **ATTACHMENT A**.

16. Provide a **Plot Plan(s)**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is located as **ATTACHMENT B**. For instructions, refer to "Plot Plan - Guidelines."

17. Provide a detailed **Process Flow Diagram(s)** showing each process or emissions unit as **ATTACHMENT C**. Process Flow Diagrams should show all emission units, control equipment, emission points, and their relationships.

Section 2: Applicable Requirements

18. Applicable Requirements Summary

Instructions: Mark all applicable requirements.

<input checked="" type="checkbox"/> SIP	<input type="checkbox"/> FIP
<input checked="" type="checkbox"/> Minor source NSR (45CSR13)	<input type="checkbox"/> PSD (45CSR14)
<input checked="" type="checkbox"/> NESHAP (45CSR34)	<input checked="" type="checkbox"/> Nonattainment NSR (45CSR19)
<input checked="" type="checkbox"/> Section 111 NSPS	<input checked="" type="checkbox"/> Section 112(d) MACT standards
<input type="checkbox"/> Section 112(g) Case-by-case MACT	<input type="checkbox"/> 112(r) RMP
<input type="checkbox"/> Section 112(i) Early reduction of HAP	<input type="checkbox"/> Consumer/commercial prod. reqts., section 183(e)
<input type="checkbox"/> Section 129 Standards/Reqts.	<input type="checkbox"/> Stratospheric ozone (Title VI)
<input type="checkbox"/> Tank vessel reqt., section 183(f)	<input checked="" type="checkbox"/> Emissions cap 45CSR§30-2.6.1
<input type="checkbox"/> NAAQS, increments or visibility (temp. sources)	<input type="checkbox"/> 45CSR27 State enforceable only rule
<input checked="" type="checkbox"/> 45CSR4 State enforceable only rule	<input type="checkbox"/> Acid Rain (Title IV, 45CSR33)
<input type="checkbox"/> Emissions Trading and Banking (45CSR28)	<input checked="" type="checkbox"/> Compliance Assurance Monitoring (40CFR64)
<input type="checkbox"/> CAIR NO _x Annual Trading Program (45CSR39)	<input type="checkbox"/> CAIR NO _x Ozone Season Trading Program (45CSR40)
<input type="checkbox"/> CAIR SO ₂ Trading Program (45CSR41)	

19. Non Applicability Determinations

List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.

40 CFR Part 60, subpart K, Ka, and Kb - The facility has three above ground storage tanks with capacities less than 19,813 gallons.

40 CFR Part 60, Subpart Z- Electric Arc Furnaces No. 2 and No. 5, were installed in 1966, and in January, 1974, respectively. Electric Arc Furnace No. 7 commenced construction in March 1974 when the owner or operator entered into contractual obligations.

40 CFR 64 - Compliance Assurance Monitoring (CAM). The Electric Arc Furnaces are subject to SO₂ limits in accordance with 45 CSR 10, however there are no control devices used to comply with the limit, thus the Furnaces are not pollutant specific emissions units (PSEUs) for SO₂ in accordance with 40 CFR§64.2(a)(2). The Electric Arc Furnaces, the crushing and screening equipment, and fugitive dust sources are subject to the Ferroalloys Production MACT which regulates PM emissions, therefore these sources are not subject to CAM for PM in accordance with 40 CFR§64.2(b)(1)(i).

Permit Shield

20. Facility-Wide Applicable Requirements

List all facility-wide applicable requirements. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements).

See Attachment (2)

Permit Shield

For all facility-wide applicable requirements listed above, provide monitoring/testing / recordkeeping / reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Attachment (2)

Are you in compliance with all facility-wide applicable requirements? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

21. Active Permits/Consent Orders		
Permit or Consent Order Number	Date of Issuance MM/DD/YYYY	List any Permit Determinations that Affect the Permit (<i>if any</i>)
03-54-05300004	08/07/2007	
R13-2857D (Trackpactor/Water Jig)	11/5/2014	
R13-3217C (No.1 Crusher/Screenner)	4/29/2015	
R13-3244T (Induction Furnace)	6/10/2015	
	/ /	

22. Inactive Permits/Obsolete Permit Conditions		
Permit Number	Date of Issuance	Permit Condition Number
R13-0101	n/a	
45CSR R13-1110	06/09/1989	
R13-2857B, C	12/20/2010	
R13-3073T	10/30/2013	
	/ /	

Section 3: Facility-Wide Emissions

23. Facility-Wide Emissions Summary [Tons per Year]	
Criteria Pollutants	Potential Emissions
Carbon Monoxide (CO)	1146.25
Nitrogen Oxides (NO _x)	16.69
Lead (Pb)	0.0003
Particulate Matter (PM _{2.5}) ¹	265.27
Particulate Matter (PM ₁₀) ¹	265.27
Total Particulate Matter (TSP)	316.31
Sulfur Dioxide (SO ₂)	1203.16
Volatile Organic Compounds (VOC)	878.99
Hazardous Air Pollutants ²	Potential Emissions
Arsenic	0.0017
Cadmium	0.005
Chromium	0.009
Manganese	51.37
Mercury	0.002
Regulated Pollutants other than Criteria and HAP	Potential Emissions

¹PM_{2.5} and PM₁₀ are components of TSP.
²For HAPs that are also considered PM or VOCs, emissions should be included in both the HAPs section and the Criteria Pollutants section.

Section 4: Insignificant Activities

24. Insignificant Activities (Check all that apply)	
<input checked="" type="checkbox"/>	1. Air compressors and pneumatically operated equipment, including hand tools.
<input checked="" type="checkbox"/>	2. Air contaminant detectors or recorders, combustion controllers or shutoffs.
<input checked="" type="checkbox"/>	3. Any consumer product used in the same manner as in normal consumer use, provided the use results in a duration and frequency of exposure which are not greater than those experienced by consumer, and which may include, but not be limited to, personal use items; janitorial cleaning supplies, office supplies and supplies to maintain copying equipment.
<input checked="" type="checkbox"/>	4. Bathroom/toilet vent emissions.
<input checked="" type="checkbox"/>	5. Batteries and battery charging stations, except at battery manufacturing plants.
<input type="checkbox"/>	6. Bench-scale laboratory equipment used for physical or chemical analysis, but not lab fume hoods or vents. Many lab fume hoods or vents might qualify for treatment as insignificant (depending on the applicable SIP) or be grouped together for purposes of description.
<input type="checkbox"/>	7. Blacksmith forges.
<input type="checkbox"/>	8. Boiler water treatment operations, not including cooling towers.
<input checked="" type="checkbox"/>	9. Brazing, soldering or welding equipment used as an auxiliary to the principal equipment at the source.
<input type="checkbox"/>	10. CO ₂ lasers, used only on metals and other materials which do not emit HAP in the process.
<input checked="" type="checkbox"/>	11. Combustion emissions from propulsion of mobile sources, except for vessel emissions from Outer Continental Shelf sources.
<input checked="" type="checkbox"/>	12. Combustion units designed and used exclusively for comfort heating that use liquid petroleum gas or natural gas as fuel.
<input checked="" type="checkbox"/>	13. Comfort air conditioning or ventilation systems not used to remove air contaminants generated by or released from specific units of equipment.
<input type="checkbox"/>	14. Demineralized water tanks and demineralizer vents.
<input type="checkbox"/>	15. Drop hammers or hydraulic presses for forging or metalworking.
<input type="checkbox"/>	16. Electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam.
<input type="checkbox"/>	17. Emergency (backup) electrical generators at residential locations.
<input type="checkbox"/>	18. Emergency road flares.
<input checked="" type="checkbox"/>	<p>19. Emission units which do not have any applicable requirements and which emit criteria pollutants (CO, NO_x, SO₂, VOC and PM) into the atmosphere at a rate of less than 1 pound per hour and less than 10,000 pounds per year aggregate total for each criteria pollutant from all emission units.</p> <p>Please specify all emission units for which this exemption applies along with the quantity of criteria pollutants emitted on an hourly and annual basis:</p> <p><u>Emission units which do not have any applicable requirements and which emit criteria pollutants (CO, NO_x, SO₂, VOC, and PM) into the atmosphere at a rate of less than 1 pound per hour and less than 10,000 pounds per year aggregate total for each criteria pollutant from all emission units. The facility has three aboveground storage tanks for which there are no applicable requirements and whose emissions are below the insignificant level. The tanks have been designed as follows:</u></p> <p><u>006-01 500 gal Gasoline Tank (0.23 ton VOC/yr)</u> <u>006-02 1,000 gal Diesel Tank (6.2E-04 ton VOC/yr)</u> <u>006-03 10,000 gal Diesel Tank (1.24E-03 ton VOC/yr)</u> <u>Emission rates were estimated using the EPA approved program TANKS2.</u> <u>006-01 and -02 are used to supply fuel for vehicles. Emissions were conservatively doubled to account for working losses during vehicle refueling operations in addition to losses from the storage tank itself.</u> <u>006-03 supplies diesel fuel to the Ladle Burners (00C-01) and the six diesel-powered fire pumps.</u></p>

24. Insignificant Activities (Check all that apply)	
<input type="checkbox"/>	20. Emission units which do not have any applicable requirements and which emit hazardous air pollutants into the atmosphere at a rate of less than 0.1 pounds per hour and less than 1,000 pounds per year aggregate total for all HAPs from all emission sources. This limitation cannot be used for any source which emits dioxin/furans nor for toxic air pollutants as per 45CSR27. Please specify all emission units for which this exemption applies along with the quantity of hazardous air pollutants emitted on an hourly and annual basis:
<input type="checkbox"/>	21. Environmental chambers not using hazardous air pollutant (HAP) gases.
<input checked="" type="checkbox"/>	22. Equipment on the premises of industrial and manufacturing operations used solely for the purpose of preparing food for human consumption.
<input type="checkbox"/>	23. Equipment used exclusively to slaughter animals, but not including other equipment at slaughterhouses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.
<input checked="" type="checkbox"/>	24. Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
<input type="checkbox"/>	25. Equipment used for surface coating, painting, dipping or spray operations, except those that will emit VOC or HAP.
<input checked="" type="checkbox"/>	26. Fire suppression systems.
<input checked="" type="checkbox"/>	27. Firefighting equipment and the equipment used to train firefighters.
<input type="checkbox"/>	28. Flares used solely to indicate danger to the public.
<input checked="" type="checkbox"/>	29. Fugitive emission related to movement of passenger vehicle provided the emissions are not counted for applicability purposes and any required fugitive dust control plan or its equivalent is submitted.
<input type="checkbox"/>	30. Hand-held applicator equipment for hot melt adhesives with no VOC in the adhesive formulation.
<input type="checkbox"/>	31. Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning or machining wood, metal or plastic.
<input type="checkbox"/>	32. Humidity chambers.
<input type="checkbox"/>	33. Hydraulic and hydrostatic testing equipment.
<input type="checkbox"/>	34. Indoor or outdoor kerosene heaters.
<input checked="" type="checkbox"/>	35. Internal combustion engines used for landscaping purposes.
<input type="checkbox"/>	36. Laser trimmers using dust collection to prevent fugitive emissions.
<input type="checkbox"/>	37. Laundry activities, except for dry-cleaning and steam boilers.
<input type="checkbox"/>	38. Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.
<input type="checkbox"/>	39. Oxygen scavenging (de-aeration) of water.
<input type="checkbox"/>	40. Ozone generators.
<input checked="" type="checkbox"/>	41. Plant maintenance and upkeep activities (e.g., grounds-keeping, general repairs, cleaning, painting, welding, plumbing, re-tarring roofs, installing insulation, and paving parking lots) provided these activities are not conducted as part of a manufacturing process, are not related to the source's primary business activity, and not otherwise triggering a permit modification. (Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must still get a permit if otherwise requested.)
<input type="checkbox"/>	42. Portable electrical generators that can be moved by hand from one location to another. "Moved by Hand" means that it can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device.

24. Insignificant Activities (Check all that apply)	
<input checked="" type="checkbox"/>	43. Process water filtration systems and demineralizers.
<input checked="" type="checkbox"/>	44. Repair or maintenance shop activities not related to the source's primary business activity, not including emissions from surface coating or de-greasing (solvent metal cleaning) activities, and not otherwise triggering a permit modification.
<input checked="" type="checkbox"/>	45. Repairs or maintenance where no structural repairs are made and where no new air pollutant emitting facilities are installed or modified.
<input type="checkbox"/>	46. Routing calibration and maintenance of laboratory equipment or other analytical instruments.
<input type="checkbox"/>	47. Salt baths using nonvolatile salts that do not result in emissions of any regulated air pollutants. Shock chambers.
<input type="checkbox"/>	48. Shock chambers.
<input type="checkbox"/>	49. Solar simulators.
<input type="checkbox"/>	50. Space heaters operating by direct heat transfer.
<input type="checkbox"/>	51. Steam cleaning operations.
<input type="checkbox"/>	52. Steam leaks.
<input type="checkbox"/>	53. Steam sterilizers.
<input type="checkbox"/>	54. Steam vents and safety relief valves.
<input type="checkbox"/>	55. Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized.
<input type="checkbox"/>	56. Storage tanks, vessels, and containers holding or storing liquid substances that will not emit any VOC or HAP. Exemptions for storage tanks containing petroleum liquids or other volatile organic liquids should be based on size limits such as storage tank capacity and vapor pressure of liquids stored and are not appropriate for this list.
<input type="checkbox"/>	57. Such other sources or activities as the Director may determine.
<input checked="" type="checkbox"/>	58. Tobacco smoking rooms and areas.
<input type="checkbox"/>	59. Vents from continuous emissions monitors and other analyzers.

Section 5: Emission Units, Control Devices, and Emission Points

25. Equipment Table
Fill out the Title V Equipment Table and provide it as ATTACHMENT D .
26. Emission Units
For each emission unit listed in the Title V Equipment Table , fill out and provide an Emission Unit Form as ATTACHMENT E .
For each emission unit not in compliance with an applicable requirement, fill out a Schedule of Compliance Form as ATTACHMENT F .
27. Control Devices
For each control device listed in the Title V Equipment Table , fill out and provide an Air Pollution Control Device Form as ATTACHMENT G .
For any control device that is required on an emission unit in order to meet a standard or limitation for which the potential pre-control device emissions of an applicable regulated air pollutant is greater than or equal to the Title V Major Source Threshold Level, refer to the Compliance Assurance Monitoring (CAM) Form(s) for CAM applicability. Fill out and provide these forms, if applicable, for each Pollutant Specific Emission Unit (PSEU) as ATTACHMENT H .

Section 6: Certification of Information

28. Certification of Truth, Accuracy and Completeness and Certification of Compliance
<i>Note: This Certification must be signed by a responsible official. The original, signed in blue ink, must be submitted with the application. Applications without an original signed certification will be considered as incomplete.</i>
a. Certification of Truth, Accuracy and Completeness
I certify that I am a responsible official (as defined at 45CSR§30-2.38) and am accordingly authorized to make this submission on behalf of the owners or operators of the source described in this document and its attachments. I certify under penalty of law that I have personally examined and am familiar with the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine and/or imprisonment.

b. Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

Responsible official (type or print)

Name: PHILIP GARDNER	Title: PLANT MANAGER
--------------------------------	--------------------------------

Responsible official's signature:

Signature:  Signature Date: 7/25/17
(Must be signed and dated in blue ink)

Note: Please check all applicable attachments included with this permit application:

<input checked="" type="checkbox"/>	ATTACHMENT A: Area Map
<input checked="" type="checkbox"/>	ATTACHMENT B: Plot Plan(s)
<input checked="" type="checkbox"/>	ATTACHMENT C: Process Flow Diagram(s)
<input checked="" type="checkbox"/>	ATTACHMENT D: Equipment Table
<input checked="" type="checkbox"/>	ATTACHMENT E: Emission Unit Form(s)
<input checked="" type="checkbox"/>	ATTACHMENT F: Schedule of Compliance Form(s)
<input checked="" type="checkbox"/>	ATTACHMENT G: Air Pollution Control Device Form(s)
<input checked="" type="checkbox"/>	ATTACHMENT H: Compliance Assurance Monitoring (CAM) Form(s)

All of the required forms and additional information can be found and downloaded from, the DEP website at www.dep.wv.gov/dag, requested by phone (304) 926-0475, and/or obtained through the mail.

20. Facility-Wide Applicable Requirements

For all facility-wide applicable requirements listed above, provide monitoring/testing / recordkeeping / reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Condition Number of Permit Requirement	Term or Condition that is the Basis for Certification	Method or Means of Determining Compliance Status ¹
3.1.1	Open Burning	No open burning or refuse.
3.1.2	Open burning exemptions.	No open burning or refuse.
3.1.3	Asbestos	Inspection and Notification.
3.1.4	Odor	No odor complaints received.
3.1.5	Stand by plan for reducing emissions.	Submit as required.
3.1.6	Emission Inventory	Submitted.
3.1.7	Ozone-depleting substances	This facility does not perform maintenance, service, repair or disposal of appliances.
3.1.8	Risk Management Plan	Submit as required.
3.1.9	Minimize the emissions of fugitive particulate matter	Minimize fugitive dust from any manufacturing process or storage structure.
3.1.10	Particulate Matter Control	Minimize fugitive dust on plant roads, by paving, application of asphalt, chemical dust suppressants or other suitable dust control measures. Good operating practices shall be applied in relation to stockpiling and general material handling to minimize fugitive dust.
3.1.11	Particulate Suppressant Spray Truck	Operate as often as necessary to minimize fugitive dust.
3.1.12	Implementation of a Preventative Maintenance Program.	<ul style="list-style-type: none"> a) Maintain spare parts inventory tracking system. b) Maintain availability of all components and materials identified. c) Conduct Inspection and Maintenance Program items as required.
3.1.13	General Operating Provision.	Reduce furnace power input levels and stoking of furnaces to abate or minimize emissions as the result of complete failure of the air pollution control equipment.
3.1.14	Achieve compliance with permit by shutdown of source.	Recordkeeping

3.1.15	Operational and work practice standards: Fugitive dust sources.	<ul style="list-style-type: none"> a) Fugitive Dust Control Plan b) submit a copy of the fugitive dust control plan c) use existing manuals that describe the measures in place to control fugitive dust
3.1.16	Maintenance Requirements	<ul style="list-style-type: none"> a) 40CFR §63.6(e) compliance b) 1. Maintenance Plan, 2. SOPs c) preventive maintenance schedule d) monthly inspections & reports
3.1.17	Compliance demonstration with the operational and work practice standards.	Fugitive Dust Control Plan & Reporting.
3.2.1	Emissions from all operating bag houses shall be read once per shift during daylight hours from six (6) minutes.	Monitoring
3.2.2	VE observations shall be conducted by certified VE observer. Records shall be maintained for five years.	Monitoring.
3.2.3,a)1-8	Daily monitoring of pressure drop across each bag house cell, or across the bag house if it is not possible to monitor each cell individually, to ensure pressure drops is within normal operating range.	Monitoring and Recordkeeping.
3.2.3,b)	As part of the maintenance plan required by Section 3.1.16.b. of this permit, the owner or operator must develop and implement corrective action procedures to be followed in the case of the observation of visible emissions from the baghouse, or the indication through the periodic baghouse system inspections that the system is not operating properly. The owner or operator must initiate corrective action as soon as practicable after the occurrence of the observation or event indicating a problem.	Monitoring and Recordkeeping.
3.2.3, c) 1-5	<p>The corrective action plan must include procedures used to determine the cause of a deviation or other indications of problems as well as actions to minimize emissions. These actions may include the following:</p> <ol style="list-style-type: none"> 1. Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in emissions. 2. Sealing off defective bags or filter media. 3. Replacing defective bags or filter media, or otherwise repairing the control device. 4. Sealing off a defective baghouse compartment. 5. Shutting down the process producing the particulate matter emissions. 	Monitoring and Recordkeeping.

3.2.3,d)	Failure to monitor or failure to take corrective action under the requirements of Section 3.2.3. of this permit would be a violation of the general duty to operate in a manner consistent with good air pollution control practices that minimizes emissions per 60 CFR §63.6(e)(1)(i)..	Monitoring and Recordkeeping.
3.3.1	Stack Testing	Recordkeeping.
3.3.2	Performance testing, test methods and compliance demonstrations.	Testing and Recordkeeping.
3.3.3	Test methods	Follow test methods in 40 CFR part 60 appendix A.
3.4.1	Monitoring Information.	Recordkeeping
3.4.2	Retention of records	Recordkeeping
3.4.3	Odors	Recordkeeping. No odor complaints received.
3.4.4	Daily Water Truck Usage	Recordkeeping – The water truck was used but recordkeeping was not consistently maintained. Issue has been corrected.
3.4.5a 3.4.5b	40CFR 63.10 General and Specific recordkeeping Requirements.	Recordkeeping. Startup, Shutdown, and Malfunction Plan. Performance Test Results. Monitoring Devices Accuracy. Fugitive Dust Control Plan. Maintenance Plan.
3.5.1	Responsible Official Certification	Recordkeeping.
3.5.2	Request Confidential Treatment	NA
3.5.3	Submit Reports to WVDEP and US EPA address.	NA
3.5.4	Submit Certified Emission Statement	Report submitted by July 31, 2016.
3.5.5	Submit Annual Compliance Certification.	Compliance Certification was not submitted by March 15 th . Report was submitted March 30 th 2016. Sent to: R3_APD_Permits@epa.gov
3.5.6	Submit Semi-Annual Monitoring Report	Semi-Annual Monitoring Report was submitted by March 30 th 2016 for 7/1-12/31/15.
3.5.7	Emergencies	Refer to section 2.17 of permit. Training & Recordkeeping
3.5.8, a.1-4, b	Deviations.	a) Reporting & Investigation b) Reporting, Investigation, Preventative Measures
3.5.9	New Applicable Requirements	Meet such requirements on a timely basis as promulgated.
3.5.10	VE observations records	Submit to the DAQ on a monthly basis a copy of all visible emissions observations.
3.5.11	Failure of Air Pollution Control Equipment.	Notify the DAQ within twenty-four (24) hours if failure is in excess of two (2) hours. Summarize this information in a written report within fourteen (14) days to the DAQ.

3.5.12	Reports required under provisions of section 3.5.10 shall be provided to the director within (30) days of the end of the month.	Reporting and Recordkeeping.
3.5.13 a & b	40CFR6.9(b) Notifications.	Reporting
3.5.14	Notification of Compliance Status	Reporting
3.5.15, a. 1-3, b. 1-4	40CFR63.10 General and Specific Reporting Requirements	Frequency of Reporting, Performance Test Reporting, SS&M Reporting, Specific Reports
3.6.1	Compliance Plan	None. Fugitive dust control plan was submitted.
3.7 (1 & 2)	Permit Shield	NA
4.1.1	Opacity Limit – Twenty (20) percent opacity from any process source operation, except if less than forty (40) percent opacity for any period or periods aggregating no more than five (5) minutes in a sixty (60) minute period.	Daily Opacity Observations.
4.1.2	Circumvention of 45CSR7	No additional gas may be added to any exhaust or group of exhausts for the purpose of reducing the stack gas concentration.
4.1.3	Type 'b' duplicate source operations whose air pollution control equipment efficiency is a minimum of ninety nine percent (99%) by weight and whose total process weight rate is less than two hundred fifty thousand (250,000) pounds per hour shall be exempted from the requirements of 45CSR§7-4.1 provided that smoke emitted into the open air from any such duplicate source operation is less than twenty percent (20%) opacity. [45CSR§7-4.7.a.]	The Electric Arc Furnaces, Crushing Systems, and Product Casting operations are exempt from the PM weight based limit in 45CSR§7-4.1. in accordance with 45CSR§7-4.7.a.
4.1.4	Stack Design	All stacks shall have flow straitening devices or sufficient length of vertical run to establish flow pattern.
4.1.5	Potential Hazardous Material Emissions	Conduct evaluations as required.
4.1.6	Minimize Fugitive Particulate Matter	Install, maintain and operate as required.
4.1.7	Poling emissions shall not exceed five (5) minutes in duration during any poling operation.	Monitoring.
4.1.8	SO2 Concentration Limit. Shall not exceed 2,000 parts per million by volume from existing source operations.	Testing and Emission Inventory.
4.1.9	40CFR63 Compliance. Within ninety (90) days after startup of any furnace, the company shall be in compliance with all provisions set forth in 40CFR Part 63, Subpart XXX	Monitoring, Recordkeeping, Reporting, and Testing. 27.2 lb/hr when producing silicomanganese in an open furnace operating at a furnace power input of 25 MW or less.
4.2.1	Monitoring Requirements	Conduct visual emission observation in accordance with sections 3.2.1 and 3.2.2 of this permit.

4.2.2	Continue to calibrate, maintain, and operate instrumentation. a. Power input to each furnace. b. Current or power input and winding temperature for each furnace baghouse fan motor. c. Pressure drop across each furnace baghouse fan.	Recordkeeping.
4.2.3 a) 4.2.3 b) 4.2.3 c)	Compliance demonstration with opacity standards.	a) Observation & Recordkeeping. b) Fan amps & damper position recording. c) Continuing compliance with the opacity standards by following monitoring requirements
4.2.4	Shop Opacity	a) Monitoring and Recordkeeping of check and record the control system fan motor amperes and capture system damper positions once per shift.
4.3.1	In accordance with 40 CFR Part 60, Appendix A.	Periodic Testing.
4.3.2	Stack testing within (90) days of any startup.	Protocol must be submitted at least 60 days prior to testing.
4.3.3 a-c	Initial and Annual Performance Testing.	All testing complete.
4.4.1.	Records of the visible emission checks	Recordkeeping
4.4.2	By-pass cap usage	Recordkeeping. By-pass stack not used during this reporting period.
4.4.3	Fan performance curve records	Recordkeeping.
4.4.4	Furnace Tapping Records	Recordkeeping
4.5.1	Operating parameters	Reporting.
5.1.1	Opacity Limit – Twenty (20) percent opacity from any process source operation, except if less than forty (4) percent opacity for any period or periods aggregating no more than five (5) minutes in any sixty (60) minute period.	Daily Opacity Observations
5.1.2	Transfer Points PM Limit	Emission Inventory
5.1.3	Type “b” duplicate source operations.	Monitoring and Recordkeeping
5.1.4	Continuously monitor slag crushing systems water pressures.	Not installed.
5.1.5	The permittee shall not employ Soderberg paste to provide refractory lining for any ladle.	Monitoring.
5.1.6	All ladle to ladle repouring of molten material shall be conducted with a system to minimize fugitive emissions.	Monitoring.
5.1.7	The permittee shall maintain the product crushing and sizing operations in good operating condition.	Recordkeeping and Monitoring.
5.1.8	Crushing and Screening Equipment in excess of 0.03 gr/dscf.	Monitoring.
5.1.9	Gator 33tons/hr.	Monitoring and Recordkeeping. <i>Not in service in 2016</i>

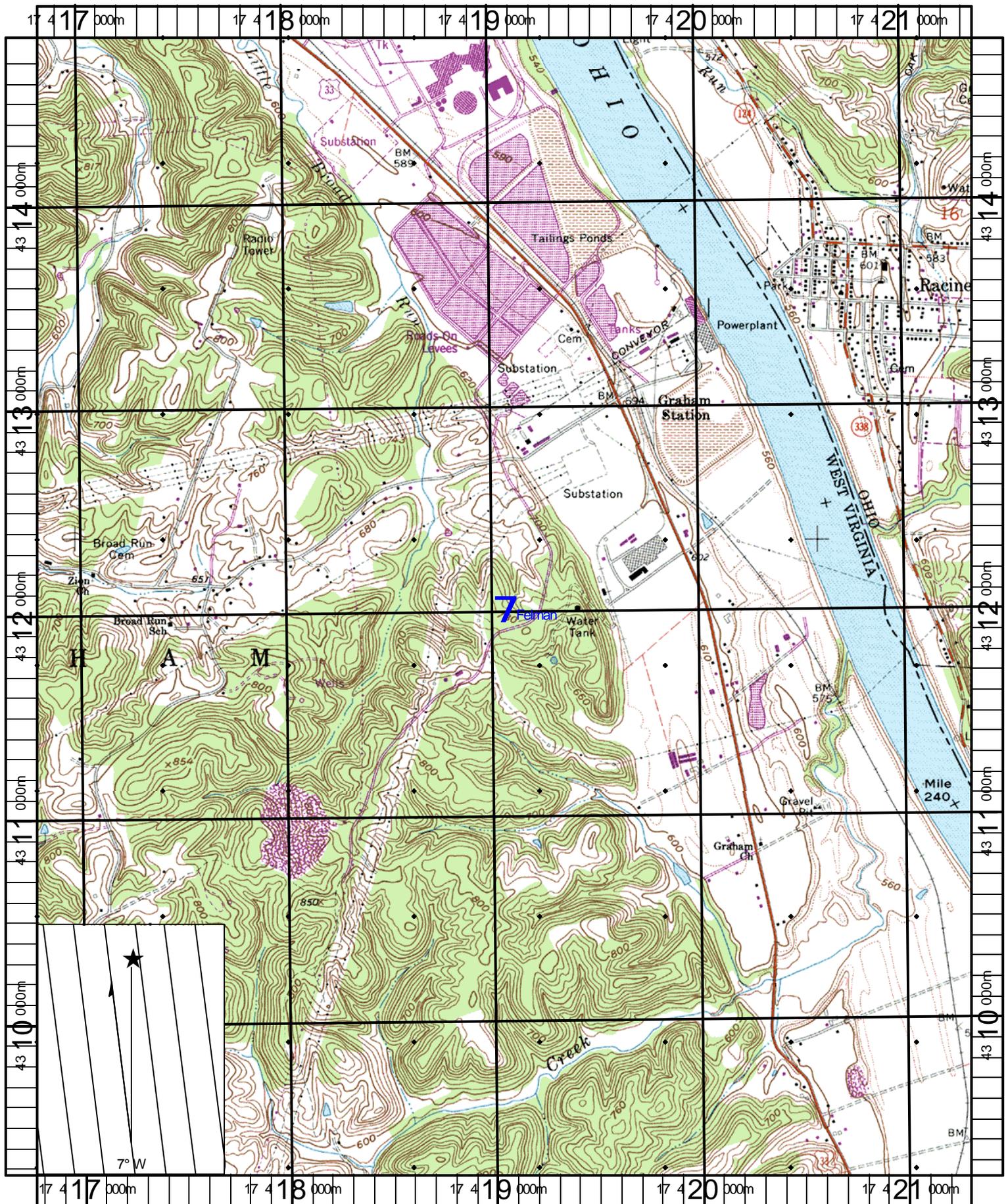
5.2.1	Monitoring Requirements	Conduct visual emission observations in accordance with section 3.2.1 and 3.2.2 of this permit.
5.3.1	Testing Requirements a. Initial performance test b. Annual performance tests	a. All testing complete. b. Testing.
5.4.1	Visible Emission Records	Recordkeeping
5.4.2	Records of daily hours of operation and gallons of water used in operation on the slag crushing plant.	Recordkeeping.
5.4.3	Gator 33tons/hr.	Monitoring and Recordkeeping.
5.5	Reporting Requirements	NA
5.6	Compliance Plan	NA
6.1.1	Crushing PM/Mn 21.8 lb/hr, 2.45 TPY Screening PM/Mn 21.8 lb/hr, 2.45 TPY Pelletizer PM/Mn 0.01 lb/hr, 0.01 TPY Extruder PM/Mn 0.39 lb/hr 0.1 TPY Transfer Points PM/Mn 29.0 lb/hr, 3.32 TPY Stockpiles PM/Mn 3.36 lb/hr, 0.61 TPY Crushing PM10/Mn 10.31 lb/hr, 1.16 TPY Screening PM10/Mn 10.31 lb/hr, 1.16 TPY Pelletizer PM10/Mn 0.01 lb/hr, 0.01 TPY Extruder PM10/Mn 0.18 lb/hr, 0.05 TPY Transfer Points PM10/Mn 13.71 lb/hr, 1.57 TPY Stockpiles PM10/Mn 1.59 lb/hr, 0.29 TPY	Monitoring and Recordkeeping
6.1.2	Crusher shall not exceed 400 tons per hour or 90,000 TIPPY.	Recordkeeping
6.1.2	Screen shall not exceed 400 tons per hour or 90,000 TPY.	Recordkeeping.
6.1.2	Extruder shall not exceed 20 tons per hour or 10,000 TPY.	Recordkeeping.
6.1.2	Pelletizer shall not exceed 6 tons per hour or 10,000 TPY.	Recordkeeping.
6.1.3	Base area of stockpile shall not exceed 5,000 sq. ft.	Recordkeeping.
6.1.4	Emissions from Crusher CR-1C and Screen SC-1C shall be controlled by bag house. Bag house shall be designed, installed, operated, and maintained to achieve minimum efficiency of 89%.	Recordkeeping.
6.1.5	Transfer point shall be controlled by enclosures.	Monitoring and Recordkeeping.
6.1.6	Transfer points T3C and T6C shall be controlled by water sprays.	Monitoring and Recordkeeping.

6.1.7		Transfer points T5C shall be controlled by both water spray and enclosures.	Monitoring and Recordkeeping.
6.1.8		Opacity Limit – Twenty (20) percent opacity from any process source operation, except if less than forty (40) percent opacity for any period or periods aggregating no more than five (5) minutes in any sixty (60) minute period.	Monitoring and Recordkeeping.
6.1.9		When processing limestone - Comply with applicable standards of 40 CFR 60 subpart OOO (a)crusher CR-1C and screen SC-1C must meet PM limit of 0.014 grain/dscf. (b)Transfer points BC-1C and BC-2C must limit opacity to 7%.	Monitoring, Recordkeeping, and Monthly VE
6.1.10		When not processing limestone - Comply with applicable standards of 40 CFR 63 subpart XXX Crushing/Screening exhaust shall not exceed 50 mg/dscm (0.22 gr/dscf)	Monitoring and Recordkeeping.
6.1.11		PM Emissions	Monitoring and Recordkeeping.
6.1.12		Process no more than 250,000 tons/yr.	Monitoring and Recordkeeping
6.1.13		Throughput shall not exceed: Screen SC-01B, Screen RBSC-01, Screen RBSC-02, Crusher RBCR-01, Crusher CR-01B	Monitoring and Recordkeeping. This unit is not in service currently
6.1.14		Gas Emissions Table	Record keeping.
6.1.15		Diesel fuel emissions shall not exceed 16,800 gal/yr.	Record keeping.
6.1.16		CO levels in the exhaust of the Bivitec and Barge Screening Engine shall not exceed 230 ppmvd at 15% O ₂ .	Monitoring and Recordkeeping.
6.1.17		Operation and maintenance of air pollution control equipment –See permit standards.	Monitoring and Recordkeeping.
6.1.18 b)1-3	a) 1-3	Owner or operator of any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal constructed, reconstructed, or modified. [40CFR §§60.254(b) and (c)(1),(2) and (6), and 45CSR16 (Conveyers BC1A,BC2A,BC1C,BC2C,BC1D, and BC2D; Screens SC-01A, BTSC-01,RBSC-01,and RBSC-02; and Crusher CR-01B]	Monitoring and Recordkeeping.

6.1.19 a), b), c), d), e)	Emergency stationary CI ICE with a displacement of less than 10 liters per cylinder shall: a) comply with NO emission standard of 6.9g/hp-hr. b)purchase diesel fuel that meets the requirements of 40 CFR §80.510(b) for non-road diesel fuel. c) operate and maintain the stationary CI internal combustion engine and control device according to the manufacture’s emission-related written instructions. d) Change only those emission-related settings that are permitted by the manufacturer. e) Meet requirements of the 40 CFR parts 89,94 and/or 1068, as they apply.	Monitoring
6.1.20	Testing requirements 40CFR part 63, subpart ZZZZ.	Monitoring
6.1.21	Emissions from the operation covered under permit application RI 3-2857B shall not exceed 45CSR13-R13-2857, Condition 4. 1.29	Monitoring and Recordkeeping.
6. 1 .22	The total amount of material processed through Hopper H1 hall not exceed 160,000 tons per year. Compliance with this limit shall be based on a 12 month rolling total.	Monitoring and Recordkeeping.
6.1.23	Emissions from screen C I and transfer point CTP I shall be controlled by use of a baghouse (BH 1-C). Said baghouse hall be designed, installed, operated and maintained so as to achieve a minimum overall efficiency of at least 99% from the screen and 90% from the transfer point.	Monitoring and Recordkeeping.
6.1.24	Emissions from Screen CS2 and transfer point CTP6 shall be controlled by use of a baghouse (BH 1-8). Said baghouse shall be designed, installed, operated and maintained o as to achieve a minimum overall efficiency of at least 90% from the screen and 99% from the transfer point.	Monitoring and Recordkeeping.
6.1.25	Emissions from transfer points CTP9, CTP 11 and CTP 13 hall be controlled by use of a baghouse (BH 1-A). Said baghouse shall be designed, installed, operated and maintained so as to achieve a minimum overall efficiency of at least 99%.	Monitoring and Recordkeeping.
6.1.26	Pressure drop across each baghouse shall be maintained within manufacturer specifications.	Monitoring and Recordkeeping.
6.2.1	Testing requirements – 40 CFR- Part 60- SUBPART OOO	Testing.
6.2.2	40 CFR 63 Subpart XXX, initial performance testing.	Initial performance testing.
6.2.3	Performance Tests and Other Compliance Requirements for Subpart Y – Performance Tests.	Visual Emissions, Observations and Recordkeeping.

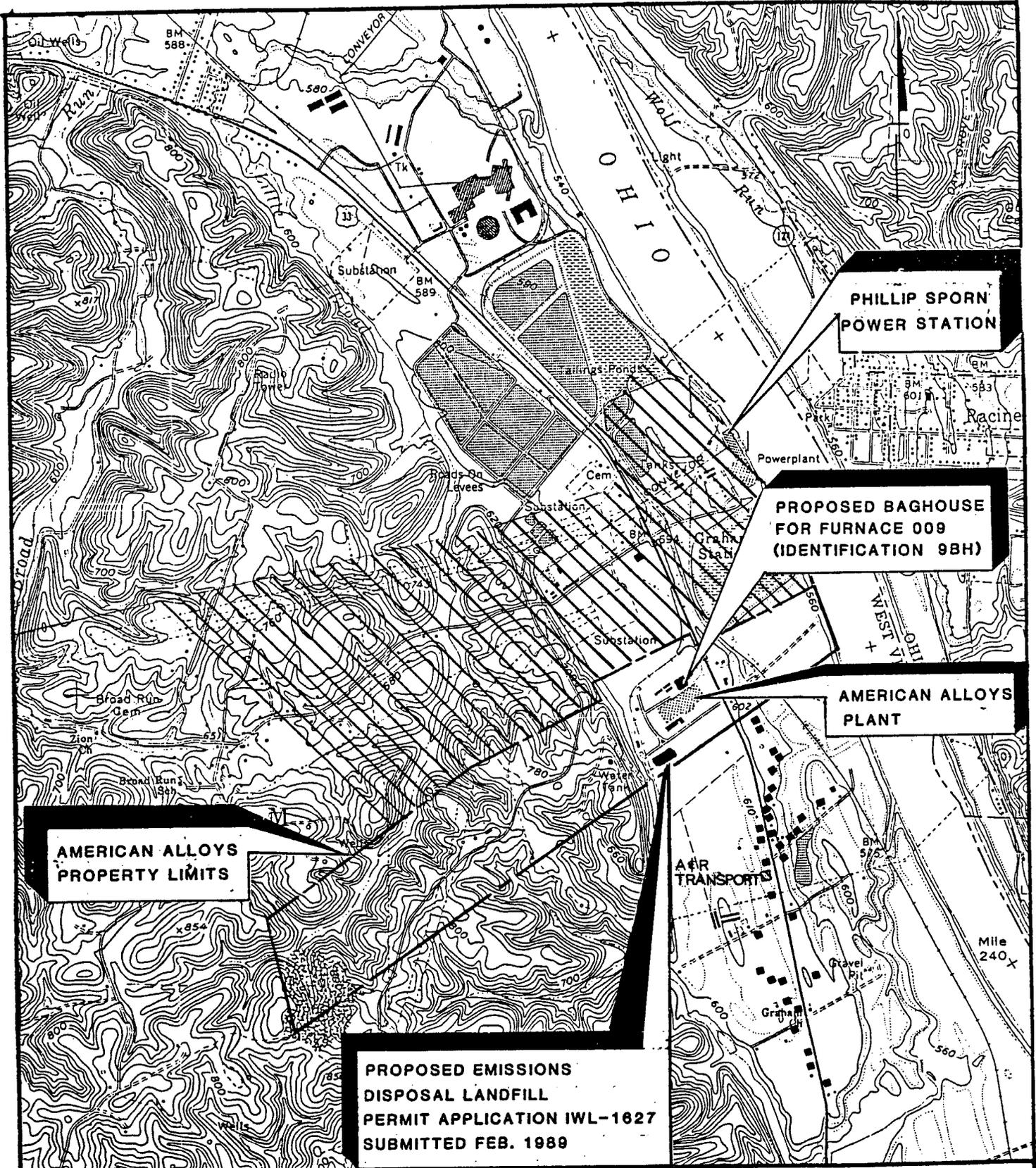
6.2.4 a & b	Performance Tests and Other Compliance Requirements for Subpart Y –Monitoring Visible Emissions or Digital Opacity Compliance System.	a) i. = N/A, ii.=N/A, iii. = N/A b) N/A
6.2.5	Performance Tests and Other Compliance Requirements.	Monitoring and Recordkeeping.
6.3.1	Maintain accurate records of required pollution control equipment inspection and /or preventative maintenance procedures.	Recordkeeping
6.3.2	Maintain records of occurrence and duration of any malfunction or operational shutdown of air pollution control equipment.	Recordkeeping.
6.3.3	Permittee shall comply with applicable monitoring and recordkeeping requirements of 40 CFR 60 subpart OOO.	Recordkeeping.
6.3.4	Permittee shall comply with applicable monitoring and recordkeeping requirements of 40 CFR 63 subpart XXX including sections 3.2.1., 3.2.3., 3.4.5., 3.4.5.	Recordkeeping and Daily VE Readings.
6.3.5	Monitor and record material processed through screen SC-1C, on a monthly basis.	Monitoring And Recordkeeping.
6.3.5	Monitor and record material processed through extruder EX-1 on a monthly basis.	Monitoring And Recordkeeping
6.3.5	Monitor and record material processed through pelletizer PT-1 on a monthly basis.	Monitoring And Recordkeeping
6.3.5	Monitor and record material processed through Crusher CR-01B and RBCR-01 on a monthly basis.	Monitoring And Recordkeeping
6.3.6	Monitor fuel oil consumed by listed engines.	Monitoring And Recordkeeping
6.3.7	Comply with engine emissions standards specified in Section 6.1.19	Monitoring And Recordkeeping
6.3.8	Per 40 CFR 60-4211(b) 1-5 63.6655 PM records, malfunctions, comply with record keeping requirements of Bivitec and Barge Screener.	Monitoring And Recordkeeping
6.3.9	In order to determine compliance with sections 6.1.22. of this permit the permittee shall monitor and record the amount of material processed through the hopper HI on a monthly basis.	Monitoring and Recordkeeping.
6.3.10	In order to determine compliance with sections 6. I .26. of this permit the permittee shall monitor and record the pressure drop across each baghouse at least once per operating day.	Monitoring and Recordkeeping.
6.4.1	Permittee shall comply with applicable monitoring and recordkeeping requirements of 40 CFR 60 subpart OOO.	Reporting.

6.4.2	Permittee shall comply with applicable monitoring and recordkeeping requirements of 40 CFR 63 Subpart XXX.	Reporting.
6.4.3	Permittee shall comply with applicable monitoring reporting Requirements of 40 CFR 60.258 and Subpart Y	N/A
6.4.4	Permittee shall comply with applicable monitoring reporting Requirements of 40 CFR-63- Subpart ZZZZ.	N/A
6.5	Compliance Plan.	NA



Name: NEW HAVEN
 Date: 6/10/2010
 Scale: 1 inch equals 2000 feet

Location: 17 419054 E 4312028 N



**PHILLIP SPORN
POWER STATION**

**PROPOSED BAGHOUSE
FOR FURNACE 009
(IDENTIFICATION 9BH)**

**AMERICAN ALLOYS
PLANT**

**AMERICAN ALLOYS
PROPERTY LIMITS**

**PROPOSED EMISSIONS
DISPOSAL LANDFILL
PERMIT APPLICATION IWL-1627
SUBMITTED FEB. 1989**

LEGEND

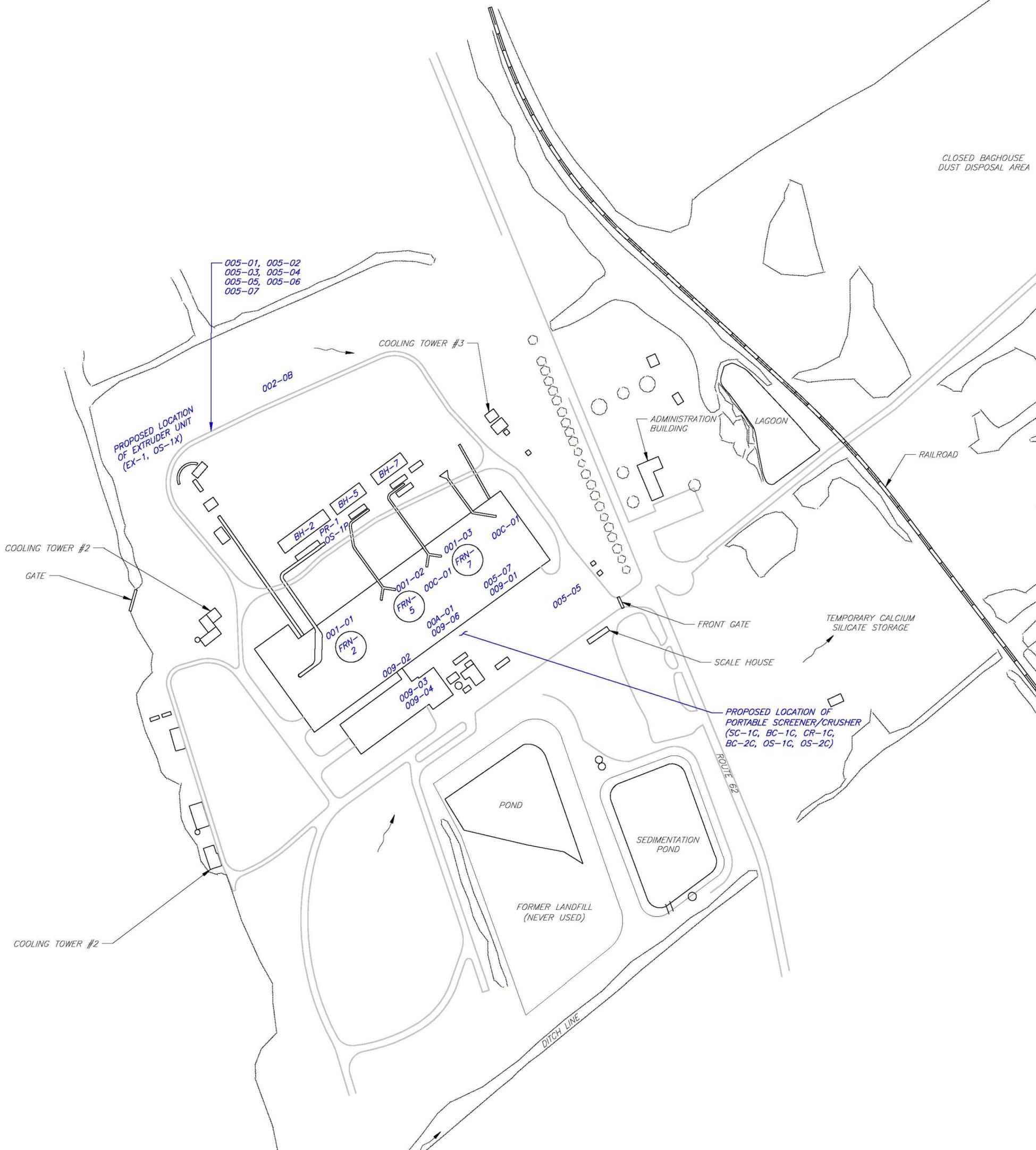
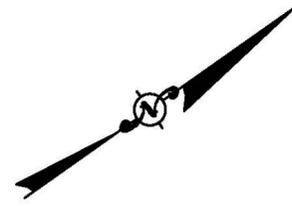
- SINGLE/MULTIPLE FAMILY RESIDENCE ■
- COMMERCIAL FACILITIES (IDENTIFICATION) □

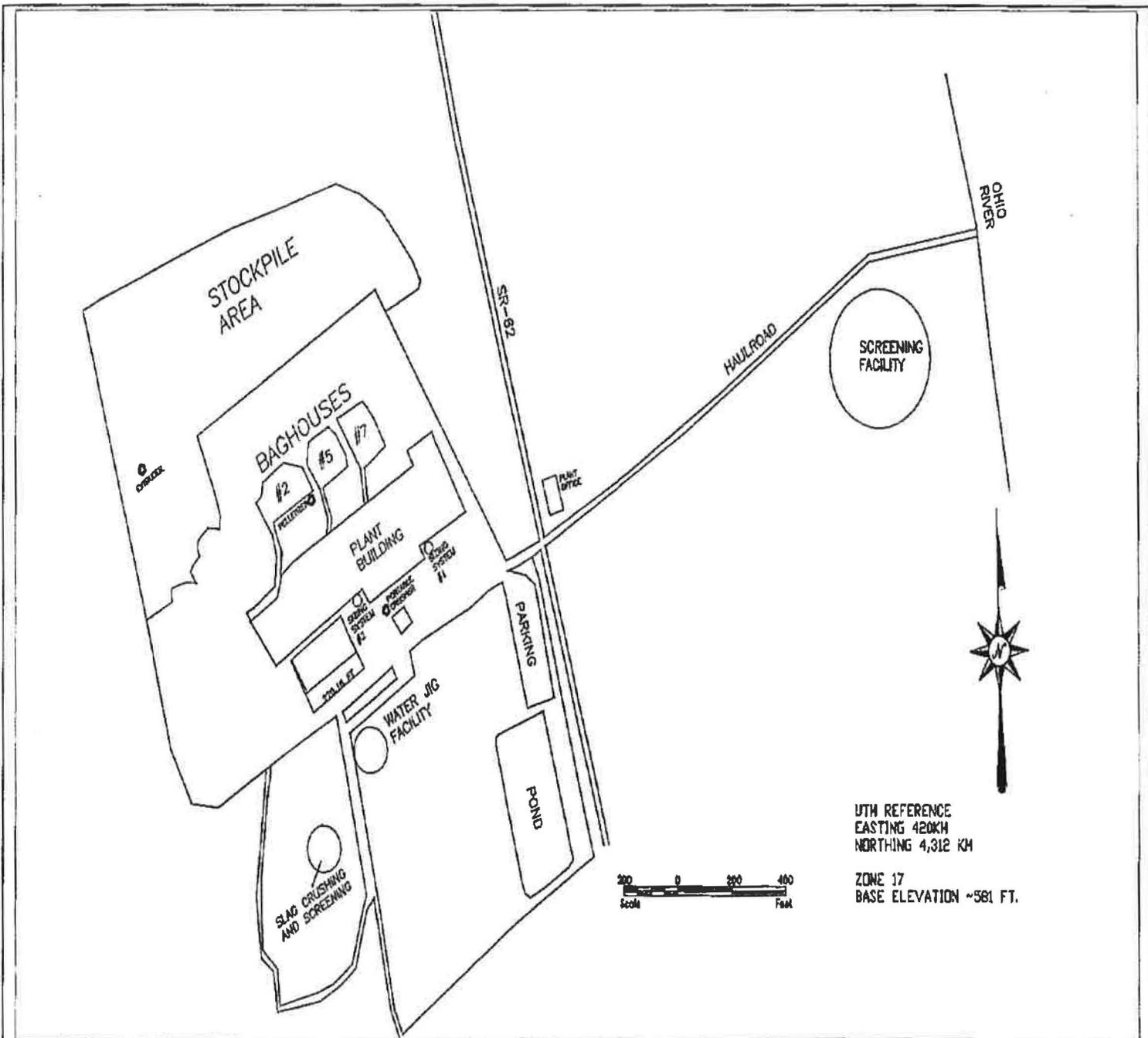
**AMERICAN ALLOYS INC.
NEW HAVEN, WV.**

**PLANT LOCATION PLAN
AREA LAND USE AND
No. 9 FURNACE BAGHOUSE LOCATION**

**REF.: U.S.G.S. NEW HAVEN QUADRANGLE
SCALE: 1" = 2000'**

Attachment B: Plot Plan



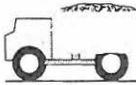


UTM REFERENCE
 EASTING 420KH
 NORTHING 4,312 KH
 ZONE 17
 BASE ELEVATION ~581 FT.



PLOT PLAN

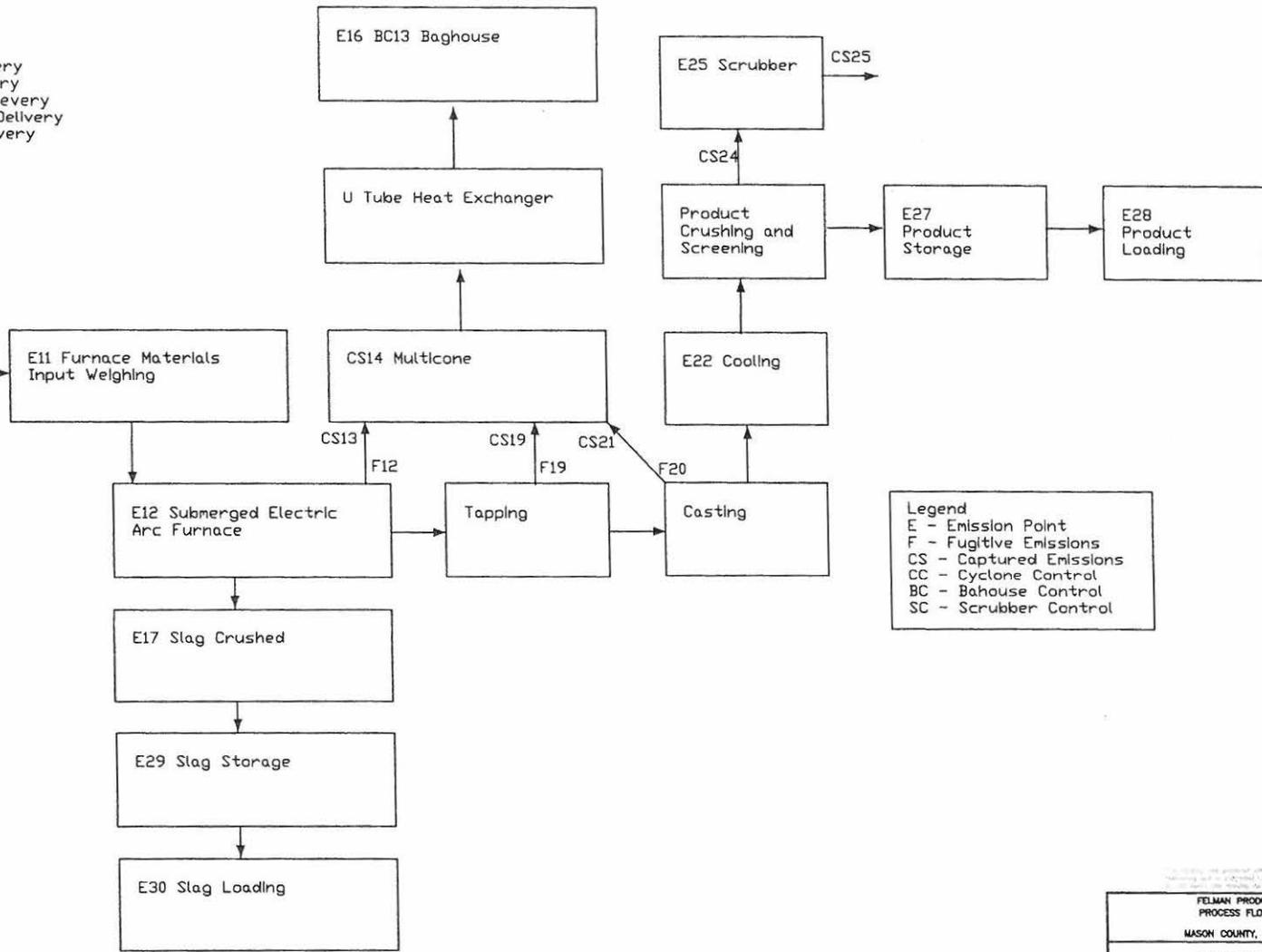
FELMAN PRODUCTION, INC.
 LETART, WEST VIRGINIA



- E01 005-01 Unpaved Road - Scrap Delivery
- E03 005-02 Unpaved Road - Coke Delivery
- E05 005-03 Unpaved Road - Mn Ore Delivery
- E07 005-04 Unpaved Road - Limestone Delivery
- E09 005-06 Unpaved Road - Remelt Delivery
- E11 Unpaved Road FeMn Slag Delivery
- 005-07 Unpaved Road - Lift Trucks



- 002-0B Outdoor Storage Piles
- E02 Scrap Storage
- E04 Coke Storage
- E06 Mn Ore Storage
- E08 Limestone Storage
- E10 Remelt Storage
- E12 Slag Storage

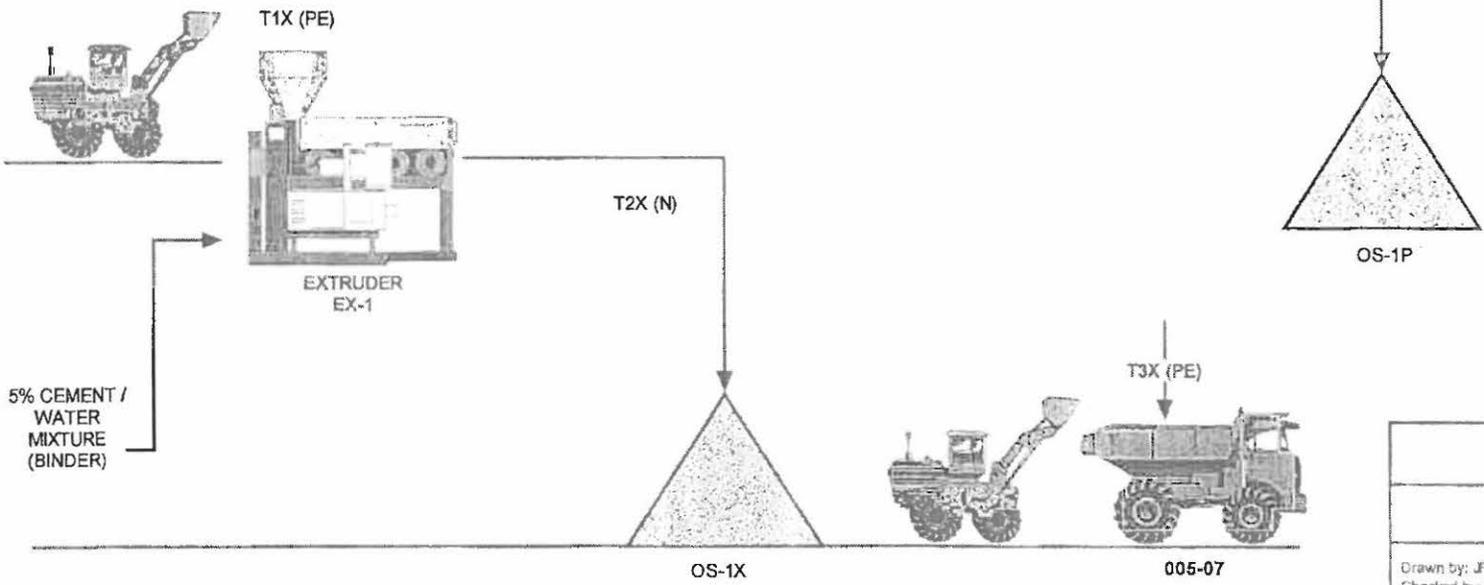
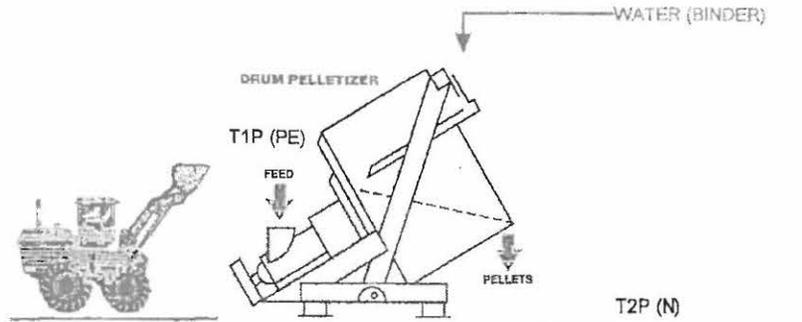


Legend
 E - Emission Point
 F - Fugitive Emissions
 CS - Captured Emissions
 CC - Cyclone Control
 BC - Bahouse Control
 SC - Scrubber Control



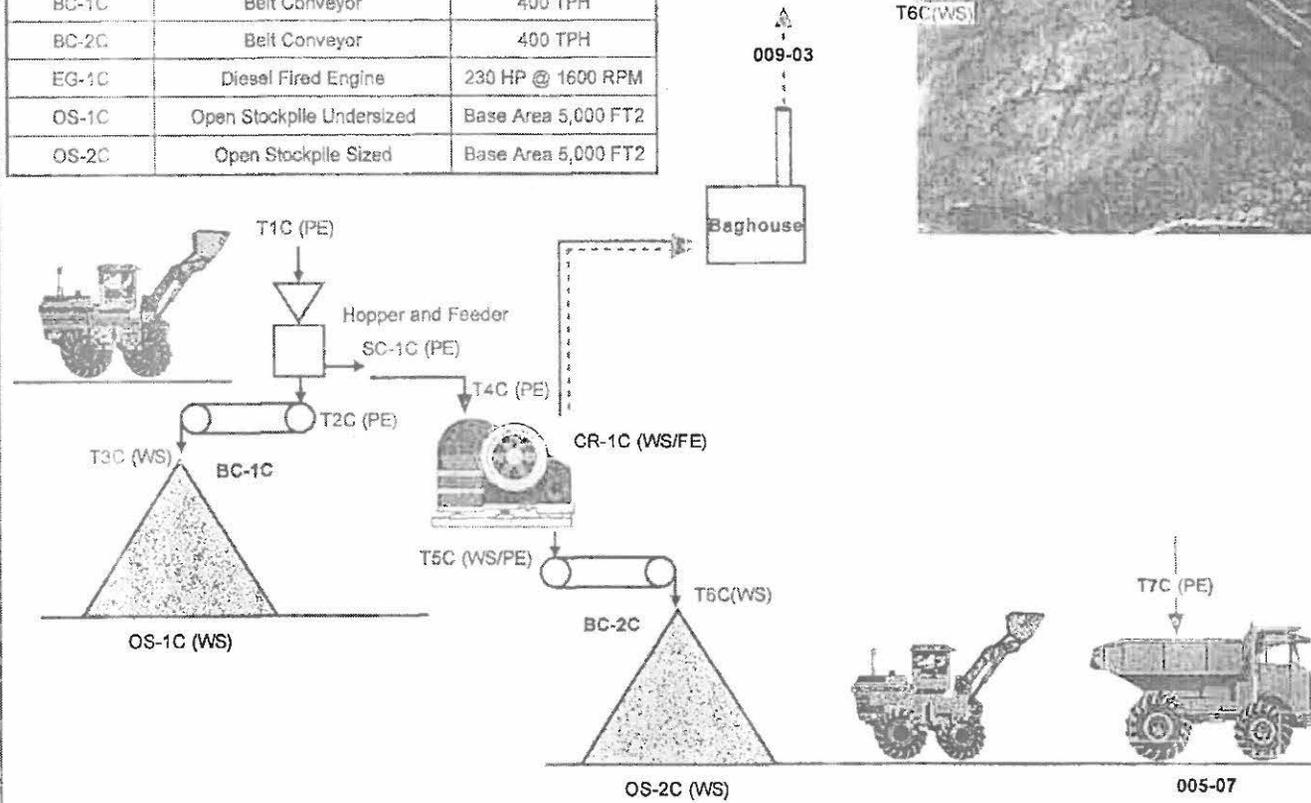
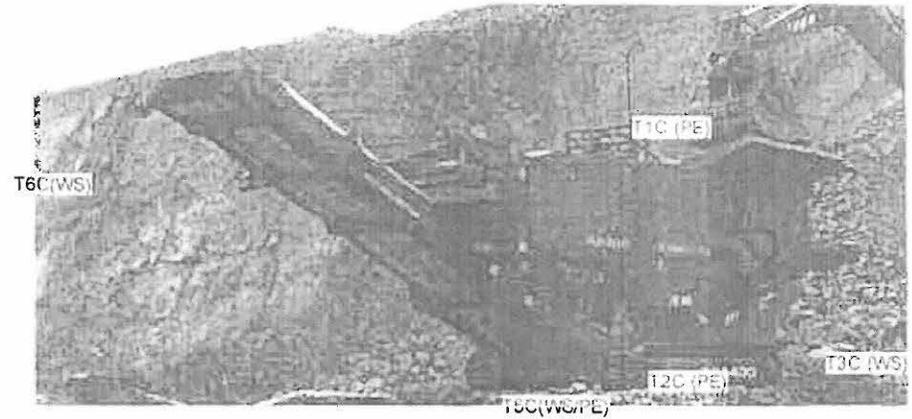
FELMAN PRODUCTION, INC. PROCESS FLOW DIAGRAM MASON COUNTY, WEST VIRGINIA			
FELMAN PRODUCTION, INC. LETART, WEST VIRGINIA			
DATE	NTS	PROJECT NO.	08-118-01
DRAWN BY		DATE REVISION	
			2

EQUIPMENT TABLE		
Emission Unit ID	Description	Capacity
EX-1	Extruder Unit	20 TPH
PT-1	Pelletizing Unit	6 TPH
OS-1X	Open Stockpile - Briquettes	Base Area 5,000 ft ²
OS-1P	Open Stockpile - Pellets	Base Area 5,000 ft ²



Process Flow Diagram Extruder-Pelletizing Unit	
Felman Production, Inc. Letart, WV	
Drawn by: JFJ Checked by: RMV	Project No: ERSG 10-128-07 Date: 8-21-2010
Environmental Regulatory Service Group, Inc. 2303 Roxalane Road, Dunbar, WV 25084 ph. (304) 746-4780	

EQUIPMENT TABLE		
Emission Unit ID	Description	Capacity
CR-1C	Jaw Crusher	400 TPH
SC-1C	Grizzly Feeder	400 TPH
BC-1C	Belt Conveyor	400 TPH
BC-2C	Belt Conveyor	400 TPH
EG-1C	Diesel Fired Engine	230 HP @ 1600 RPM
OS-1C	Open Stockpile Undersized	Base Area 5,000 FT ²
OS-2C	Open Stockpile Sized	Base Area 5,000 FT ²



Process Flow Diagram Portable Crushing Unit	
Felman Production, Inc. Letart, WV	
Drawn by: JFJ Checked by: RMM	Project No: ERSG 10-128-07 Date: 8-21-2010
 Environmental Regulatory Service Group, Inc. 2303 Roxalene Road, Dunbar, WV 25064 ph. (304) 748-4780	

Raw Materials Handling

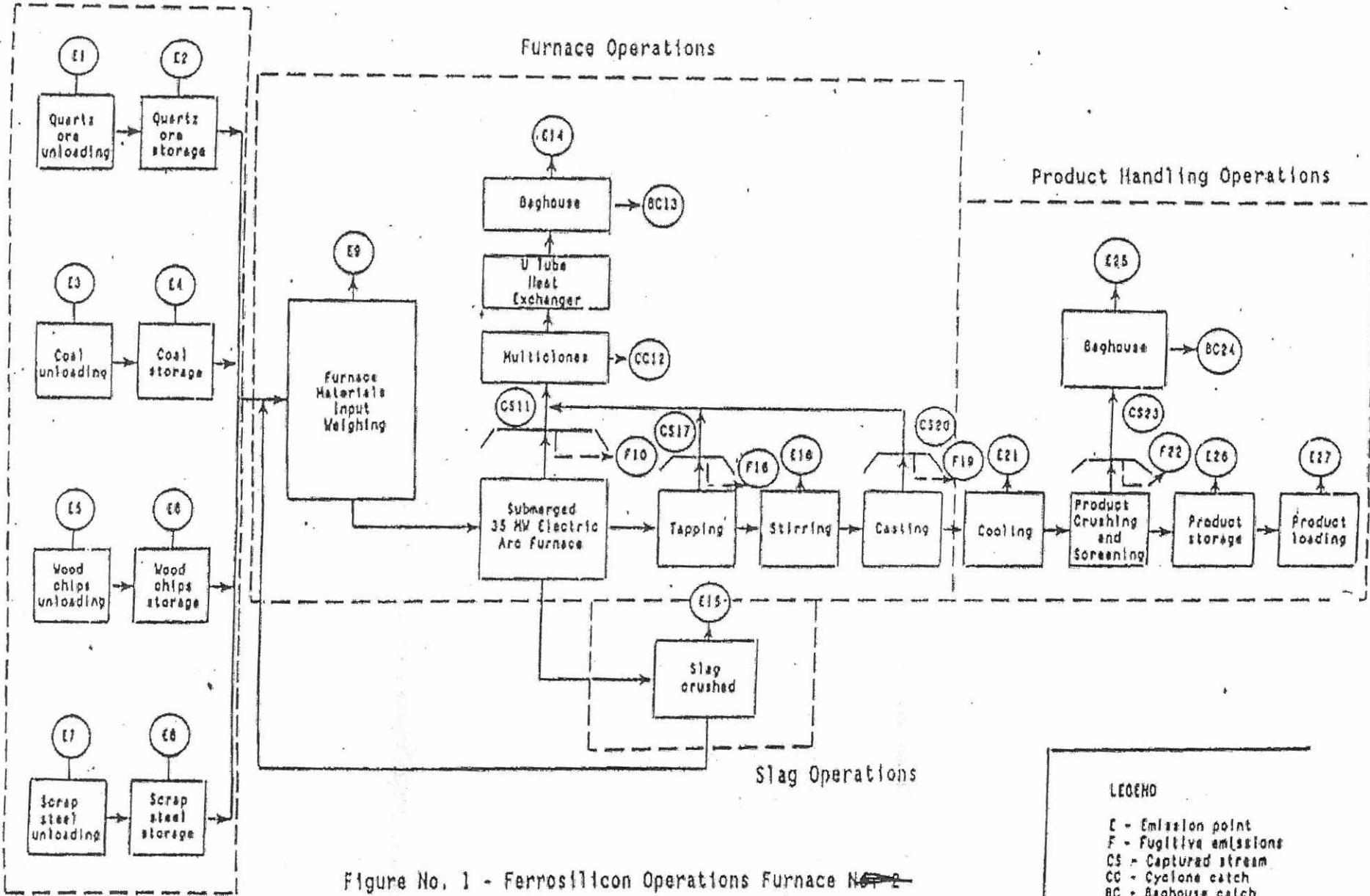
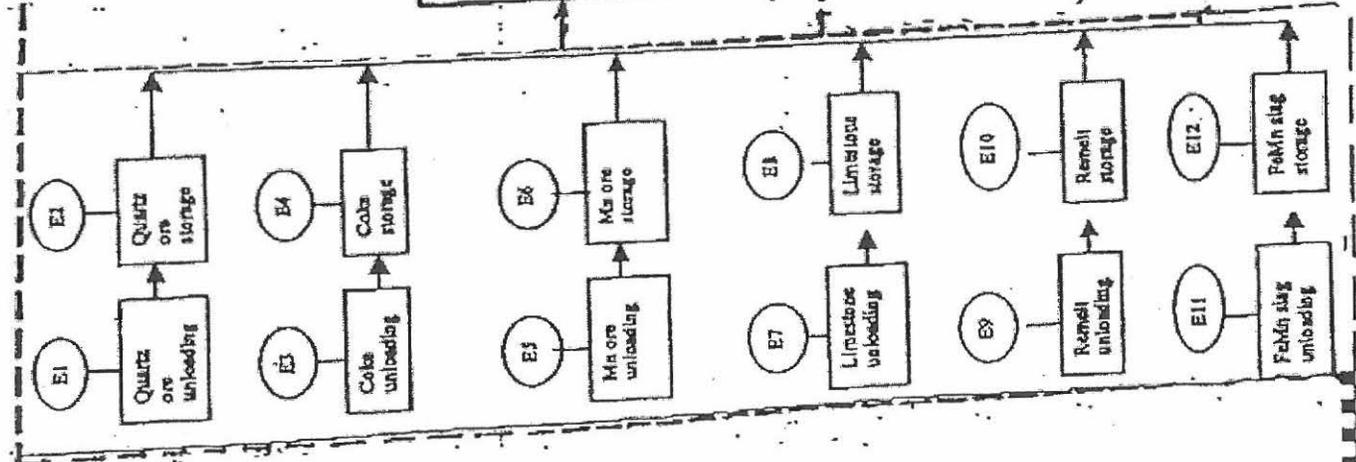


Figure No. 1 - Ferrosilicon Operations Furnace No. 2

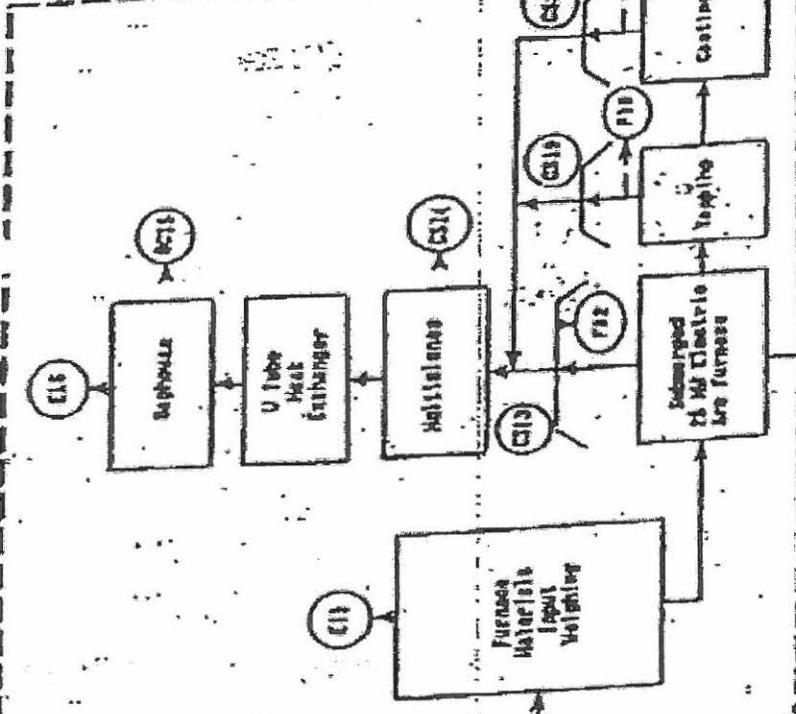
LEGEND

- E - Emission point
- F - Fugitive emissions
- CS - Captured stream
- CC - Cyclone catch
- BC - Baghouse catch

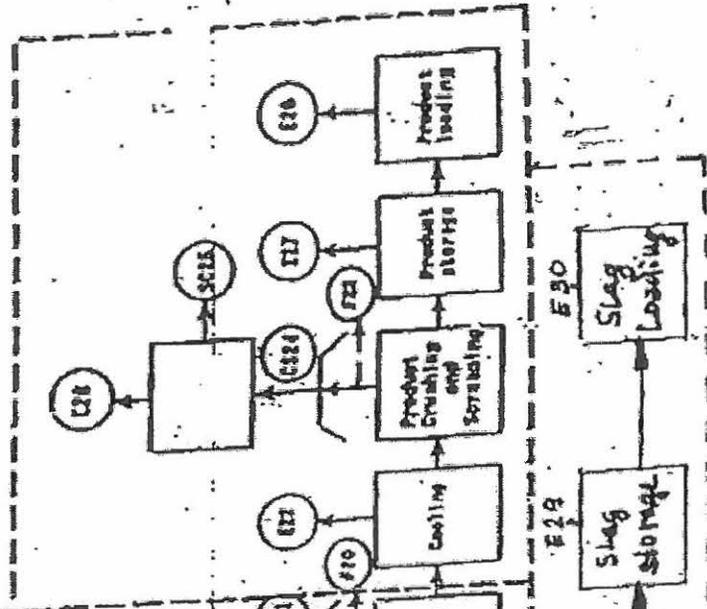
Raw Materials Handling



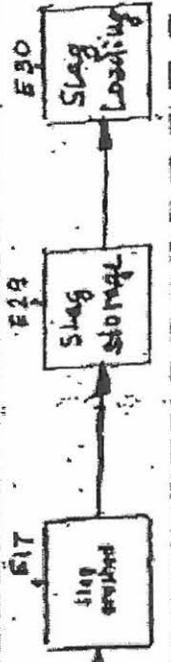
Furnace Operations



Product Handling Operations



Slag Operations



LEGEND

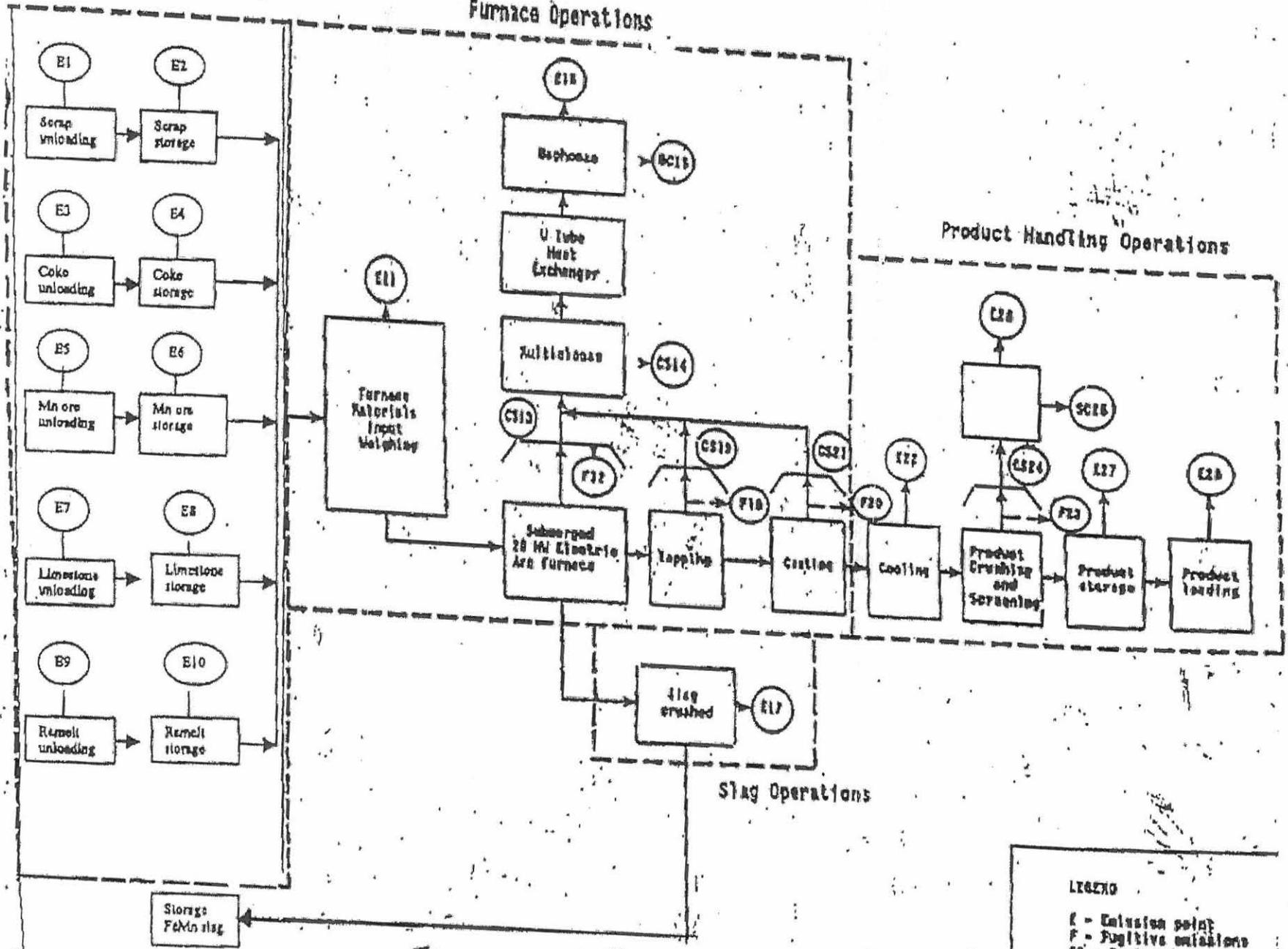
- E - Emission point
- F - Purging operations
- CS - Captured stream
- CC - Cyclone catch
- IC - Inert catch
- SC - Scrubber catch

Figure No2 Silicomanganese Operations

Raw Materials Handling

Furnace Operations

Product Handling Operations



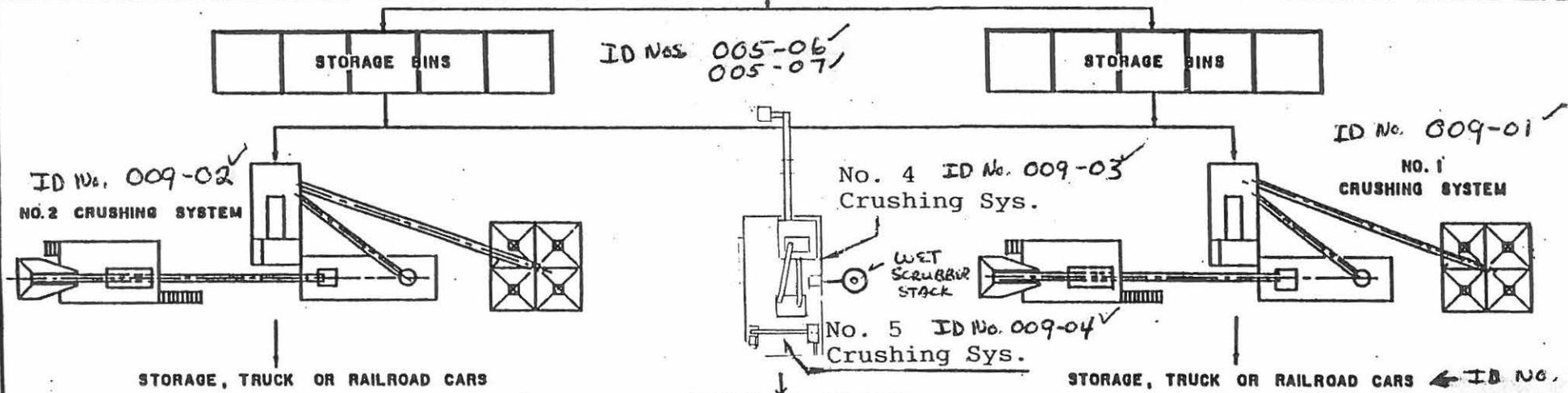
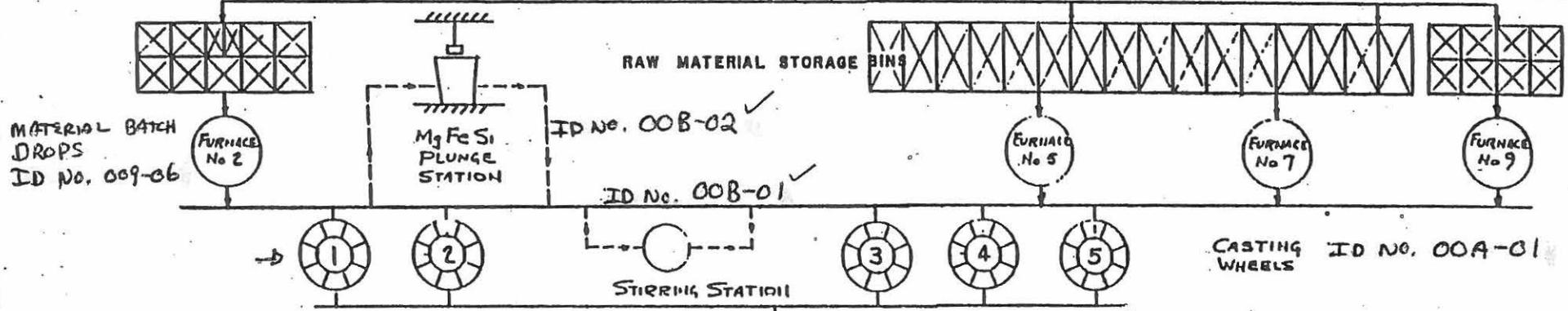
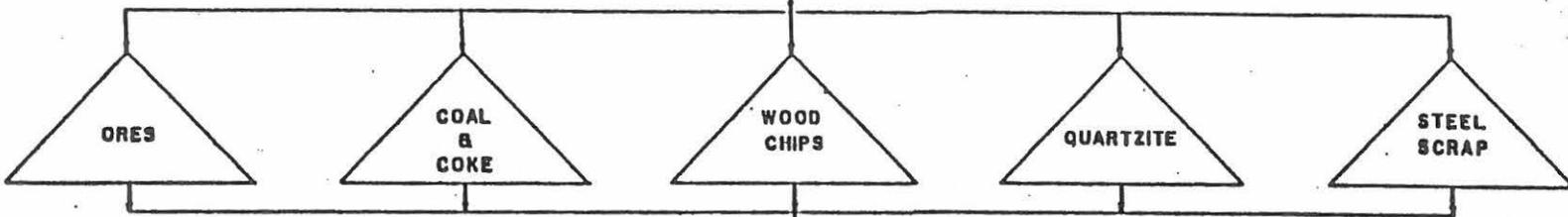
- LEGEND**
- E - Emission point
 - F - Fugitive emissions
 - CS - Captured stream
 - CC - Cyclone catch
 - BC - Baghouse catch
 - SC - Scrubber catch

Figure No. 1. Ferromanganese Operations

DUMP TRUCK

YARD ID Nos.: 002-08 ✓, 005-04 ✓, 005-01 ✓, 005-05 ✓, 005-02 ✓, 005-06 ✓, 005-03 ✓, 005-07 ✓

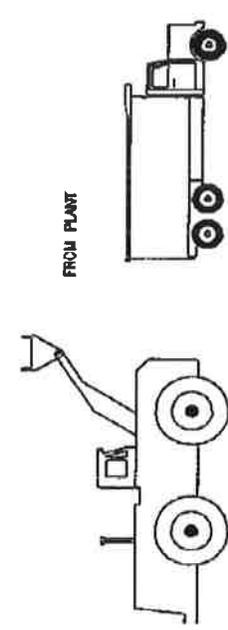
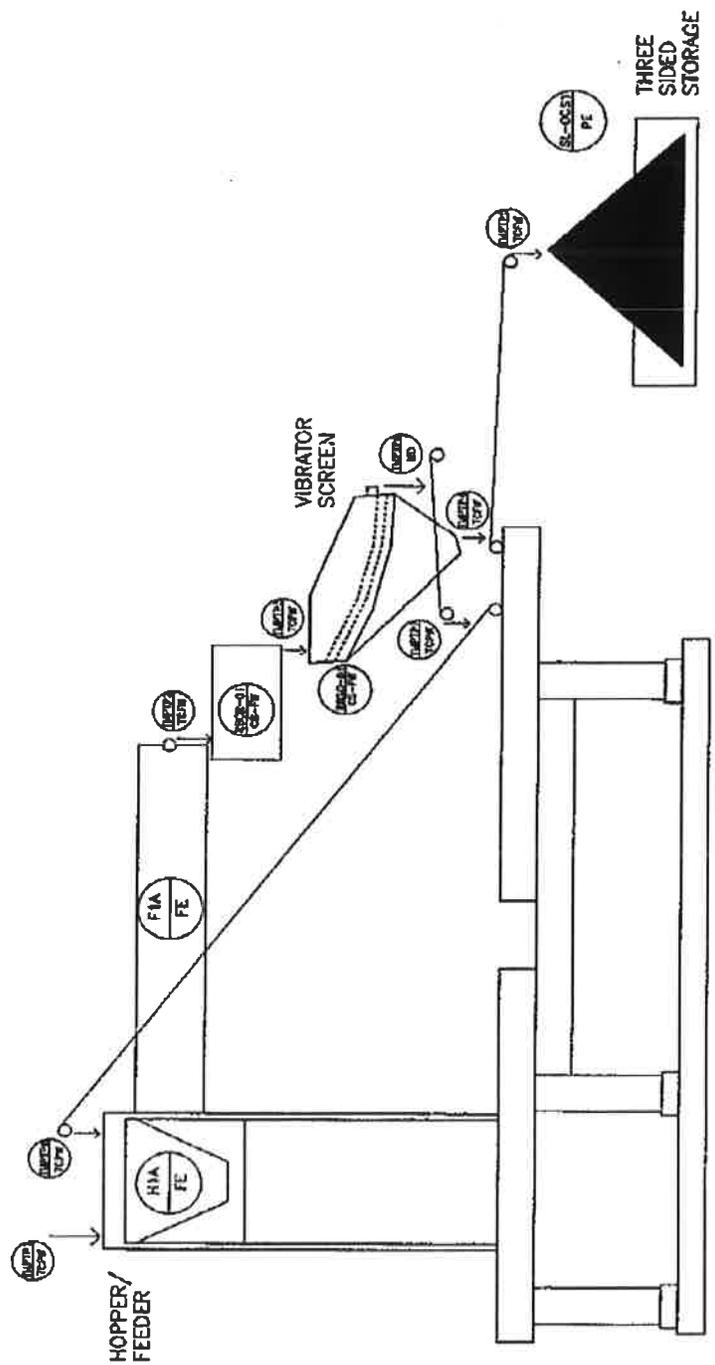
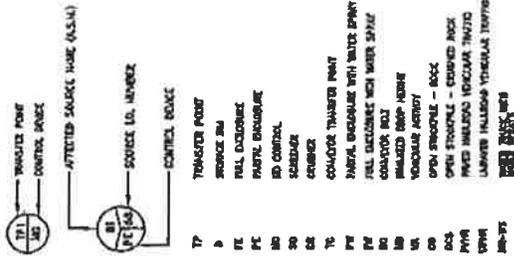
RAILROAD CARS DELIVERY



KEY
 ← Emitting Unit
 ID Nos.

AMERICAN ALLOYS PROCESS FLOW SHEET

LEGEND



STORAGE SUMMARY	
A.S.N.	DESCRIPTION
13-00-01	OPEN SPACE PILE
	CAPACITY
	LOAD TON

EQUIPMENT SUMMARY			
A.S.N.	DESCRIPTION	MARK	CONTROL
13-00-01	OPEN SPACE PILE	13-00-01	13-00-01
13-00-02
13-00-03
13-00-04
13-00-05

FELMAN PRODUCTION, INC.
 PROCESS FLOW DIAGRAM
 NEW HAVEN PLANT
 LETWELL MASON COUNTY,
 WEST VIRGINIA

No.	Date	Revision

FLOW-2
 CAD File No.
 CDB
 Drawn
 PEW
 Checked
 PEW
 Approved
 NOT TO SCALE
 Scale:
 DECEMBER 2012
 Date:
 11-0444
 Project No.

POTESTA & ASSOCIATES, INC.
 ENGINEERS AND ENVIRONMENTAL CONSULTANTS
 7012 MacCordle Ave. SE, Charleston, WV 25304
 TEL: (304) 342-1400 FAX: (304) 349-9031
 E-Mail Address: potesta@potesta.com

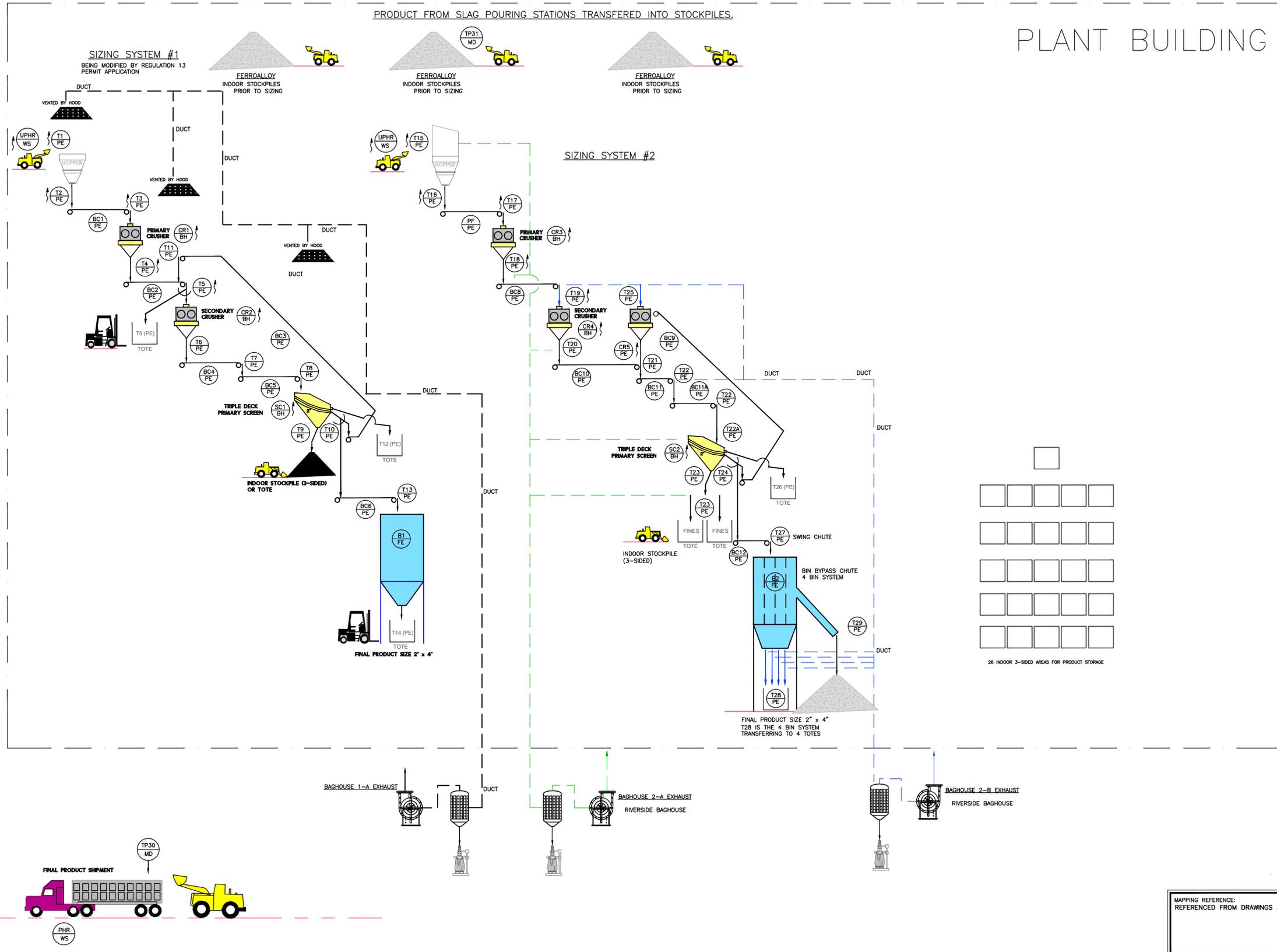
POTESTA

FELMAN PRODUCTION, L.L.C.
 NEW HAVEN, WEST VIRGINIA

ISSUE DATE 01/18/13

Client
 NEW HAVEN PLANT PROCESS FLOW
 DIAGRAM PLANT ID.
 03-54-053-00004

Title
 2
 Drawing No.



MAPPING REFERENCE:
 REFERENCED FROM DRAWINGS AS PROVIDED TO POTESTA & ASSOCIATES, INC. BY ERGS.

PRELIMINARY

WSE File:
 File: S:\CAD-Info\2011\11-0444 - FELMAN\PROCESS FLOW-1.dwg
 Plotted By: BEleney

ATTACHMENT D - Title V Equipment Table
(includes all emission units at the facility except those designated as insignificant activities in Section 4, Item 24 of the General Forms)

Emission Point D ¹	Control Device ¹	Emission Unit ID ¹	Emission Unit Description	Design Capacity	Year Installed/Modified
001-01	BH2	001-01	No. 2 Furnace	32 MW	1966
001-02	BH5	001-02	No. 5 Furnace	20 MW	1974
001-03	BH7	001-03	No. 7 Furnace	20 MW	1975
002-0B	NA	002-0B	Outdoor Storage Piles	3 Acres	1952
005-01	NA	005-01	Unpaved Road – Raw Material Delivery	NA	NA
005-02	NA	005-02	Unpaved Road – Gravel Delivery	NA	NA
005-03	NA	005-03	Unpaved Roads –Raw Material / Stock Delivery	NA	NA
005-04	NA	005-04	Unpaved Road – Scrap Metal Delivery	NA	NA
005-05	NA	005-05	Unpaved Road – Products Shipments	NA	NA
005-06	NA	005-06	Unpaved Road – Raw Material Transfer	NA	NA
005-07	NA	005-07	Unpaved Road – End loaders	NA	NA
009-01	BH	009-01	Crushing and Screening System #1	150 TPH	2014
009-02	BH	009-02	Crushing and Screening System #2	33 TPH	NA
009-06	NA	009-06	Transfer Points	28 TPH	NA
00A-01	BH	00A-01	Product Casting Operations	20 TPH	NA
00C-01	NA	00C-01	Ladle Burners (Two Systems)	140 MMBtu	NA
SC-1CE	Baghouse	SC-1C	Grizzly Feeder	400 TPH	2010
T3C	NA	BC-1C	Screen Reject Belt Conveyor	400 TPH	2010
009-03	Baghouse	CR-1C	Jaw Crusher	400 TPH	2010
T6C	NA	BC-2C	Belt Conveyor	400 TPH	2010
OS-1CE	NA	OS-1C	Unsize Stockpile	5,000 sq. ft.	2010
OS-2CE	NA	OS-2C	Sized Stockpile	5,000 sq. ft.	2010
EX-1E	NA	EX-1	Extruder Unit	20 tph	2010
OS-1XE	NA	OS-1X	Briquette Stockpile	5,000 sq. ft.	2010
PT-1E OS-1PE	FE/N	PT-1 OS-1P	Pelletizer Unit and Stockpile	6 TPH	2010
H1-M	NA	H1-M	Crusher Hopper	400 tpy	2014
F1-M	NA	F1-M	Grizzly Feeder	400 tpy	2014
BC1-M	NA	BC1-M	Belt Conveyor/Top Deck Transfer Belt	400 tpy	2014
CR1-M	NA	CR1-M	Horizontal Impact Crusher; 271 hp	400 tpy	2014
BC2-M	NA	BC2-M	Oversize Recirculation Belt	400 tpy	2014
BC3-M	NA	BC3-M	Belt Conveyor	400 tpy	2014
S1-M	NA	S1-M	Bottom Deck Belt	400 tpy	2014
BTSC-01	NA	BTSC-01	Bivitech Screen/Diesel Engine	150 TPH	2009
BC1A	NA	BC1A	Belt Conveyor	250 TPH	2012
BC2A	NA	BC2A	Belt Conveyor	250 TPH	2012
BC1B	NA	BC1B	Belt Conveyor	200 TPH	2012
BC2B	NA	BC2B	Belt Conveyor	200 TPH	2012
BC1C	NA	BC1C	Belt Conveyor	150 TPH	2009

BC2C	NA	BC2C	Belt Conveyor	150 TPH	2009
BC1D	NA	BC1D	Belt Conveyor	150 TPH	2012
BC2D	NA	BC2D	Belt Conveyor	150 TPH	2012
OCS1	PE	OCS1	Concentrate Stockpile	5,000 Ton	2012
OCS2	PE	OCS2	Middlings Stockpile	5,000 Ton	2012
OCS3	PE	OCS3	Slag Stockpile	5,000 Ton	2012
H1	PE	H1	Hopper	150 tph	2014
2E	FE+BH	PF	Pan Feeder	150 tph	2011
2E	FE+BH	CS1	Screen No. 1	150 tph	2014
CC1	FE+BH	CC1	Crusher No. 1	120 tph	2014
1E	FE+BH	BC1	Conveyor No. 1	120 tph	2014
BC2	FE+BH	BC2	Conveyor No. 2	120 tph	2011
BC3	FE+BH	BC3	Conveyor No. 3	120 tph	2011
1E	PE+BH	CS2	Screen No. 2	120 tph	2011
BC4	FE	BC4	Conveyor No. 4	60 tph	2011
CC2	FE+BH	CC2	Crusher No. 2	60 tph	2014
CS3	FE+BH	CS3	Screen 3 / Terex Screener	60 tph	2014
BC5	FE+BH	BC5	Conveyor No. 5	60 tph	2014
H1	PE	H1	Hopper	3.75 tons/hr	2015
BC-1	PE	BC-1	Belt Conveyor	3.75 tons/hr	2015
H2	PE	H2	Charge Hopper	3.75 tons/hr	2015
EP1	BH-1	F1	Induction Furnace	3.75 tons/hr	2015

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device	Permit Cond't	Potential Emissions			Carbon Monoxide (CO) PPH
							Maximum Hourly Throughput: Production Rate	Maximum Annual Throughput: Production Rate	Maximum Operating Schedule: Hours/Yr	
001-01	001-01	No. 2 Furnace; Elkem	1966	15.26 tons/hr; 48.25 MW	BH2		10.1 tph	88,476 (10.1 tph x 8,760 hr/yr)	8760.00	96.10
001-02	001-02	No. 5 Furnace; Lectromelt	1974	7.18 tons/hr; 22.80 MW	BH5		5.0 tph	43,800 (5 tph x 8,760 hr/yr)	8760.00	82.17
001-03	001-03	No. 7 Furnace; Lectromelt	1975	8.08 tons/hr; 25.65 MW	BH7		5.0 tph	43,800 (5 tph x 8,760 hr/yr)	8760.00	83.38
00A-01	00A-01	Product Casting Operations	N/A	20 tons/hr	Baghouses		20 tph	165,367 tpy	8760.00	0.00
00C-01	00C-01	Ladle Burners (No. 2 oil)	N/A	140 MMBtu/hr, 40 gal/hr	None		40 gph each	44,000 gpy	8760.00	0.05
002-0B	002-0B	Outdoor Storage Piles	1952	3 acres	None		N/A	N/A	8760.00	0.00
005-01	005-01	Unpaved Road - Raw Material Delivery	N/A	N/A	None		N/A	N/A	8760.00	0.00
005-02	005-02	Unpaved Road - Gravel Delivery	N/A	N/A	None		N/A	N/A	8760.00	0.00
005-03	005-03	Unpaved Road - Wood Chips Delivery	N/A	N/A	None		N/A	N/A	8760.00	0.00
005-04	005-04	Unpaved Road - Scrap Metal Delivery	N/A	N/A	None		N/A	N/A	8760.00	0.00
005-05	005-05	Unpaved Road - Product Shipments	N/A	N/A	None		N/A	N/A	8760.00	0.00
005-06	005-06	Unpaved Road - Raw Materials Transfer	N/A	N/A	None		N/A	N/A	8760.00	0.00
005-07	005-07	Unpaved Road - Endloaders	N/A	N/A	None		N/A	N/A	8760.00	0.00
009-01	009-01	Crushing and Screening System #1	N/A	33 tons/hr	Baghouses		150 tph	26439.3 tpy	8760.00	0.00
009-02	009-02	Crushing and Screening System #2	N/A	33 tons/hr	Baghouses		33 tph	68742.1 tpy	8760.00	0.00
009-03	009-03	Crushing and Screening System #4	N/A	20 tons/hr	Baghouse					
009-04	009-04	Crushing and Screening System #5	N/A	20 tons/hr	Baghouse					
009-06	009-06	Transfer Points	N/A	28 tons/hr	None		28 tph	n/a	8760.00	0.00
SC-1C	SC-1CE	Grizzly Feeder	2010	400 tons/hr	Baghouse	4.1, 6.1,	400 tph	90000 tpy	8760.00	0.00
BC-1C	T3C	Screen Reject Belt Conveyor	2010	400 tons/hr	WS	R13-2857				
CR-1C	009-03	Jaw Crusher	2010	400 tons/hr	Baghouse	R13-2857				
BC-2C	T6C	Belt Conveyor	2010	400 tons/hr	WS	R13-2857				
OS-1C	OS-1CE	Unsize Stockpile	2010	5,000 sq. ft.	WS	R13-2857				
OS-2C	OS-2CE	Sized Stockpile	2010	5,000 sq. ft.	WS	R13-2857				
EX-1	EX-1E	Extruder Unit	2010	20 tons/hr	FE	6.10	20 tph	10000 tpy	8760.00	
OS-1X	OS-1XE	Briquette Stockpile	2010	5,000 sq. ft.	None	R13-2861				
PT-1	PT-1E	Pelletizing Unit	2010	6 tons/hr	FE	R13-2861	6 tph	10000 tpy	8760.00	0.00
OS-1P	OS-1PE	Pellet Stockpile	2010	5,000 sq. ft.	None	R13-2861				
H1-M	H1-M	Crusher Hopper	2014	400 tpy	PE	R13-3217	400 tph	143000	8760.00	6.58
F1-M	F1-M	Grizzly Feeder	2014	400 tpy	PE+WS	R13-3217				
BC1-M	BC1-M	Belt Conveyor/Top Deck Transfer Belt	2014	400 tpy	PE	R13-3217				
CR1-M	CR1-M	Horizontal Impact Crusher; 271 hp	2014	400 tpy	FE+WS	R13-3217				
BC2-M	BC2-M	Oversize Recirculation Belt	2014	400 tpy	PE	R13-3217				
MP-BC3-M	BC3-M	Belt Conveyor	2014	400 tpy	PE+WS	R13-3217				
S1-M	S1-M	Bottom Deck Belt	2014	400 tpy	PE	R13-3217				
SC-01A	SC-01A	Barge Loadout Screen/Diesel Engine	2012	250 TPH	FE	4.1-18- 6.1-12-21-				
SC-01B	SC-01B	Water Jig Screen	2012	200 TPH	FE/WS	4.1-18				
BTSC-01	BTSC-01	Bivitech Screen/Diesel Engine	2009	150 TPH	FE	4.1.18-19	150.00	143000	8760.00	1.04

RBSC-01	RBSC-01	Rebel Screen #1	2012	150 TPH	FE	4-1-18				
RBSC-02	RBSC-02	Rebel Screen #2	2012	150 TPH	FE	4-1-18				
RBCR-01	RBCR-01	Rebel Crusher	2012	150 TPH	FE	4-1-18				
CR-01B	CR-01B	Water Jig Crusher	2012	200 TPH	FE/WS	4-1-18				
BC1A	BC1A	Belt Conveyor	2012	250 TPH	PE	R13-2857, 4.1.1, 6.1	250 TPH	143000	8760.00	0.00
BC2A	BC2A	Belt Conveyor	2012	250 TPH	PE		250 TPH	143000	8760.00	0.00
BC1B	BC1B	Belt Conveyor	2012	200 TPH	PE		200 TPH	143000	8760.00	0.00
BC2B	BC2B	Belt Conveyor	2012	200 TPH	PE		200 TPH	143000	8760.00	0.00
BC1C	BC1C	Belt Conveyor	2009	150 TPH	None		150 TPH	143000	8760.00	0.00
BC2C	BC2C	Belt Conveyor	2009	150 TPH	None		150 TPH	143000	8760.00	0.00
BC1D	BC1D	Belt Conveyor	2012	150 TPH	PE		150 TPH	143000	8760.00	0.00
BC2D	BC2D	Belt Conveyor	2012	150 TPH	PE		150 TPH	143000	8760.00	0.00
OCS1	OCS1	Concentrate Stockpile	2012	5,000 Ton	PE	6.2.3	n/a	55000 tpy	8760.00	0.00
OCS2	OCS2	Middlings Stockpile	2012	5,000 Ton	PE		n/a	55000 tpy	8760.00	0.00
OCS3	OCS3	Slag Stockpile	2012	5,000 Ton	PE		n/a	55000 tpy	8760.00	0.00
H1	H1	Hopper	2011	150 tph	PE	R13-2857B	400 tph	143000	8760.00	0.00
PF	2E	Pan Feeder	2011	150 tph	FE+BH	R13-2857B	150 tph			
CS1	2E	Screen No. 1	2014	150 tph	FE+BH	R13-2857D	150 tph			
CC1	CC1	Crusher No. 1	2014	120 tph	FE+BH	R13-2857D	120 tph			
BC1	1E	Conveyor No. 1	2011	120 tph	FE+BH	R13-2857B	120 tph			
BC2	BC2	Conveyor No. 2	2011	120 tph	FE+BH	R13-2857B	120 tph			
BC3	BC3	Conveyor No. 3	2011	120 tph	FE+BH	R13-2857B	120 tph			
CS2	1E	Screen No. 2	2011	120 tph	PE+BH	R13-2857B	120 tph			
BC4	BC4	Conveyor No. 4	2011	60 tph	FE	R13-2857B	60 tph			
CC2	CC2	Crusher No. 2	2014	60 tph	FE+BH	R13-2857D	60 tph			
CS3	CS3	Screen 3 / Terex Screener	2014	60 tph	FE+BH	R13-2857D	60 tph			
BC5	BC5	Conveyor No. 5	2014	60 tph	FE+BH	R13-2857D	60 tph			
H1	H1	Hopper	2015	3.75 tons/hr	PE	R13-3244T	3.75 tons/hr	32850	8760.00	
BC-1	BC-1	Belt Conveyor	2015	3.75 tons/hr	PE	R13-3244T	3.75 tons/hr	32850	8760.00	0.00
H2	H2	Charge Hopper	2015	3.75 tons/hr	PE	R13-3244T	3.75 tons/hr	32850	8760.00	
F1	EP1	Induction Furnace	2015	3.75 tons/hr	BH-1	R13-3244T	3.75 tons/hr	32850	8760.00	0.00

Criteria Pollutants PPH							Criteria Pollutants TPY						
Nitrogen Oxides (NOX) PPH	Lead (Pb) PPH	Particulate Matter (PM2.5) PPH	Particulate Matter (PM10) PPH	Total Particulate Matter (TSP) PPH	Sulfur Dioxide (SO2) PPH	Volatile Organic Compounds (VOC) PPH	Carbon Monoxide (CO) TPY	Nitrogen Oxides (NOX) TPY	Lead (Pb) TPY	Particulate Matter (PM2.5) TPY	Particulate Matter (PM10) TPY	Total Particulate Matter (TSP) TPY	Sulfur Dioxide (SO2) TPY
1.64	0.00	4.73	4.73	4.73	243.46	51.30	420.93	7.19	0.00	20.750	20.750	20.750	1067.78
0.84	0.00	4.73	4.73	4.73	89.44	18.46	359.90	3.68	0.00	20.750	20.750	20.750	391.72
0.84	0.00	10.06	10.06	10.06	111.93	24.15	365.20	3.68	0.00	44.060	44.060	44.060	490.24
0.00	0.00	0.44	0.44	0.44	0.19	0.19	0.19	0.00	0.00	0.000	0.000	0.000	0.00
0.10	0.00	4.47	4.47	4.47	0.07	0.00	0.21	0.44	0.00	19.570	19.570	19.570	0.30
0.00	0.00	0.44	0.44	0.44	0.00	0.00	0.00	0.00	0.00	1.930	1.930	1.930	0.00
0.00	0.00	0.02	0.02	0.05	0.00	0.00	0.00	0.00	0.00	0.099	0.099	0.221	0.00
0.00	0.00	0.06	0.06	0.13	0.00	0.00	0.00	0.00	0.00	0.250	0.250	0.560	0.00
0.00	0.00	0.15	0.15	0.34	0.00	0.00	0.00	0.00	0.00	0.680	0.680	1.500	0.00
0.00	0.00	0.06	0.06	0.13	0.00	0.00	0.00	0.00	0.00	0.250	0.250	0.560	0.00
0.00	0.00	0.24	0.24	0.53	0.00	0.00	0.00	0.00	0.00	1.050	1.050	2.340	0.00
0.00	0.00	1.35	1.35	3.00	0.00	0.00	0.00	0.00	0.00	5.910	5.910	13.140	0.00
0.00	0.00	2.19	2.19	4.87	0.00	0.00	0.00	0.00	0.00	9.590	9.590	21.320	0.00
0.00	0.00	0.27	0.13	0.04	0.00	0.00	0.00	0.00	0.00	0.040	0.019	0.001	0.00
0.00	0.00	0.51	0.51	0.51	0.00	0.00	0.00	0.00	0.00	2.240	2.240	2.240	0.00
0.00	0.00	1.58	1.58	1.58	0.00	0.00	0.00	0.00	0.00	6.930	6.930	6.930	0.00
0.00	0.00	34.89	34.89	73.70	0.00	0.00	0.00	0.00	0.00	3.950	3.950	8.370	0.00
0.00	0.00	0.88	0.88	1.85	0.00	0.00	0.00	0.00	0.00	0.170	0.170	0.360	0.00
0.00	0.00	0.19	0.19	0.40	0.00	0.00	0.00	0.00	0.00	0.032	0.032	0.074	0.00
7.31	0.00	6.08	20.05	42.38	0.53	0.63	1.05	1.17	0.00	1.090	3.590	7.580	0.08
4.83	0.00	2.23	7.09	15.00	0.32	0.38	0.36	1.69	0.00	1.860	5.920	12.500	0.11

0.00	0.00	0.0038	0.0121	0.0255	0.0000	0.0000	0.0000	0.0000	0.0000	0.001	0.003	0.007	0.0000
0.00	0.00	0.0038	0.0121	0.0255	0.0000	0.0000	0.0000	0.0000	0.0000	0.001	0.003	0.007	0.0000
0.00	0.00	0.0030	0.0096	0.0204	0.0000	0.0000	0.0000	0.0000	0.0000	0.001	0.003	0.007	0.0000
0.00	0.00	0.0030	0.0096	0.0204	0.0000	0.0000	0.0000	0.0000	0.0000	0.001	0.003	0.007	0.0000
0.00	0.00	0.0227	0.0724	0.1530	0.0000	0.0000	0.0000	0.0000	0.0000	0.011	0.034	0.073	0.0000
0.00	0.00	0.0227	0.0724	0.1530	0.0000	0.0000	0.0000	0.0000	0.0000	0.011	0.034	0.073	0.0000
0.00	0.00	0.0023	0.0072	0.0153	0.0000	0.0000	0.0000	0.0000	0.0000	0.001	0.003	0.007	0.0000
0.00	0.00	0.0023	0.0072	0.0153	0.0000	0.0000	0.0000	0.0000	0.0000	0.001	0.003	0.007	0.0000
0.00	0.00	0.01	0.030	0.063	0.00	0.00	0.00	0.00	0.00	0.040	0.129	0.275	0.00
0.00	0.00	0.01	0.030	0.063	0.00	0.00	0.00	0.00	0.00	0.040	0.129	0.275	0.00
0.00	0.00	0.01	0.030	0.063	0.00	0.00	0.00	0.00	0.00	0.040	0.129	0.275	0.00
0.00	0.00	3.670	-1.950	-0.150	0.00	0.00	0.00	0.00	0.00	1.730	0.250	1.150	0.00
0.00	0.00	0.34	1.07	2.27	0.00	0.00	0.00	0.00	0.00	1.480	4.700	9.930	0.00
0.00	0.00	0.01	0.03	0.06	0.00	0.00	0.00	0.00	0.00	0.040	0.120	0.260	0.00

0.0000	0.0000	0.0000	0.0000	0.0000	
0.0000	0.0000	0.0000	0.0000	0.0000	
0.0000	0.0000	0.0000	0.0000	0.0000	
0.0000	0.0000	0.0000	0.0000	0.0000	
0.0000	0.0000	0.0000	0.0000	0.0000	
0.0000	0.0000	0.0000	0.0000	0.0000	
0.0000	0.0000	0.0000	0.0000	0.0000	
0.00	0.00	0.00	0.00	0.00	
0.00	0.00	0.00	0.00	0.00	
0.00	0.00	0.00	0.00	0.00	
0.00	0.00	0.00	0.00	0.00	
0.00	0.00	0.00	0.00	0.00	
0.00	0.00	0.00	0.00	0.00	

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 001-01	Emission unit name: No. 2 Furnace	List any control devices associated with this emission unit: No. 2 Baghouse
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 This is a submerged electric arc furnace used in the production of 75% FeSi ferroalloy which operates continuously. Raw materials are added to the furnace at regular intervals. Emissions from this unit are controlled by the No. 2 Baghouse.

Manufacturer: Elkem	Model number: NA	Serial number: NA
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Construction date: 1966	Installation date: 1966	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 32 MW

Maximum Hourly Throughput: 10.1 tph Production Rate	Maximum Annual Throughput: 88,476 (10.1 tph x 8,760 hr/yr) Production Rate	Maximum Operating Schedule: 8,760 hr/yr
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <input checked="" type="checkbox"/> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
---	---

Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	96.10	420.93
Nitrogen Oxides (NO _x)	1.64	7.19
Lead (Pb)	0.000007	0.00003
Particulate Matter (PM _{2.5})	4.73	20.75
Particulate Matter (PM ₁₀)	4.73	20.75
Total Particulate Matter (TSP)	4.73	20.75
Sulfur Dioxide (SO ₂)	243.46	1,067.78
Volatile Organic Compounds (VOC)	51.30	255.01
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Arsenic	0.00071	0.00031
Cadmium	0.00071	0.00031
Chromium	0.03	0.13
Manganese	0.08	0.34
Mercury	0.0012	0.0052
Nickel	0.02	0.08
Selenium	0.000071	0.00031
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
<p>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</p> <p>CO – No published emission factor for CO was found. AP-42 indicates that all CO reacts above the furnace to form CO₂. CO estimated from stack test results of 58.32 pph with a 20% buffer and production ratio of 1.37 based on actual operating rate of 7.355 tph during testing and yearly operation of 8,760 hrs/year which results in 96.10 pph and 420.93 tpy.</p> <p>NO_x – No emission factor for NO_x from ferroalloy furnaces were found. Emission factor was obtained from AP-42, 4th Edition, Table 7.13-1 for electric arc furnaces used in steel foundries.</p> <p>Total particulate matter emission factor = 344 lb/ton. Lead in baghouse dust = 25 ppm. Therefore, emission factor = 344 lb PM/ton x 0.000025 lb Pb/lb PM = 0.000160 lb/ton.</p> <p>PM₁₀ and PM_{2.5} – Conservatively assume all PM is PM₁₀ and PM_{2.5}.</p> <p>TSP – AP42</p>		

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

SO₂ – Emissions based on material balance.

Assume 97% of sulfur furnace exits to air as SO₂.

Coal used = 57,355,700 lb/yr, Avg. %S (by wt) = 0.76%, SO₂ emissions = 422.8 ton/yr

Charcoal used = 0 lb/yr, Avg. %S (by wt) = 0.10%, SO₂ emissions = 0 ton/yr

Coke used = 1,120,780 lb/yr, Avg. %S (by wt) = 0.85%, SO₂ emissions = 9.2 ton/yr

Total SO₂ emissions = 432.0 ton/yr

VOC – AP42

Total particulate matter emission factor = 344 lb/ton. Arsenic in baghouse dust = 5 ppm. Therefore, emission factor = 344 lb PM/ton x 0.000005 lb As/lb PM = 0.001720 lb/ton.

Total particulate matter emission factor = 344 lb/ton. Cadmium in baghouse dust = 5 ppm. Therefore, emission factor = 344 lb PM/ton x 0.000005 lb Cd/lb PM = 0.001720 lb/ton.

Total particulate matter emission factor = 344 lb/ton. Chromium in baghouse dust = 2000 ppm. Therefore, emission factor = 344 lb PM/ton x 0.002000 lb Cr/lb PM = 0.688000 lb/ton.

Total particulate matter emission factor = 344 lb/ton. Manganese in baghouse dust = 5500 ppm. Therefore, emission factor = 344 lb PM/ton x 0.005500 lb Mn/lb PM = 1.892000 lb/ton.

Total particulate matter emission factor = 344 lb/ton. Mercury in baghouse dust = 250 ppm. Therefore, emission factor = 344 lb PM/ton x 0.000005 lb Hg/lb PM = 0.086000 lb/ton.

Total particulate matter emission factor = 344 lb/ton. Nickel in baghouse dust = 1300 ppm. Therefore, emission factor = 344 lb PM/ton x 0.001300 lb Ni/lb PM = 0.447200 lb/ton.

Total particulate matter emission factor = 344 lb/ton. Selenium in baghouse dust = 5 ppm. Therefore, emission factor = 344 lb PM/ton x 0.000005 lb Se/lb PM = 0.001720 lb/ton.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

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Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

See Pages 19 to 21

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 001-02	Emission unit name: No. 5 Furnace	List any control devices associated with this emission unit: No. 5 Baghouse	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): This is a submerged electric arc furnace used in the production of 75% FeSi ferroalloy which operates continuously. Raw materials are added to the furnace at regular intervals. Emissions from this unit are controlled by the No. 5 Baghouse.			
Manufacturer: Lectromelt	Model number: NA	Serial number: NA	
Construction date: 1974	Installation date: 1974	Modification date(s): NA	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 20 MW			
Maximum Hourly Throughput: 5.0 tph Production Rate	Maximum Annual Throughput: 43,800 (5 tph x 8,760 hr/yr) Production Rate	Maximum Operating Schedule: 8,760 hr/yr	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? ___Yes <input checked="" type="checkbox"/> No		If yes, is it? ___Indirect Fired ___Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	82.17	359.90
Nitrogen Oxides (NO _x)	0.84	3.68
Lead (Pb)	0.00012	0.00052
Particulate Matter (PM _{2.5})	4.73	20.75
Particulate Matter (PM ₁₀)	4.73	20.75
Total Particulate Matter (TSP)	4.73	20.75
Sulfur Dioxide (SO ₂)	89.44	391.72
Volatile Organic Compounds (VOC)	18.46	80.85
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Arsenic	0.00003	0.00012
Cadmium	0.00003	0.00012
Chromium	0.01	0.05
Manganese	0.03	0.12
Mercury	0.0012	0.0052
Nickel	0.0062	0.027
Selenium	0.00003	0.00012
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

CO – No published emission factor for CO was found. AP-42 indicates that all CO reacts above the furnace to form CO₂. CO estimated from stack test result of 74.7 pph with a 10% buffer and yearly operation of 8,760 hrs/year which results in 82.17 pph and 359.90 tpy.

NO_x – No emission factor for NO_x from ferroalloy furnaces were found. Emission factor was obtained from AP-42, 4th Edition, Table 7.13-1 for electric arc furnaces used in steel foundries.

Lead – Emission factor based on stack test results which indicate 4.1 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8183 hr/yr operation, 28750 ton/yr alloy produced) and includes emissions from product casting. Lead in baghouse dust = 25 ppm. Therefore, emissions = 1.1277 lb PM/ton x 0.000025 lb PB/lb PM = 0.000028 lb/ton.

PM₁₀ and PM_{2.5} – Emission factor based on stack test results which indicate 4.1 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8183 hr/yr operation, 28750 ton/yr alloy produced) and includes emissions from product casting. Conservatively assume all PM is PM₁₀ and PM_{2.5}.

TSP – Emission factor based on stack test results which indicate 4.1 lb/hr (controlled) of particulate matter.

Emission factor was derived using actual production data for this furnace (8183 hr/yr operation, 28750 ton/yr alloy produced) and includes emissions from product casting.

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

SO₂ – Assume 97% of sulfur furnace exits to air as SO₂.

Coal used = 42,451,038 lb/yr, Avg. %S (by wt) = 0.76%, SO₂ emissions = 312.9 ton/yr

Charcoal used = 0 lb/yr, Avg. %S (by wt) = 0.10%, SO₂ emissions = 0 ton/yr

Coke used = 465,154 lb/yr, Avg. %S (by wt) = 0.85%, SO₂ emissions = 3.8 ton/yr

Total SO₂ emissions = 316.7 ton/yr

VOC – AP42

Arsenic – Emission factor based on stack test results which indicate 4.1 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8183 hr/yr operation, 28750 ton/yr alloy produced) and includes emissions from product casting. Arsenic in baghouse dust = 5 ppm. Therefore, emissions = 1.1277 lb PM/ton x 0.000005 lb As/lb PM = 0.000006 lb/ton.

Cadmium – Emission factor based on stack test results which indicate 4.1 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8183 hr/yr operation, 28750 ton/yr alloy produced) and includes emissions from product casting. Cadmium in baghouse dust = 5 ppm. Therefore, emissions = 1.1277 lb PM/ton x 0.000005 lb Cd/lb PM = 0.000006 lb/ton.

Chromium – Emission factor based on stack test results which indicate 4.1 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8183 hr/yr operation, 28750 ton/yr alloy produced) and includes emissions from product casting. Chromium in baghouse dust = 2000 ppm. Therefore, emissions = 1.1277 lb PM/ton x 0.002255 lb Cr/lb PM = 0.002255 lb/ton.

Manganese – Emission factor based on stack test results which indicate 4.1 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8183 hr/yr operation, 28750 ton/yr alloy produced) and includes emissions from product casting. Manganese in baghouse dust = 5500 ppm. Therefore, emissions = 1.1277 lb PM/ton x 0.005500 lb Mn/lb PM = 0.006202 lb/ton.

Mercury – Emission factor based on stack test results which indicate 4.1 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8183 hr/yr operation, 28750 ton/yr alloy produced) and includes emissions from product casting. Mercury in baghouse dust = 250 ppm. Therefore, emissions = 1.1277 lb PM/ton x 0.000250 lb Hg/lb PM = 0.000282 lb/ton.

Nickel - Emission factor based on stack test results which indicate 4.1 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8183 hr/yr operation, 28750 ton/yr alloy produced) and includes emissions from product casting. Nickel in baghouse dust = 1300 ppm. Therefore, emissions = 1.1277 lb PM/ton x 0.001300 Ni/lb PM = 0.001466 lb/ton.

Selenium - Emission factor based on stack test results which indicate 4.1 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8183 hr/yr operation, 28750 ton/yr alloy produced) and includes emissions from product casting. Selenium in baghouse dust = 5 ppm. Therefore, emissions = 1.1277 lb PM/ton x 0.000005 lb Se/lb PM = 0.000006 lb/ton.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

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X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

See Pages 19 to 21

Are you in compliance with all applicable requirements for this emission unit? X Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 001-03	Emission unit name: No. 7 Furnace	List any control devices associated with this emission unit: No. 7 Baghouse
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
This is a submerged electric arc furnace used in the production of either 50% or 75% FeSi ferroalloy which operates continuously. Raw materials are added to the furnace at regular intervals. Emissions from this unit are controlled by the No. 7 Baghouse.

Manufacturer: Lectromelt	Model number: NA	Serial number: NA
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Construction date: 01/01/1976	Installation date: 01/01/1976	Modification date(s): MM/DD/YYYY
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 20 MW

Maximum Hourly Throughput: 5.0 tph Production Rate	Maximum Annual Throughput: 43,800 tpy (5.0 tph x 8,760 hr/yr) Production Rate	Maximum Operating Schedule: 8,760 hr/yr
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___Yes <input checked="" type="checkbox"/> No	If yes, is it? ___Indirect Fired ___Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	83.38	365.20
Nitrogen Oxides (NO _x)	0.84	3.68
Lead (Pb)	0.00026	0.0012
Particulate Matter (PM _{2.5})	10.06	44.06
Particulate Matter (PM ₁₀)	10.06	44.06
Total Particulate Matter (TSP)	10.06	44.06
Sulfur Dioxide (SO ₂)	111.93	490.24
Volatile Organic Compounds (VOC)	24.15	105.78
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Arsenic	0.00005	0.00022
Cadmium	0.00005	0.00022
Chromium	0.02	0.09
Manganese	0.06	0.25
Mercury	0.0026	0.011
Nickel	0.013	0.058
Selenium	0.00005	0.00022
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

CO – No published emission factor for CO was found. AP-42 indicates that all CO reacts above the furnace to form CO₂. CO estimated from stack test result of 75.8 pph with a 10% buffer and yearly operation of 8,760 hrs/year which result in 83.38 pph and 365.20 tpy.

NO_x - No emission factor for NO_x from ferroalloy furnaces were found. Emission factor was obtained from AP-42, 4th Edition, Table 7.13-1 for electric arc furnaces used in steel foundries.

Lead – Emission factor based on stack test results which indicate 6.6 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8181 hr/yr operation, 22550 ton/yr alloy produced) and includes emissions from product casting. Lead in baghouse dust = 0.000025 ppm. Therefore, 2.395 lb PM/ton x 0.000025 lb Pb/lb PM = 0.000060 lb/ton.

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

PM10 and PM2.5 – Emission factor based on stack test results which indicate 6.6 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8181 hr/yr operation, 22550 ton/yr alloy produced) and includes emissions from product casting. Conservatively assume all PM is PM10 and PM2.5.

TSP – Emission factor based on stack test results which indicate 6.6 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8181 hr/yr operation, 22550 ton/yr alloy produced) and includes emissions from product casting.

SO₂ – Assume 97% of sulfur present in coal is emitted to the air as SO₂.

Coal used = 40,234,948 lb/yr, Avg. %S (by wt) = 0.76%, SO₂ emissions from coal – 296.6 ton/yr

Charcoal used = 0 lb/yr, Avg. %S (by wt) = 0.10%, SO₂ emissions = 0 ton/yr

Coke used = 461,841 lb/yr, Avg. %S (by wt) = 0.85%, SO₂ emissions = 3.8 ton/yr

Total SO₂ emissions = 300.4 ton/yr

VOC – AP42

Arsenic – Emission factor based on stack test results which indicate 6.6 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8181 hr/yr operation, 22550 ton/yr alloy produced) and includes emissions from product casting. Emissions from Arsenic = 2.395 lb PM/ton x 0.000005 lb As/lb PM = 0.000012 lb As/ton.

Cadmium – Emission factor based on stack test results which indicate 6.6 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8181 hr/yr operation, 22550 ton/yr alloy produced) and includes emissions from product casting. Emissions from Cadmium = 2.395 lb PM/ton x 0.000005 lb Cd/lb PM = 0.000012 lb Cd/ton.

Chromium - Emission factor based on stack test results which indicate 6.6 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8181 hr/yr operation, 22550 ton/yr alloy produced) and includes emissions from product casting. Emissions from Chromium = 2.395 lb PM/ton x 0.002000 lb Cr/lb PM = 0.004790 Cr/ton.

Manganese - Emission factor based on stack test results which indicate 6.6 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8181 hr/yr operation, 22550 ton/yr alloy produced) and includes emissions from product casting. Emissions from Manganese = 2.395 lb PM/ton x 0.005500 lb Mn/lb PM = 0.013173 lb Mn/ton.

Mercury - Emission factor based on stack test results which indicate 6.6 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8181 hr/yr operation, 22550 ton/yr alloy produced) and includes emissions from product casting. Emissions from Mercury = 2.395 lb PM/ton x 0.000250 lb Hg/lb PM = 0.000599 lb Hg/ton.

Nickel – Emission factor based on stack test results which indicate 6.6 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8181 hr/yr operation, 22550 ton/yr alloy produced) and includes emissions from product casting. Emissions from Nickel = 2.395 lb PM/ton x 0.001300 lb Ni/lb PM = 0.003114 lb Ni/ton.

Selenium - Emission factor based on stack test results which indicate 6.6 lb/hr (controlled) of particulate matter. Emission factor was derived using actual production data for this furnace (8181 hr/yr operation, 22550 ton/yr alloy produced) and includes emissions from product casting. Emissions from Selenium = 2.395 lb PM/ton x 0.002000 lb Se/lb PM = 0.004790 lb Se/ton.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Pages 13 to 18

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Pages 19 to 21

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Requirement
1	45CSR§§7-3.1 and 3.2 40CFR§3.1653, and 45CSR34	4.1.1	Opacity	No person shall cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any process source operation which is greater than twenty (20) percent opacity, except for smoke and/or particulate matter emitted from any process source operation which is less than forty (40) percent opacity for any period or periods aggregating no more than five (5) minutes in any sixty (60) minute period. Compliance with this limit shall demonstrate compliance with the less stringent limitation of 40 CFR §63.1653.
2	45CSR§§7-4.3.	4.1.2	Dilution Prohibition	No person shall circumvent the provisions of 45CSR7 by adding additional gas to any exhaust or group of exhausts for the purpose of reducing the stack gas concentration.
3	45CSR§7-4.7.a..	4.1.3	Regulation 7 Exemption	Type 'b' duplicate source operations whose air pollution control equipment efficiency is a minimum of ninety-nine percent (99%) by weight and whose total process weight rate is less than two hundred fifty thousand (250,000) pounds per hour shall be exempted from the requirements of 45CSR§7-4.1 provided that smoke emitted into the open air from any such duplicate source operation is less than twenty percent (20%) opacity.
4	45CSR§7-4.12.	4.1.4.	Stack Requirement	Any stack serving any process source operation or air pollution control equipment on any process source operation shall contain flow straightening devices or a vertical run of sufficient length to establish flow patterns consistent with acceptable stack sampling procedures.
5	45CSR§7-4.13.	4.1.5.	HAP	Potential Hazardous Material Emissions—Persons responsible for manufacturing processing source operations from which hazardous particulate matter material may be emitted such as, but not limited to, lead, arsenic, beryllium and other such materials shall give the utmost care and consideration to the potential harmful effects of the emissions resulting from such activities. Evaluations of these facilities as to adequacy, efficiency and emission potential will be made on an individual basis by the Director working in conjunction with other appropriate governmental agencies.
6	45CSR§7-5.1	4.1.6.	Minimization of Fugitive PM	No person shall cause, suffer, allow or permit any manufacturing process generating fugitive particulate matter to operate that is not equipped with a system, which may include, but not be limited to, process equipment design, control equipment design or operation and maintenance procedures, to minimize the emissions of fugitive particulate matter. To minimize means such system shall be installed, maintained and operated to ensure the lowest fugitive particulate matter emissions reasonably achievable.
7	45CSR§7-5.3., 40 CFR§63.1653(b), and 45CSR34	4.1.7.	4.1.1. and 4.1.6. Exclusions	Sections 4.1.1. and 4.1.6. of this permit shall not apply to particulate matter emitted from the operation of an existing ferroalloy electric submerged arc furnace during blowing taphole events, poling and oxygen lancing operations. Poling emissions shall not exceed five (5) minutes in duration during any poling operation. Compliance with this limit shall demonstrate compliance with the less stringent limitation of 40CFR§63.1653(b).
8	45CSR§10-4.1.	4.1.8.	Sulfur Dioxide Limit	No person shall cause, suffer, allow or permit the emission into the open air from any source operation an in-stack sulfur dioxide concentration exceeding 2,000 parts per million by volume from existing source operations, except as provided in subdivisions 4.1.a through 4.1.e. of 45CSR10.
9	CO-R7-E-2004-13, Condition III.4.	4.1.9.	40 CFR63, XXX	Within ninety (90) days after startup of any furnace, the company shall be in compliance with all provisions set forth in 40CFR Part 63, Subpart XXX – National Emission Standards for Ferromanganese and Silicomanganese Production.
10	CO-R7-E-2004-13, Condition III.10.	4.1.10.	Furnace 9 Restart	Prior to restarting Furnace #9, the company shall apply for and obtain a Rule 13 permit.

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Requirement
11	40CFR§63.1652(b) and 45CSR34	4.1.11.	PM Limits	No owner or operator shall cause to be discharged into the atmosphere from any existing open submerged arc furnace exhaust gases (including primary and tapping) containing particulate matter in excess of the following: Emission Unit ID 001-01; Furnace ID No. 2; Ferromanganese Production 29.8; Silicomanganese Production 35.9 Emission Unit ID 001-02; Furnace ID No. 5; Ferromanganese Production 21.7; Silicomanganese Production 27.2 Emission Unit ID 001-03; Furnace ID No. 7; Ferromanganese Production 21.7; Silicomanganese Production 27.2
12	CO-R7-95-13, Conditions 7.b.1.A. and B. and 40CFR§63.1652(b) and 45CSR34	4.2.1.	Visible Emissions	The permittee shall conduct visual emission (VE) observations in accordance with Sections 3.2.1. and 3.2.2. of this permit. a. Visible emissions observations on the No. 5 and No. 7 furnace baghouse are not required during any shift in which proper observer location cannot be achieved; b. For each incident during daylight hours where any furnace by-pass cap is opened, regardless of furnace power input or operations status, VE observations shall be initiated no later than ten (10) minutes from the time such by-pass caps are opened and shall continue for at least four (4) hours, until such time as the by-pass caps are closed, or VE observations of the by-pass cap are 10% or less for at least ten minutes, whichever occurs first.
13	CO-R7-95-13, Condition 7.b.4. and 40CFR§63.1657(a)(2)(i). and 45CSR34	4.2.2.	Recording	The permittee shall continue to calibrate, maintain, and operate instrumentation to continuously monitor and record the following: a. Power input to each furnace b. Current or power input and winding temperature for each furnace baghouse fan motor. c. Pressure drop across each furnace baghouse fan. Compliance with this limit shall demonstrate compliance with the less stringent limitation of 40CFR§63.1657(a)(2)(i).
14	40CFR§63.1656(d) and 45CSR34	4.2.3.	Compliance demonstration with opacity standards	Compliance demonstration with opacity standards. a. 1. The owner or operator must conduct initial opacity observations for the shop building to demonstrate compliance with the applicable opacity standards according to 40CFR§63.6(h)(5), which addresses the conduct of opacity or visible emission observations. 2. In conducting the opacity observations of the shop building, the observer must limit his or her field of view to the area of the shop building roof monitor that corresponds to the placement of the affected submerged arc furnaces. 3. The owner or operator must conduct the opacity observations according to EPA Method 9 of 40CFR part 60, appendix A, for a minimum of 60 minutes. b. 1. When demonstrating initial compliance with the shop building opacity standard, as required by Section 4.2.1.a.1. of this permit, the owner or operator must simultaneously establish parameter values for one of the following: The control system fan motor amperes and all capture system damper positions, the total volumetric flow rate to the air pollution control device and all capture system damper positions, or volumetric flow rate through each separately ducted hood that comprises the capture system. 2. The owner or operator may petition the Administrator to reestablish these parameters whenever he or she can demonstrate to the Administrator's satisfaction that the submerged arc furnace operating conditions upon which the parameters were previously established are no longer applicable. The values of these parameters determined during the most recent demonstration of compliance must be maintained at the appropriate level for each applicable period. c. The owner or operator must demonstrate continuing compliance with the opacity standards by following the monitoring requirements specified in Section 4.2.4. of this permit and the reporting and recordkeeping requirements specified in Sections 3.5.15.b.c. and 3.4.5.b. of this permit.

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Requirement
15	40CFR§63.1657(c) and 45CSR34	4.2.4.	Shop Opacity	<p>The owner or operator subject to the opacity standards in 40CFR§63.1653 must comply with one of the monitoring options in paragraphs a., b., or c. below. The selected option must be consistent with that selected during the initial performance test described in Section 4.2.3.b. of this permit. Alternatively, the owner or operator may use the provisions of 40CFR§63.8(f) to request approval to use an alternative monitoring method.</p> <p>a. The owner or operator must check and record the control system fan motor amperes and capture system damper positions once per shift.</p> <p>b. The owner or operator must install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood.</p> <p>c. The owner or operator must install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate at the inlet of the air pollution control device and must check and record the capture system damper positions once per shift.</p> <p>d. The flow rate monitoring devices must meet the following requirements:</p> <ol style="list-style-type: none"> 1. Be installed in an appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. 2. Have an accuracy ± 10 percent over its normal operating range and be calibrated according to the manufacturer's instructions. <p>e. The Administrator may require the owner or operator to demonstrate the accuracy of the monitoring device(s) relative to Methods 1 and 2 of 40CFR part 60, appendix A.</p> <p>f. Failure to maintain the appropriate capture system parameters (fan motor amperes, flow rate, and/or damper positions) establishes the need to initiate corrective action as soon as practicable after the monitoring excursion in order to minimize excess emissions.</p> <p>g. Failure to monitor or failure to take corrective action under the requirements of Section 4.2.4. of this permit is a violation of the general duty to operate in a manner consistent with good air pollution control practices that minimizes emissions per 40CFR§63.6(e)(1)(i).</p>
16	45CSR§10-8.1.	4.3.1.	Sulfur Dioxide Limit	The permittee shall demonstrate compliance with Section 4.1.8. of this permit by periodic testing in accordance with 40CFR Part 60, Appendix A, Method 6 or other equivalent EPA testing method approved by the Director and the approved monitoring plan (See Appendix B).
17	CO-R7-E-2004.13, Condition III.4., 40CFR§§63.1658(d) and (e), 40CFR§63.7, and 45CSR34	4.3.2.	Stack Testing 40CFR63, Subpart XXX	Stack tests in accordance with 40CFR Part 63, Subpart XXX shall be performed within ninety (90) days of startup of any furnace. At least sixty (60) days prior to conducting stack tests, a test protocol shall be submitted to DAQ outlining test methodologies, operating conditions, port locations, and any other information deemed necessary by DAQ. Compliance with these limits shall demonstrate compliance with the less stringent limitations of 40CFR§§63.1658(d) and (e), and 40CFR§63.7.
18	CO MM-06-001, Order for Compliance – Air Quality, Condition 5.	4.3.3.	Stack Test Protocol	Within 45 days of initiating furnace operations, the permittee will submit a stack testing plan for the operating furnace(s) at the facility.
19	CO MM-06-001, Order for Compliance – Air Quality, Condition 6.	4.3.4.	Stack Testing	Within 180 days of initiating furnace operations, the permittee will conduct stack testing for PM, NO _x , SO _x , VOCs and CO for all operating furnaces at the facility.

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Requirement
20	40CFR§§63.1656(c)(1), (2), (3)(ii), and 45CSR34	4.3.5.	Compliance Demonstration with the Emissions Standards	<p>Compliance demonstration with the emissions standards.</p> <p>a. The owner or operator must conduct an initial performance test for air pollution control devices or vent stacks subject to Section 4.1.11. of this permit to demonstrate compliance with the applicable emission standards.</p> <p>b. The owner or operator must conduct annual performance tests for the air pollution control devices and vent stacks associated with the submerged arc furnaces, with the exception of any air pollution control devices that serve tapping emissions combined with non-furnace emissions, such as equipment associated with crushing and screening. Also excluded are air pollution control devices that serve dedicated non-furnace emissions, such as equipment associated with crushing and screening. The results of these annual tests will be used to demonstrate compliance with the emission standards in Section 4.1.11. of this permit, as applicable.</p> <p>c. Following development, and approval, if required, of the site-specific test plan, the owner or operator must conduct a performance test for each air pollution control device or vent stack to measure particulate matter and determine compliance with the applicable standard.</p> <p>An owner or operator of sources subject to the particulate mass rate standards in Section 4.1.11. of this permit must determine compliance as follows:</p> <ol style="list-style-type: none"> 1. Determine the particulate matter concentration and volumetric flow rate using Method 5 or 5D, as applicable. 2. Compute the mass rate (E_M) of particulate matter for each run using the following equation: $EM = \frac{\left[\sum_{i=1}^N C_{si} Q_{sdi} \right]}{K}$ <p>Where: E_M = mass rate of particulate matter, kg/hr (lb/hr). N = total number of exhaust streams at which emissions are quantified. C_{si} = concentration of particulate matter from exhaust stream "i", mg/dscm (gr/dscf). Q_{sdi} = volumetric flow rate of effluent gas from exhaust stream "i", dscm/hr (dscf/hr) K = conversion factor, 1×10^6 mg/kg (7,000 gr/lb).</p> <ol style="list-style-type: none"> 3. Compliance is demonstrated if the average of the mass rates for the three runs comprising the performance test does not
21	CO-R7-95-13, Conditions 7.b.3.	4.4.1.	Recordkeeping	Records of the visible emission checks conducted in accordance with Section 4.2.1. of this permit shall be maintained in accordance with Section 3.2.2. of this permit.

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Requirement
22	CO-R7-95-13, Condition 7.b.2.A.	4.4.2.	Recordkeeping	The permittee shall record on a daily basis: a. During each incident of by-pass cap usage or where any visual emissions are observed from such by-pass cap, the permittee shall record the following information: i. Exact time that the by-pass cap was opened; ii. Exact time that the by-pass cap was closed; iii. Cause or causes leading to the by-pass cap usage; iv. Actions taken to prevent recurrence of cause or causes leading to by-pass cap usage; v. Reports of any citizen complaints filed with or received by the permittee; vi. Power input to the furnace.
23	CO-R7-95-13, Condition 7.b.5.	4.4.3.	Fan Curve Record	The permittee shall maintain on file at the facility a permanent record of the fan performance curve or representative fan performance curve prepared for a specific temperature for each furnace baghouse fan.
24	CO-R7-95-13, Condition 7.b.6.	4.4.4.	Log of "blowing tap holes," poling, and oxygen lancing	The permittee shall maintain a certified log of the time, duration and furnace number of all "blowing tap holes," "poling," and "oxygen lancing" at each furnace. This log must be made available upon request of any representative of the Division of Air Quality and must be retained for five (5) years.
25	CO-R7-E-2004.13, Condition III.11.	4.5.1	Restart of Furnace Notification	The permittee shall notify DAQ at least 48 hours prior to restarting any furnace at the facility.
26	CO MM-06-001, Order for Compliance – Air Quality, Condition 2.	4.5.2.	Restart of Furnace Notification	The permittee will provide notice to the DAQ no less than 5 days prior to initial operation of any furnace at the facility.
27	CO MM-06-001, Order for Compliance – Air Quality, Condition 7.	4.5.3.	Stack Test Report	Within 60 days of completing stack testing, the permittee will submit a report of stack testing on all furnaces operating at the facility.
28	CO MM-06-001, Other Provisions, Condition 3.	4.5.4.	CO 1-2006 MM	If any event occurs which causes delay in the achievement of the requirements of Consent Order 1-2006 MM, the permittee shall have the burden of proving that the delay was caused by circumstances beyond its reasonable control which could not have been overcome by due diligence (i.e., force majeure). Force majeure shall not include delays caused or contributed to by the lack of sufficient funding. Within three (3) working days after the permittee becomes aware of such a delay, notification shall be provided to the Director/Chief Inspector and shall, within ten (10) working days of initial notification, submit a detailed written explanation of the anticipated length and cause of the delay, the measures taken and/or to be taken to prevent or minimize the delay, and a timetable by which the permittee intends to implement these measures. If the Director agrees that the delay has been or will be caused by circumstances beyond the reasonable control of the permittee (i.e., force majeure), the time for performance hereunder shall be extended for a period of time equal to the delay resulting from such circumstances. A force majeure amendment granted by the Director shall be considered a binding extension of this Order and of the requirements herein. The determination of the Director shall be final and not subject to appeal.

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Requirement
29	45CSR§30-4.3.h.1.c.	4.6.1.	Test Protocol	The permittee shall submit a test protocol to DAQ in accordance with Section 4.3.2. of this permit within 30 days of the effective date of the Title V Permit.
30	45CSR§30-4.3.h.1.c.	4.6.2.	Stack Test	The permittee shall conduct stack tests in accordance with Sections 4.3.2. and 4.3.5. of this permit within 90 days of the effective date of the Title V Permit.
31	45CSR§30-4.3.h.1.c	4.6.3.	Stack Testing Plan	The permittee shall submit a stack testing plan for the operating furnace(s) at the facility in accordance with Section 4.3.3. of this permit within 45 days of the effective date of the Title V Permit.
32	45CSR§30-4.3.h.1.c	4.6.4.	Stack Test	The permittee shall conduct stack tests for PM, NOx, SOx, VOCs and CO for all operating furnaces at the facility in accordance with Section 4.3.4. of this permit within 180 days of the effective date of the Title V Permit.

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Method of Compliance
1	45CSR§§7-3.1 and 3.2 40CFR§3.1653, and 45CSR34	4.1.1	Opacity	Opacity Testing as required.
2	45CSR§§7-4.3.	4.1.2	Dilution Prohibition	NA
3	45CSR§7-4.7.a..	4.1.3	Regulation 7 Exemption	NA
4	45CSR§7-4.12.	4.1.4.	Stack Requirement	NA
5	45CSR§7-4.13.	4.1.5.	HAP	NA
6	45CSR§7-5.1	4.1.6.	Minimization of Fugitive PM	NA
7	45CSR§7-5.3., 40 CFR§63.1653(b), and 45CSR34	4.1.7.	4.1.1. and 4.1.6. Exclusion 5	NA
8	45CSR§10-4.1.	4.1.8.	Sulfur DioxideLimit	Regulation 10 Monitoring Plan Required
9	CO-R7-E-2004-13, Condition III.4.	4.1.9.	40CFR63, Subpart XXX	Compliance with 40CFR63, Subpart XXX, within 90 days of start up.
10	CO-R7-E-2004-13, Condition III.10.	4.1.10.	Furnace 9 Restart	Permit required to restart Furnace No. 9.
11	40CFR§63.1652(b) and 45CSR34	4.1.11.	PM Limits	Stack testing as required.
12	CO-R7-95-13, Conditions 7.b.1.A. and B. and 40CFR§63.1652(b) and 45CSR34	4.2.1.	Visible Emissions	Conduct VE observations as required.
13	CO-R7-95-13, Condition 7.b.4. and 40CFR§63.1657(a)(2)(i). and 45CSR34	4.2.2.	Recording	Calibrate, maintain, and operate instruments to continuously monitor and record power input to each furnace, current or power input and winding temperature for baghouse for motor and pressure drop across the baghouses.
14	40CFR§63.1656(d) and 45CSR34	4.2.3.	Compliance Demonstration with Opacity Standards	Conduct VE/opacity testing as required.

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Method of Compliance
15	40CFR§63.1657(c) and 45CSR34	4.2.4.	Shop Opacity	40CFR63.1653 monitoring.
16	45CSR§10-8.1.	4.3.1.	Sulfur Dioxide Limit	Sulfur monitoring and periodic testing.
17	CO-R7-E-2004.13, Condition III.4., 40CFR§§63.1658(d) and (e), 40CFR§63.7, and 45CSR34	4.3.2.	Stack Testing 40CFR63, Subpart XXX	40CFR63, Subpart XXX stack testing after startup.
18	CO MM-06-001, Order for Compliance – Air Quality, Condition 5.	4.3.3.	Stack Test Protocol	Stack test plan submission.
19	CO MM-06-001, Order for Compliance – Air Quality, Condition 6.	4.3.4.	Stack Testing	Stack test after initiating furnace operations.
20	40CFR§§63.1656(c)(1), (2), (3)(ii), and 45CSR34	4.3.5.	Compliance Demonstration with the Emissions Standards	Stack testing/performance test.
21	CO-R7-95-13, Conditions 7.b.3.	4.4.1.	Recordkeeping	VE observations and records.
22	CO-R7-95-13, Condition 7.b.2.A.	4.4.2.	Recordkeeping	Daily required records for by-pass cap.
23	CO-R7-95-13, Condition 7.b.5.	4.4.3.	Record Fan Curve	Record of fan performance curve on site.
24	CO-R7-95-13, Condition 7.b.6.	4.4.4.	Log of “blowing tap holes,” poling, and oxygen lancing	Certified log of time, duration, and furnace number for blowing tap holes, poling, and oxygen lancing at each furnace.
25	CO-R7-E-2004.13, Condition III.11.	4.5.1	Restart of Furnace Notifications	Restart notifications.
26	CO MM-06-001, Order for Compliance – Air Quality, Condition 2.	4.5.2.	Restart of Furnace Notifications	Restart notifications.

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Method of Compliance
27	CO MM-06-001, Order for Compliance – Air Quality, Condition 7.	4.5.3.	Stack Test Report	Stack test report required.
28	CO MM-06-001, Other Provisions, Condition 3.	4.5.4.	CO 1-2006MM	Submit as needed updates on CO MM-06-001.
29	45CSR§30-4.3.h.1.c.	4.6.1.	Test Protocol	Submit test protocol for stack testing.
30	45CSR§30-4.3.h.1.c.	4.6.2	Stack Test	Stack Testing.
31	45CSR§30-4.3.h.1.c	4.6.3.	Stack Testing Plan	Stack Testing Plan.
32	45CSR§30-4.3.h.1.c	4.6.4.	Stack Test	Conduct Stack Testing: Parameters.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 00A-01	Emission unit name: Product Casting Operations	List any control devices associated with this emission unit: Baghouses
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 This emission unit quantifies emissions from the casting of molten ferroalloy product. Casting is carried out on four large casting wheels; one dedicated to each of the four submerged electric arc furnaces. Emissions from casting operations are controlled by the same baghouses used to control emissions from the furnaces.

Manufacturer: NA	Model number: NA	Serial number: NA
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Construction date: NA	Installation date: NA	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
 20 tph and 165,367 tpy

Maximum Hourly Throughput: 20 tpy	Maximum Annual Throughput: 165,367 tpy	Maximum Operating Schedule: 8,760 hr/yr
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <input checked="" type="checkbox"/> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.44	0.19
Particulate Matter (PM ₁₀)	0.44	0.19
Total Particulate Matter (TSP)	0.44	0.19
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

PM₁₀ – Emission factor for ferroalloy casting was obtained from the Ohio EPA Study, “Reasonably Available Control Measures for Fugitive Dust Sources”, September 1980, Ohio Environmental Protection Agency, Division for Air Pollution Control. Emission factor is as follows: 2.4 lb/ton processed. Conservatively assume PM_{2.5} is equal to PM₁₀.

Emissions from casting are fugitive within the building and, based on observation and engineering judgment, approximately 20% of emissions are released through the roof monitors. The remaining 80% is captured by the baghouses. Therefore, emission factor is as follows: 2.4 lb/ton x (1-0.80) = 0.48 lb/ton. Conservatively assume all PM is PM₁₀.

TSP – Emission factor for ferroalloy casting was obtained from the Ohio EPA Study “Reasonably Available Control Measures for Fugitive Dust Sources”, September 1980, Ohio Environmental Protection Agency, Division for Air Pollution Control. Emission factor is as follows: 2.4 lb/ton processed.

Emissions from casting are fugitive within the building and, based on observation and engineering judgment, approximately 20% of emissions are released through the roof monitors. The remaining 80% is captured by the baghouses. Therefore, emission factor is as follows: 2.4 lb/ton x (1-0.80) = 0.48 lb/ton. Conservatively assume all PM is PM₁₀.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Pages 67 and 68

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Page 69

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 00C-01	Emission unit name: Ladle Burners	List any control devices associated with this emission unit: NA	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Ladle burners are used to heat/reheat ladles containing molten ferroalloy. The ladle burners fire No. 2 oil.			
Manufacturer: NA	Model number: NA	Serial number: NA	
Construction date: NA	Installation date: NA	Modification date(s): NA	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 140 MMBtu/hr			
Maximum Hourly Throughput: 40 gph each	Maximum Annual Throughput: 44,000 gpy	Maximum Operating Schedule: 8,760 hr/yr	
<i>Fuel Usage Data (fill out all applicable fields)</i>			
Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		If yes, is it? <input type="checkbox"/> Indirect Fired <input checked="" type="checkbox"/> Direct Fired	
Maximum design heat input and/or maximum horsepower rating: 140 MMBtu/hr		Type and Btu/hr rating of burners: 140 MMBtu/hr	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. No. 2 Fuel Oil			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
No. 2 Fuel Oil	0.05%	NA	~140MMBtu / 1,000 gal

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	0.0479	0.21
Nitrogen Oxides (NO _x)	0.10	0.44
Lead (Pb)		
Particulate Matter (PM _{2.5})	4.47	19.57
Particulate Matter (PM ₁₀)	4.47	19.57
Total Particulate Matter (TSP)	4.47	19.57
Sulfur Dioxide (SO ₂)	0.069	0.30
Volatile Organic Compounds (VOC)	0.003	0.01
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
<p>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</p> <p>PM10 – Emission factor for PM = 2 lb/1,000 gal burned 44,000 gal/yr used 50% of PM is PM-10 Therefore, PM10 emission factor = 1 lb/1,000 gal. Conservatively assume PM 2.5 is equal to PM10.</p> <p>TSP – Emission factor = 2 lb/1,000 gal burned 44,000 gal/yr used</p> <p>SO₂ – Emission factor – 124S lb/1,000 gal burned 44,000 gal/yr used S = 0.05% Emission Factor = 7.1 lb/1,000 gal burned</p> <p>VOC – Emission factor = 0.34 lb/1,000 gal burned 44,000 gal/yr used</p> <p>NO_x – Emission factor = 20 lb/1,000 gal burned 44,000 gal/yr used</p> <p>CO – Emission factor = 5 lb/1,000 gal burned 44,000 gal/yr used</p>		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Pages 67 and 68

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

See Page 69

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 002-0B	Emission unit name: Outdoor Storage Piles	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
Raw materials are stored outside of the main facility building on approximately 3 acres of land.

Manufacturer: NA	Model number: NA	Serial number: NA
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Construction date: 1952	Installation date: 1952	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 3 Acres

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760 hr/yr
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___Yes <input checked="" type="checkbox"/> ___No	If yes, is it? ___Indirect Fired ___Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.44	1.93
Particulate Matter (PM ₁₀)	0.44	1.93
Total Particulate Matter (TSP)	0.44	1.93
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

PM₁₀ – Emissions from raw material storage piles based on WV emission factor of 3.5 lb/acre/day. Emissions were calculated as follows:
Lb/hr = (3.5 lb/acre/day)(3 acres)/(24 hr/day) = 0.4375 lb/hr
Ton/yr = (3.5 lb/acre/day)(3 acres)(365 day/yr)/(2000 lb/ton) = 1.92 ton/yr
Conservatively assume PM_{2.5} is equal to PM₁₀.

TSP – Emissions from raw material storage piles based on WV emission factor of 2.5 lb/acre/day. Emissions were calculated as follows:
Lb/hr = (3.5 lb/acre/day)(3 acres)/(24 hr/day) = 0.44 lb/hr
Ton/yr = (3.5 lb/acre/day)(3 acres)(365 day/yr)/(2000 lb/ton) = 1.92 ton/yr

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No Specific Requirement.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

No Specific Requirement.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 005-01	Emission unit name: Unpaved Roads – Raw Material Delivery	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
This emission unit quantifies emissions caused by vehicle traffic occurring during raw material delivery.

Manufacturer: NA	Model number: NA	Serial number: NA
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Construction date: NA	Installation date: NA	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): NA

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760 hr/yr
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___Yes <input checked="" type="checkbox"/> ___No	If yes, is it? ___Indirect Fired ___Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.02	0.099
Particulate Matter (PM ₁₀)	0.02	0.099
Total Particulate Matter (TSP)	0.05	0.221
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

PM₁₀ – Emissions estimated using the method described in AP-42 5th Edition, Chapter 13.2.2 and assuming a 50% control efficiency since roadways are sprayed regularly to keep dust down. Particle size multiplier for PM is 0.80. Emission factor = 5.89 lb/VMT x (1-0.50) = 2.945 lb/VMT. Particle size multiplier for PM₁₀ is 0.36. Therefore, PM₁₀ emissions = (2.945 lb/hr)(0.36)/(0.80) = 1.325 lb/hr. Conservatively assume PM 2.5 is equal to PM₁₀.

TSP – Emissions estimated using the method described in AP-42 5th Edition, Chapter 13.2.2 and assuming a 50% control efficiency since roadways are sprayed regularly to keep dust down. Particle size multiplier for PM is 0.80. Emission factor is 5.89 lb/VMT x (1-0.50) = 2.945 lb/VMT.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No Specific Requirement.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

No Specific Requirement.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 005-02	Emission unit name: Unpaved Roads – Gravel Delivery	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
This emission unit quantifies emissions caused by vehicle traffic occurring during gravel delivery.

Manufacturer: NA	Model number: NA	Serial number: NA
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Construction date: NA	Installation date: NA	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): NA

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760 hr/yr
---	---	---

Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___Yes <input checked="" type="checkbox"/> ___No	If yes, is it? ___Indirect Fired ___Direct Fired
---	---

Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.06	0.25
Particulate Matter (PM ₁₀)	0.06	0.25
Total Particulate Matter (TSP)	0.13	0.56
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

PM10 – Emissions estimated using the method described in AP-42 5th Edition, Chapter 13.2.2 and assuming a 50% control efficiency since roadways are sprayed regularly to keep dust down. Particle size multiplier for PM is 0.80. Emission factor = 5.89 lb/VMT x (1-0.50) = 2.945 lb/VMT. Particle size multiplier for PM10 is 0.36. Therefore, PM10 emissions = (2.945 lb/hr)(0.36)/(0.80) = 1.325 lb/hr. Conservatively assume PM2.5 is equal to PM10.

TSP – Emissions estimated using the method described in AP-42 5th Edition, Chapter 13.2.2 and assuming a 50% control efficiency since roadways are sprayed regularly to keep dust down. Particle size multiplier for PM is 0.80. Emission factor is 5.89 lb/VMT x (1-0.50) = 2.945 lb/VMT.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No Specific Requirement.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No Specific Requirement.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 005-03	Emission unit name: Unpaved Roads –Raw Material / Stock Delivery	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
This emission unit quantifies emissions caused by vehicle traffic occurring during wood chip delivery.

Manufacturer: NA	Model number: NA	Serial number: NA
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Construction date: NA	Installation date: NA	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): NA

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760 hr/yr
---	---	---

Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___Yes <input checked="" type="checkbox"/> ___No	If yes, is it? ___Indirect Fired ___Direct Fired
---	---

Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.15	0.68
Particulate Matter (PM ₁₀)	0.15	0.68
Total Particulate Matter (TSP)	0.34	1.50
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

PM₁₀ – Emissions estimated using the method described in AP-42 5th Edition, Chapter 13.2.2 and assuming a 50% control efficiency since roadways are sprayed regularly to keep dust down. Particle size multiplier for PM is 0.80. Emission factor = 5.89 lb/VMT x (1-0.50) = 2.945 lb/VMT. Particle size multiplier for PM₁₀ is 0.36. Therefore, PM₁₀ emissions = (2.945 lb/hr)(0.36)/(0.80) = 1.325 lb/hr. Conservatively assume PM_{2.5} is equal to PM₁₀.

TSP – Emissions estimated using the method described in AP-42 5th Edition, Chapter 13.2.2 and assuming a 50% control efficiency since roadways are sprayed regularly to keep dust down. Particle size multiplier for PM is 0.80. Emission factor is 5.89 lb/VMT x (1-0.50) = 2.945 lb/VMT.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No Specific Requirement.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No Specific Requirement.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 005-04	Emission unit name: Unpaved Roads – Scrap Metal Delivery	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
This emission unit quantifies emissions caused by vehicle traffic occurring during scrap metal delivery.

Manufacturer: NA	Model number: NA	Serial number: NA
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Construction date: NA	Installation date: NA	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): NA

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760 hr/yr
---	---	---

Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___Yes <input checked="" type="checkbox"/> ___No	If yes, is it? ___Indirect Fired ___Direct Fired
---	---

Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.06	0.25
Particulate Matter (PM ₁₀)	0.06	0.25
Total Particulate Matter (TSP)	0.13	0.56
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

PM₁₀ – Emissions estimated using the method described in AP-42 5th Edition, Chapter 13.2.2 and assuming a 50% control efficiency since roadways are sprayed regularly to keep dust down. Particle size multiplier for PM is 0.80. Emission factor = 5.89 lb/VMT x (1-0.50) = 2.945 lb/VMT. Particle size multiplier for PM₁₀ is 0.36. Therefore, PM₁₀ emissions = (2.945 lb/hr)(0.36)/(0.80) = 1.325 lb/hr. Conservatively assume PM_{2.5} is equal to PM₁₀.

TSP – Emissions estimated using the method described in AP-42 5th Edition, Chapter 13.2.2 and assuming a 50% control efficiency since roadways are sprayed regularly to keep dust down. Particle size multiplier for PM is 0.80. Emission factor is 5.89 lb/VMT x (1-0.50) = 2.945 lb/VMT. Emissions estimated using the method described in AP-42 5th Edition, Chapter 13.2.2 and assuming a 50% control efficiency since roadways are sprayed regularly to keep dust down. Particle size multiplier for PM₁₀ is 0.36. Therefore, PM₁₀ emissions = (2.945 lb/hr)(0.36)/(0.80) = 1.325 lb/hr.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No Specific Requirement.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No Specific Requirement.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 005-05	Emission unit name: Unpaved Roads – Product Shipments	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
This emission quantifies emissions caused by vehicle traffic occurring during product shipments.

Manufacturer: NA	Model number: NA	Serial number: NA
Construction date: NA	Installation date: NA	Modification date(s): NA

Design Capacity (examples: furnaces - tons/hr, tanks - gallons): NA

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760 hr/yr
---	---	---

Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___Yes <input checked="" type="checkbox"/> ___No	If yes, is it? ___Indirect Fired ___Direct Fired
---	---

Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.24	1.05
Particulate Matter (PM ₁₀)	0.24	1.05
Total Particulate Matter (TSP)	0.53	2.34
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

PM₁₀ – Emissions estimated using the method described in AP-42 5th Edition, Chapter 13.2.2 and assuming a 50% control efficiency since roadways are sprayed regularly to keep dust down. Particle size multiplier for PM is 0.80. Emission factor = 5.89 lb/VMT x (1-0.50) = 2.945 lb/VMT. Particle size multiplier for PM₁₀ is 0.36. Therefore, PM₁₀ emissions = (2.945 lb/hr)(0.36)/(0.80) = 1.325 lb/hr. Conservatively assume PM_{2.5} is equal to PM₁₀.

TSP – Emissions estimated using the method described in AP-42 5th Edition, Chapter 13.2.2 and assuming a 50% control efficiency since roadways are sprayed regularly to keep dust down. Particle size multiplier for PM is 0.80. Emission factor is 5.89 lb/VMT x (1-0.50) = 2.945 lb/VMT.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No Specific Requirement.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No Specific Requirement.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 005-06	Emission unit name: Unpaved Roads – Raw Material Transfer	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
This emission unit quantifies emissions caused by vehicle traffic occurring during raw material transfer from storage piles to the facility by two trucks.

Manufacturer: NA	Model number: NA	Serial number: NA
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Construction date: NA	Installation date: NA	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): NA

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760 hr/yr
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___Yes <input checked="" type="checkbox"/> ___No	If yes, is it? ___Indirect Fired ___Direct Fired
---	---

Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	1.35	5.91
Particulate Matter (PM ₁₀)	1.35	5.91
Total Particulate Matter (TSP)	3.00	13.14
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

PM10 – Emissions estimated using the method described in AP-42 5th Edition, Chapter 13.2.2 and assuming a 50% control efficiency since roadways are sprayed regularly to keep dust down. Particle size multiplier for PM is 0.80. Emission factor = $0.98 \text{ lb/VMT} \times (1-0.50) = 0.49 \text{ lb/VMT}$. Particle size multiplier for PM10 is 0.36. Therefore, PM10 emissions = $(0.49 \text{ lb/hr})(0.36)/(0.80) = 0.2205 \text{ lb/hr}$. Conservatively assume PM2.5 is equal to PM10.

TSP – Emissions estimated using the method described in AP-42 5th Edition, Chapter 13.2.2 and assuming a 50% control efficiency since roadways are sprayed regularly to keep dust down. Particle size multiplier for PM is 0.80. Emission factor is $0.98 \text{ lb/VMT} \times (1-0.50) = 0.49 \text{ lb/VMT}$.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No Specific Requirement.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No Specific Requirement.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 005-07	Emission unit name: Unpaved Roads - Endloaders	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
This emission unit quantifies emissions caused by vehicle traffic occurring during raw material transfer by front-end loaders.

Manufacturer: NA	Model number: NA	Serial number: NA
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Construction date: NA	Installation date: NA	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): NA

Maximum Hourly Throughput: NA	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760 hr/yr
---	---	---

Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___Yes <input checked="" type="checkbox"/> ___No	If yes, is it? ___Indirect Fired ___Direct Fired
---	---

Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	2.19	9.59
Particulate Matter (PM ₁₀)	2.19	9.59
Total Particulate Matter (TSP)	4.87	21.32
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

PM10 – Emissions estimated using the method described in AP-42 5th Edition, Chapter 13.2.2 and assuming a 50% control efficiency since roadways are sprayed regularly to keep dust down. Particle size multiplier for PM is 0.80. Emission factor = $1.59 \text{ lb/VMT} \times (1-0.50) = 0.795 \text{ lb/VMT}$. Particle size multiplier for PM10 is 0.36. Therefore, PM10 emissions = $(0.795 \text{ lb/hr})(0.36)/(0.80) = 0.35775 \text{ lb/hr}$. Conservatively assume PM2.5 is equal to PM10.

TSP – Emissions estimated using the method described in AP-42 5th Edition, Chapter 13.2.2 and assuming a 50% control efficiency since roadways are sprayed regularly to keep dust down. Particle size multiplier for PM is 0.80. Emission factor is $1.59 \text{ lb/VMT} \times (1-0.50) = 0.795 \text{ lb/VMT}$.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No Specific Requirement.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No Specific Requirement.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description			
Emission unit ID number: 009-01	Emission unit name: Crushing and Screening System #1	List any control devices associated with this emission unit: Baghouses	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Crushing and Screening System #1 consists of a primary, secondary, and tertiary crushing system and screening operations used to size the ferroalloy according to buyer specifications prior to shipment. Emissions from this operation are controlled by three baghouses operating in parallel.			
Manufacturer: Gator/terex	Model number: 20x30 gator crusher Terex 5x14 Horizontal Simplicity	Serial number: NA	
Construction date: 8/2014	Installation date: 8/2014	Modification date(s): NA	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 33 tph			
Maximum Hourly Throughput: 150 tph	Maximum Annual Throughput: 26,439.3 tpy	Maximum Operating Schedule: 8,760 hr/yr	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? ___Yes <input checked="" type="checkbox"/> No		If yes, is it? ___Indirect Fired ___Direct Fired	
Maximum design heat input and/or maximum horsepower rating:		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.27	0.04
Particulate Matter (PM ₁₀)	0.128	0.019
Total Particulate Matter (TSP)	0.040	0.006
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

PM10 – Crushing System No. 1 which consists of four stages: primary crushing, secondary crushing, tertiary crushing, and screening. An emission factor was obtained for each of the two types of processes from the Ohio EPA Feasibility Study, “Reasonably Available Control Measures for Fugitive Dust Sources” (September 1980), Ohio Environmental Protection Agency, Division of Air Pollution Control. Emission factors are as follows:

7.2 lb/ton processed for each of the crushing operations

4.5 lb/ton for the screening operation

Total EF = (7.2 lb/ton) x 3 + 4.5 lb/ton = 26.1 lb/ton processed. Conservatively assume all PM is PM10 and PM2.5.

TSP - Crushing System No. 1 which consists of four stages: primary crushing, secondary crushing, tertiary crushing, and screening. An emission factor was obtained for each of the two types of processes from the Ohio EPA Feasibility Study, “Reasonably Available Control Measures for Fugitive Dust Sources” (September 1980), Ohio Environmental Protection Agency, Division of Air Pollution Control. Emission factors are as follows:

7.2 lb/ton processed for each of the crushing operations

4.5 lb/ton for the screening operation

Total EF = (7.2 lb/ton) x 3 + 4.5 lb/ton = 26.1 lb/ton processed. Conservatively assume all PM is PM10.

Particulate matter from this system is controlled by three baghouses in parallel. This stream represents one-third of the total emissions from this unit. Therefore, emission factor = (1/3) x 26.1 = 8.7 lb/ton.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Pages 67 and 68

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

See Page 69

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 009-02	Emission unit name: Crushing and Screening System #2	List any control devices associated with this emission unit: Baghouses
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
Crushing and Screening System #2 consists of a primary, secondary, and tertiary crushing system and screening operations used to size the ferroalloy according to buyer specifications prior to shipment. Emissions from this operation are controlled by two baghouses operating in parallel.

Manufacturer: NA	Model number: NA	Serial number: NA
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Construction date: NA	Installation date: NA	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 33 tph

Maximum Hourly Throughput: 33 tph	Maximum Annual Throughput: 68,742.1 tpy	Maximum Operating Schedule: 8,760 hr/yr
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___Yes <input checked="" type="checkbox"/> ___No	If yes, is it? ___Indirect Fired ___Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.51	2.24
Particulate Matter (PM ₁₀)	0.51	2.24
Total Particulate Matter (TSP)	0.51	2.24
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

PM10 – Crushing System No. 2 which consists of four stages: primary crushing, secondary crushing, tertiary crushing, and screening. An emission factor was obtained for each of the two types of processes from the Ohio EPA Feasibility Study, “Reasonably Available Control Measures for Fugitive Dust Sources” (September 1980), Ohio Environmental Protection Agency, Division of Air Pollution Control. Emission factors are as follows:

7.2 lb/ton processed for each of the crushing operations

4.5 lb/ton for the screening operation

Total EF = (7.2 lb/ton) x 3 + 4.5 lb/ton = 26.1 lb/ton processed. Conservatively assume all PM is PM10 and PM2.5.

Particulate matter from this system is controlled by two baghouses in parallel. This stream represents half of the total emissions from this unit. Therefore, emission factor = (1/2) x 26.1 = 13.05 lb/ton.

TSP - Crushing System No. 2 which consists of four stages: primary crushing, secondary crushing, tertiary crushing, and screening. An emission factor was obtained for each of the two types of processes from the Ohio EPA Feasibility Study, “Reasonably Available Control Measures for Fugitive Dust Sources” (September 1980), Ohio Environmental Protection Agency, Division of Air Pollution Control. Emission factors are as follows:

7.2 lb/ton processed for each of the crushing operations

4.5 lb/ton for the screening operation

Total EF = (7.2 lb/ton) x 3 + 4.5 lb/ton = 26.1 lb/ton processed. Conservatively assume all PM is PM10.

Particulate matter from this system is controlled by two baghouses in parallel. This stream represents one-third of the total emissions from this unit. Therefore, emission factor = (1/3) x 26.1 = 8.7 lb/ton.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Pages 67 and 68

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

See Page 69

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: 009-06	Emission unit name: Transfer Points	List any control devices associated with this emission unit: NA
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
Emissions from raw material batch drops occurring both outside in the raw material storage area and inside for materials transferred into the building. Emissions were quantified for quartz gravel, coal, wood chips, and limestone.

Manufacturer: NA	Model number: NA	Serial number: NA
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Construction date: NA	Installation date: NA	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 28 tph

Maximum Hourly Throughput: 28 tph	Maximum Annual Throughput: NA	Maximum Operating Schedule: 8,760 hr/yr
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___Yes <input checked="" type="checkbox"/> ___No	If yes, is it? ___Indirect Fired ___Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	1.58	6.93
Particulate Matter (PM ₁₀)	1.58	6.93
Total Particulate Matter (TSP)	1.58	6.93
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

PM10 – Emissions from raw material batch drops occurring both outside in the raw material storage area and inside for materials transferred into the building. Emissions were quantified for quartz gravel, coal, wood chips, and limestone using the method described in AP-42 5th Edition, Chapter 13.2.2. Emission factors were developed for each material (refer to attached spreadsheets). Conservatively assume all PM is PM10 and PM2.5.

TSP – Emissions from raw material batch drops occurring both outside in the raw material storage area and inside for materials transferred into the building. Emissions were quantified for quartz gravel, coal, wood chips, and limestone using the method described in AP-42 5th Edition, Chapter 13.2.2. Emission factors were developed for each material (refer to attached spreadsheets).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Pages 67 and 68

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Page 69

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Requirement
1	45CSR§§7-3.1 and 3.2	5.1.1.	Opacity	No person shall cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any process source operation which is greater than twenty (20) percent opacity, except for smoke and/or particulate matter emitted from any process source operation which is less than forty (40) percent opacity for any period or periods aggregating no more than five (5) minutes in any sixty (60) minute period.
2	45CSR§§7-4.1.(009-06)	5.1.2.	PM Limits	No person shall cause, suffer, allow, or permit PM to be vented into the open air from any type source operation or duplicate source operation, or from all air pollution control equipment installed on any type source operation or duplicate source operation in excess of the quantities specified in this permit. Emission Unit ID 009-06; Equipment Description, Transfer Points; Max. Allowable PM Emission Limit (lb/hr) = 31.24
3	45CSR§7-4.7.a.(009-01, 009-02, 009-03, 009-04 and 00A01).	5.1.3.	Opacity	Type 'b' duplicate source operations whose air pollution control equipment efficiency is a minimum of ninety-nine percent (99%) by weight and whose total process weight rate is less than two hundred fifty thousand (250,000) pounds per hour shall be exempted from the requirements of 45CSR§7-4.1 provided that smoke emitted into the open air from any such duplicate source operation is less than twenty percent (20%) opacity.
4	CO-R7-95-13, Condition 7.a.10.A. and CO-R7, 13, 16-93-1, Condition IV.9.	5.1.4.	Water Pressure Monitoring	The permittee shall maintain instrumentation to continuously monitor water pressures at or near each spray nozzle of the wet suppression systems for slag crushing systems. The permittee shall repair or replace any nozzle failing to provide effective flow characteristics at anytime that the slag crushing is in operation.
5	CO-R7-95-13, Condition 7.a.11.B.	5.1.5.	Soderburg Paste Prohibition	The permittee shall not employ soderburg paste to provide refractory lining for any ladle.
6	CO-R7-95-13, Condition 7.a.6.E.	5.1.6.	Repouring	All ladle to ladle repouring of molten material shall be conducted with a system to minimize fugitive emissions.
7	CO-R7-95-13, Condition 7.a.9.A.	5.1.7.	Maintenance	The permittee shall maintain the product crushing and sizing operations in good operating condition.
8	CO-R7-E-2004-13, Condition III.3.	5.1.8.	Casting Station Operations	Within sixty (60) days after restarting the facility, at least one casting station must be fully operational. The station(s) shall be used during all casting at the facility.
9	40CFR§63.1652(e)(2) and 45CSR34.	5.1.9.	Crushing and Screening Equipment.	Crushing and screening equipment. No owner or operator shall cause to be discharged into the atmosphere from any existing piece of equipment associated with crushing and screening exhaust gases containing particulate matter in excess of 0.03 gr/dscf.
10	CO-R7-95-13, Conditions 7.b.1.A. and B.	5.2.1.	VE	The permittee shall conduct visual emission (VE) observations in accordance with Sections 3.2.1. and 3.2.2 of this permit.

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Requirement
11	40CFR §§63.1656(c)(1), (3)(i) and 45CSR34	5.3.1.	Compliance Demonstration with the Emission Standards	<p>Compliance demonstration with the emission standards.</p> <p>a. The owner or operator must conduct an initial performance test for air pollution control devices or vent stacks subject to Section 5.1.9. of this permit to demonstrate compliance with the applicable emission standards.</p> <p>b. Following development, and approval, if required, of the site-specific test plan, the owner or operator must conduct a performance test for each air pollution control device or vent stack to measure particulate matter and determine compliance with the applicable standard.</p> <p>An owner or operator of sources subject to the particulate matter concentration standards in Section 5.1.9. of this permit must determine the particulate matter concentration using Method 5 or 5D, as applicable. Compliance is demonstrated if the average concentration for the three runs comprising the performance test does not exceed the standard.</p>
12	CO-R7-95-13, Conditions 7.b.3.	5.4.1.	VE	Records of the visible emission checks conducted in accordance with Section 5.2.1. of this permit shall be maintained in accordance with Section 3.2.2. of this permit.
13	CO-R7-95-13, Condition 7.b.2.c.	5.4.2.	Recordkeeping	The permittee shall record on a daily basis the hours of operation and gallons of water used in operation on the slag crushing plant.

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Method of Compliance
1	45CSR§§7-3.1 and 3.2	5.1.1.	Opacity	Conduct opacity testing as required.
2	45CSR§§7-4.1.(009-06)	5.1.2.	PM Limits	Stack testing or opacity testing as required.
3	45CSR§7-4.7.a.(009-01, 009-02, 009-03, 009-04 and 00A01).	5.1.3.	Opacity	Stack testing or opacity testing as required.
4	CO-R7-95-13, Condition 7.a.10.A. and CO-R7, 13, 16-93-1, Condition IV.9.	5.1.4.	Water Pressure Monitoring	Maintain instrumentation to continuously monitor water pressure for wet suppression system.
5	CO-R7-95-13, Condition 7.a.11.B.	5.1.5.	Soderburg Paste Prohibition	NA
6	CO-R7-95-13, Condition 7.a.6.E.	5.1.6.	Repouring	NA
7	CO-R7-95-13, Condition 7.a.9.A.	5.1.7.	Maintenance	NA
8	CO-R7-E-2004-13, Condition III.3.	5.1.8.	Casting Station Operations	NA
9	40CFR§63.1652(e)(2) and 45CSR34.	5.1.9.	Crushing and Screening Equipment	Conduct testing as required.
10	CO-R7-95-13, Conditions 7.b.1.A. and B.	5.2.1.	VE	Conduct VE observations as required.
11	40CFR§§63.1656(c)(1),(3)(i) and 45CSR34	5.3.1.	Compliance Demonstration with the Emission Standards	Conduct testing as required.
12	CO-R7-95-13, Conditions 7.b.3.	5.4.1.	VE	Maintain records of VE observations.
13	CO-R7-95-13, Condition 7.b.2.c.	5.4.2.	Recordkeeping	Record hours of operation and gallons of water used in slag crushing operations.

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	34.89	3.95
Particulate Matter (PM ₁₀)	34.89	3.95
Total Particulate Matter (TSP)	73.7	8.37
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emission factor of 0.5 lb/ton for crushing and screening and AP-42 for transfer points and open stockpiles.
Conservatively assume PM2.5 is equal to PM10.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Pages 80 to 82

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Pages 83 to 85

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: EX-1 with OS-1X	Emission unit name: Extruder Unit	List any control devices associated with this emission unit: FE/N
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
Extruder Unit EX-1 (EX-1E) with Briquette Stockpile OS-1X (OS-1XE) of 5,000 sq. ft.

Manufacturer: NA	Model number: NA	Serial number: NA
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Construction date: 2010	Installation date: 2010	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 20 tph

Maximum Hourly Throughput: 20 tph	Maximum Annual Throughput: 10,000	Maximum Operating Schedule: 8,760
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <input checked="" type="checkbox"/> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.88	0.17
Particulate Matter (PM ₁₀)	0.88	0.17
Total Particulate Matter (TSP)	1.85	0.36
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

AP-42 for transfer points and stockpiles.
Conservatively assume PM2.5 is equal to PM10.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Pages 80 to 82

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Pages 83 to 85

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: PT-1 with OS-1P	Emission unit name: Pelletizing Unit	List any control devices associated with this emission unit: FE/N
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Pelletizing Unit PT-1 (PT-1E) with Pellet Stockpile OS-1P (OS-1PE) of 5,000 sq. ft.

Manufacturer: NA	Model number: NA	Serial number: NA
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Construction date: 2010	Installation date: 2010	Modification date(s): NA
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 6 tph

Maximum Hourly Throughput: 6 tph	Maximum Annual Throughput: 10,000 tpy	Maximum Operating Schedule: 8,760
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes <input checked="" type="checkbox"/> ___ No	If yes, is it? ___ Indirect Fired ___ Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	0.191	0.032
Particulate Matter (PM ₁₀)	0.191	0.032
Total Particulate Matter (TSP)	0.404	0.074
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

AP-42 for transfer points and stockpiles.
Conservatively assume PM2.5 is equal to PM10.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Pages 80 to 82

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Pages 83 to 85

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: Various, H1-M to S1-M	Emission unit name: Crushing and Screening System H1-M, F1-M, BC1-M, CR1-M, BC2-M, BC3-M, S1-M	List any control devices associated with this emission unit: H1-M, F1-M, BC1-M, CR1-M, BC2-M, BC3-M, S1-M	
Provide a description of the emission unit (type, method of operation, design parameters, etc.): Crushing and Screening System #4 consists of a primary, secondary, and tertiary crushing system and screening operations used to size the ferroalloy according to buyer specifications prior to shipment. Emissions from this operation are controlled by full and partial enclosures and water spray.			
Manufacturer: Terex with Scania DC09 Engine	Model number: Terex with Scania DC09 Engine	Serial number: NA	
Construction date: 2014	Installation date: 2014	Modification date(s): N/A	
Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 400 tph			
Maximum Hourly Throughput: 400 tph	Maximum Annual Throughput: 143000 tpy	Maximum Operating Schedule: 8,760 hr/yr	
Fuel Usage Data (fill out all applicable fields)			
Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		If yes, is it? <input type="checkbox"/> Indirect Fired <input checked="" type="checkbox"/> Direct Fired	
Maximum design heat input and/or maximum horsepower rating: Horizontal Impact Crusher w/ 271 hp engine, Sizing Screen w/ 129 hp engine		Type and Btu/hr rating of burners:	
List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. #2 Fuel Oil			
Describe each fuel expected to be used during the term of the permit.			
Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	6.58	1.05
Nitrogen Oxides (NO _x)	7.31	1.17
Lead (Pb)	0	0
Particulate Matter (PM _{2.5})	6.08	1.09
Particulate Matter (PM ₁₀)	20.05	3.59
Total Particulate Matter (TSP)	42.38	7.58
Sulfur Dioxide (SO ₂)	.53	.08
Volatile Organic Compounds (VOC)	.63	.1
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

1 - Per Table 11.24-2 (English Units). EMISSION FACTORS FOR METALLIC MINERALS PROCESSING.

No factor is listed for crushing and screening in AP-42 Ferroalloy Section 12.4. It is assumed metallic mineral screening is equal to the metallic mineral crushing emission factor.

This is for the following equipment: Crusher Hopper, Grizzly Feeder, Belt Conveyor, Horizontal Impact Crusher w/ 271 hp engine, Belt Conveyor, Belt Conveyor, Sizing Screen w/ 129 hp engine

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Minor source NSR (45CSR13)
Section 112(d) MACT standards Subpart XXX
Section 111 NSPS Subpart OOO

See permit conditions below.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See permit conditions below.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: BTSC-01	Emission unit name: Bivitech Screen/Diesel Engine	List any control devices associated with this emission unit: FE
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Manufacturer: Bivitech	Model number: N/A	Serial number: N/A
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Construction date: 2009	Installation date: 2009	Modification date(s): N/A
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 400 tph

Maximum Hourly Throughput: 150 tph	Maximum Annual Throughput: 143000 tpy	Maximum Operating Schedule: 8,760 hr/yr
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, is it? <input type="checkbox"/> Indirect Fired <input checked="" type="checkbox"/> Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

#2 Fuel Oil

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)	0	0
Particulate Matter (PM _{2.5})		
Particulate Matter (PM ₁₀)		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

1 - Per Table 11.24-2 (English Units). EMISSION FACTORS FOR METALLIC MINERALS PROCESSING. No factor is listed for crushing and screening in AP-42 Ferroalloy Section 12.4. It is assumed metallic mineral screening is equal to the metallic mineral crushing emission factor.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Minor source NSR (45CSR13)
Section 112(d) MACT standards Subpart XXX
Section 111 NSPS Subpart OOO

See permit conditions below.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Pages Below.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: BC1A, BC2A, BC1B, BC2B, BC1C, BC2C, BC1D, BC2D	Emission unit name: BC1A, BC2A, BC1B, BC2B, BC1C, BC2C, BC1D, BC2D	List any control devices associated with this emission unit: PE
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Belt Conveyor System, raw material conveyors

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date: 2009, 2012	Installation date: 2009, 2012	Modification date(s): N/A
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 400 tph

Maximum Hourly Throughput: 150 tph	Maximum Annual Throughput: 143000 tpy	Maximum Operating Schedule: 8,760 hr/yr
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, is it? <input type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired
--	--

Maximum design heat input and/or maximum horsepower rating: N/A	Type and Btu/hr rating of burners: N/A
---	--

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

#2 Fuel Oil

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	.0636	.0281
Particulate Matter (PM ₁₀)	.2026	.0897
Total Particulate Matter (TSP)	.4284	.1896
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

1 - Per Table 11.24-2 (English Units). EMISSION FACTORS FOR METALLIC MINERALS PROCESSING. No factor is listed for crushing and screening in AP-42 Ferroalloy Section 12.4. It is assumed metallic mineral screening is equal to the metallic mineral crushing emission factor.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Minor source NSR (45CSR13)
Section 112(d) MACT standards Subpart XXX
Section 111 NSPS Subpart OOO

See permit conditions below.

X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Pages Below.

Are you in compliance with all applicable requirements for this emission unit? X Yes No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: OCS1, OCS2, OCS3	Emission unit name: OCS1, OCS2, OCS3	List any control devices associated with this emission unit: PE
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
Concentrate, Middlings, & Slag Stockpiles

Manufacturer: N/A	Model number: N/A	Serial number: N/A
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Construction date: 2012	Installation date: 2012	Modification date(s): N/A
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 5,000 Ton

Maximum Hourly Throughput: 400 tph	Maximum Annual Throughput: 143000 tpy	Maximum Operating Schedule: 8,760 hr/yr
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, is it? <input type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired
--	--

Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

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<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	.03	.12
Particulate Matter (PM ₁₀)	.0885	.3873
Total Particulate Matter (TSP)	.18807	.8238
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

1 - Per Table 11.24-2 (English Units). EMISSION FACTORS FOR METALLIC MINERALS PROCESSING. No factor is listed for crushing and screening in AP-42 Ferroalloy Section 12.4. It is assumed metallic mineral screening is equal to the metallic mineral crushing emission factor.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Minor source NSR (45CSR13)
Section 112(d) MACT standards Subpart XXX
Section 111 NSPS Subpart OOO

See permit conditions below.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Pages Below.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: H1, PF, CS1, CC1, BC1, BC2, BC3, CS2, BC4, CC2, CS3, BC5	Emission unit name: Indoor Crusher - 2014 Modification to 2011 #1 Crusher	List any control devices associated with this emission unit: PE, FE, BH
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
 Concentrate, Middlings, & Slag Stockpiles

Manufacturer: Terex	Model number: 20x30 & 10x30 Crusher, 39x15 Hor & 5x14 Verti, 4x8 Screener	Serial number: N/A
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Construction date: 2013	Installation date: 2014	Modification date(s): 2014
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 150 tph

Maximum Hourly Throughput: 150tph	Maximum Annual Throughput: 143000 tpy	Maximum Operating Schedule: 8,760 hr/yr
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___Yes ___ <input checked="" type="checkbox"/> No	If yes, is it? ___Indirect Fired___Direct Fired
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Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	3.67	1.73
Particulate Matter (PM ₁₀)	-	.25
Total Particulate Matter (TSP)	-	1.15
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

1 - Per Table 11.24-2 (English Units). EMISSION FACTORS FOR METALLIC MINERALS PROCESSING. No factor is listed for crushing and screening in AP-42 Ferroalloy Section 12.4. It is assumed metallic mineral screening is equal to the metallic mineral crushing emission factor.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Minor source NSR (45CSR13)
Section 112(d) MACT standards Subpart XXX
Section 111 NSPS Subpart OOO

See permit conditions below.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Pages Below.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: H1, BC-1, H2, F1	Emission unit name: Induction Furnace	List any control devices associated with this emission unit: PE, FE, BH-1
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
Hopper, Belt Conveyor, Charge Hopper, Induction Furnace

Manufacturer: Inductotherm	Model number: N/A	Serial number: N/A
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Construction date:	Installation date: 2015	Modification date(s): N/A
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 5,000 Ton

Maximum Hourly Throughput: 3.75 tons/hr	Maximum Annual Throughput: 143000 tpy	Maximum Operating Schedule: 8,760 hr/yr
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? ___ Yes ___ <input checked="" type="checkbox"/> No	If yes, is it? ___ Indirect Fired ___ Direct Fired
---	--

Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Lead (Pb)		
Particulate Matter (PM _{2.5})	.35	1.54
Particulate Matter (PM ₁₀)	1.10	4.89
Total Particulate Matter (TSP)	2.33	10.33
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

1 - Per Table 11.24-2 (English Units). EMISSION FACTORS FOR METALLIC MINERALS PROCESSING. No factor is listed for crushing and screening in AP-42 Ferroalloy Section 12.4. It is assumed metallic mineral screening is equal to the metallic mineral crushing emission factor.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Minor source NSR (45CSR13)
Section 112(d) MACT standards Subpart XXX
Section 111 NSPS Subpart OOO

See permit conditions below.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

See Pages Below.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: BTSC-01	Emission unit name: Bivitech Screen/Diesel Engine	List any control devices associated with this emission unit: FE
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Bivitech Screen/Diesel Engine

Manufacturer: Studco - Bivitech	Model number: N/A	Serial number: N/A
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Construction date: N/A	Installation date: 2009	Modification date(s): N/A
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 150 tph

Maximum Hourly Throughput: 150 tons/hr	Maximum Annual Throughput: 143000 tpy	Maximum Operating Schedule: 8,760 hr/yr
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, is it? <input type="checkbox"/> Indirect Fired <input checked="" type="checkbox"/> Direct Fired
--	---

Maximum design heat input and/or maximum horsepower rating:	Type and Btu/hr rating of burners:
--	---

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

#2 Fuel Oil

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	1.04	.36
Nitrogen Oxides (NO _x)	4.83	1.69
Lead (Pb)	0	0
Particulate Matter (PM _{2.5})	2.23	1.86
Particulate Matter (PM ₁₀)	7.09	5.92
Total Particulate Matter (TSP)	15.00	12.50
Sulfur Dioxide (SO ₂)	.32	.11
Volatile Organic Compounds (VOC)	.38	.13
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

1 - Per Table 11.24-2 (English Units). EMISSION FACTORS FOR METALLIC MINERALS PROCESSING. No factor is listed for crushing and screening in AP-42 Ferroalloy Section 12.4. It is assumed metallic mineral screening is equal to the metallic mineral crushing emission factor.

HAP Emission Factor data provided via prior permit application.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Minor source NSR (45CSR13)
Section 112(d) MACT standards Subpart XXX
Section 111 NSPS Subpart OOO

See permit conditions below.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

See Pages Below.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number: H1-M, F1-M, BC1-M, CR1-M, BC2-M, MP-BC3-M, S1-M	Emission unit name: Power Screen Trakpactor Horizontal Impact Crusher	List any control devices associated with this emission unit: FE, WS, PE
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Provide a description of the emission unit (type, method of operation, design parameters, etc.):
271 hp Horizontal Impact Crusher with hopper, feeder, top deck transfer belt, oversize recirculation belt, and bottom belt

Manufacturer: Power Screen Trakpactor with Scania DC09 350hp Diesel Engine	Model number: 320SR	Serial number: N/A
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Construction date: 2014	Installation date: 2014	Modification date(s): N/A
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Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 150 tph

Maximum Hourly Throughput: 400 tons/hr	Maximum Annual Throughput: 143000 tpy	Maximum Operating Schedule: 8,760 hr/yr
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Fuel Usage Data (fill out all applicable fields)

Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, is it? <input type="checkbox"/> Indirect Fired <input checked="" type="checkbox"/> Direct Fired
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Maximum design heat input and/or maximum horsepower rating: 350hp diesel	Type and Btu/hr rating of burners:
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List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

#2 Fuel Oil at 14.07 gallons/hour

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

<i>Emissions Data</i>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	6.58	1.05
Nitrogen Oxides (NO _x)	7.31	1.17
Lead (Pb)	0	0
Particulate Matter (PM _{2.5})	6.08	1.09
Particulate Matter (PM ₁₀)	20.05	3.59
Total Particulate Matter (TSP)	42.38	7.58
Sulfur Dioxide (SO ₂)	.53	.08
Volatile Organic Compounds (VOC)	.63	.10
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
HAPs		.0010
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO ₂		47.52
<p>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</p> <p><i>1 - Per Table 11.24-2 (English Units). EMISSION FACTORS FOR METALLIC MINERALS PROCESSING. No factor is listed for crushing and screening in AP-42 Ferroalloy Section 12.4. It is assumed metallic mineral screening is equal to the metallic mineral crushing emission factor.</i></p> <p><i>HAP Emission Factor data provided via prior permit application.</i></p>		

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Minor source NSR (45CSR13)
Section 112(d) MACT standards Subpart XXX
Section 111 NSPS Subpart OOO

See permit conditions below.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Pages Below.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Requirement																																												
1	45CSR13, R13-2857, Condition 4.1.1.	6.1.1.	PM Limits	<p>Emissions from the operations covered under this permit shall not exceed the following:</p> <table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">PM/Mn Compounds</th> <th colspan="2">PM₁₀/Mn Compounds</th> </tr> <tr> <th>lb/hr</th> <th>TPY</th> <th>lb/hr</th> <th>TPY</th> </tr> </thead> <tbody> <tr> <td>Crushing</td> <td>21.8</td> <td>2.45</td> <td>10.31</td> <td>1.16</td> </tr> <tr> <td>Screening</td> <td>21.8</td> <td>2.45</td> <td>10.31</td> <td>1.16</td> </tr> <tr> <td>Pelletizer</td> <td>0.01</td> <td>0.01</td> <td>0.01</td> <td>0.01</td> </tr> <tr> <td>Extruder</td> <td>0.39</td> <td>0.10</td> <td>0.18</td> <td>0.05</td> </tr> <tr> <td>Transfer Points</td> <td>29.0</td> <td>3.32</td> <td>13.71</td> <td>1.57</td> </tr> <tr> <td>Stockpiles</td> <td>3.36</td> <td>0.61</td> <td>1.59</td> <td>0.29</td> </tr> <tr> <td>Total</td> <td>76.36</td> <td>8.94</td> <td>36.11</td> <td>4.24</td> </tr> </tbody> </table>		PM/Mn Compounds		PM ₁₀ /Mn Compounds		lb/hr	TPY	lb/hr	TPY	Crushing	21.8	2.45	10.31	1.16	Screening	21.8	2.45	10.31	1.16	Pelletizer	0.01	0.01	0.01	0.01	Extruder	0.39	0.10	0.18	0.05	Transfer Points	29.0	3.32	13.71	1.57	Stockpiles	3.36	0.61	1.59	0.29	Total	76.36	8.94	36.11	4.24
	PM/Mn Compounds		PM ₁₀ /Mn Compounds																																													
	lb/hr	TPY	lb/hr	TPY																																												
Crushing	21.8	2.45	10.31	1.16																																												
Screening	21.8	2.45	10.31	1.16																																												
Pelletizer	0.01	0.01	0.01	0.01																																												
Extruder	0.39	0.10	0.18	0.05																																												
Transfer Points	29.0	3.32	13.71	1.57																																												
Stockpiles	3.36	0.61	1.59	0.29																																												
Total	76.36	8.94	36.11	4.24																																												
2	45CSR13, R13-2857, Condition 4.1.2.	6.1.2.	Operating Rate Limit	Total combined throughput of material into the Crusher CR-1C shall not exceed 400 tons per hour nor 90,000 tons per year. Compliance with this limit shall be based on a 12 month rolling total. For the purposes of this permit a 12 month rolling total means the sum of material throughput at the end of any given month for the previous 12 months.																																												
3	45CSR13, R13-2857, Condition 4.1.3.	6.1.3.	Operating Rate Limit	Total combined throughput of material into the Screen SC-1C shall not exceed 400 tons per hour nor 90,000 tons per year. Compliance with this limit shall be based on a 12 month rolling total.																																												
4	45CSR13, R13-2857, Condition 4.1.4.	6.1.4.	Operating Rate Limit	Total combined throughput of material into the Extruder EX-1 shall not exceed 20 tons per hour nor 10,000 tons per year. Compliance with this limit shall be based on a 12 month rolling total.																																												
5	45CSR13, R13-2857, Condition 4.1.5.	6.1.5.	Operating Rate Limit	Total combined throughput of material into the Pelletizer PT-1 shall not exceed 6 tons per hour nor 10,000 tons per year. Compliance with this limit shall be based on a 12 month rolling total.																																												
6	45CSR13, R13-2857, Condition 4.1.6.	6.1.6.	Stockpile Size Limit	The base area of stockpile OS-1C shall not exceed 5,000 sq. ft.																																												
7	45CSR13, R13-2857, Condition 4.1.7.	6.1.7.	Stockpile Size Limit	The base area of stockpile OS-2C shall not exceed 5,000 sq. ft.																																												
8	45CSR13, R13-2857, Condition 4.1.8.	6.1.8.	Stockpile Size Limit	The base area of stockpile OS-1X shall not exceed 5,000 sq. ft.																																												
9	45CSR13, R13-2857, Condition 4.1.9.	6.1.9.	Stockpile Size Limit	The base area of stockpile OS-1P shall not exceed 5,000 sq. ft.																																												
10	45CSR13, R13-2857, Condition 4.1.10.	6.1.10.	Control Requirement	Emissions from Crusher CR-1C and Screen SC-1C shall be controlled by use of a baghouse. Said baghouse shall be designed, installed, operated and maintained so as to achieve a minimum overall efficiency of at least 89%.																																												
11	45CSR13, R13-2857, Condition 4.1.11.	6.1.11.	Control Requirement	The following transfer points shall be controlled by enclosures: T1C, T2C, T4C, T7C, T1P, T3P, T1X and T3X.																																												
12	45CSR13, R13-2857, Condition 4.1.12.	6.1.12.	Control Requirement	Transfer points T3C and T6C shall be controlled by water sprays																																												

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Requirement
13	45CSR13, R13-2857, Condition 4.1.13.	6.1.13.	Control Requirement	Transfer point T5C shall be controlled by both an enclosure and water sprays.
14	45CSR§7-3.1, 45CSR§7-3.2, and 45CSR13, R13-2857, Condition 4.1.14.	6.1.14.	Opacity	Opacity from any process source operation shall not exceed 20% except for opacity which is less than 40% for a period or periods aggregating no more than 5 minutes in any 60 minute period.
15	45CSR16, 40CFR§§60.672(a) and (b), and 45CSR13-2857, Condition 4.1.16.	6.1.15.	40CFR60 Subpart OOO	When processing limestone, the permittee shall comply with all applicable standards of 40 CFR Part 60, Subpart OOO including but not limited to the following: a. The Crusher CR-1C and Screen SC-1C must both meet a PM limit of 0.014 grain/dscf. b. The transfer points associated with belts BC-1C and BC-2C must meet an opacity limit of 7%.
16	45CSR34, 40CFR§63.1652(e)(1) and 45CSR13, R13-2857, Condition 4.1.17.	6.1.16.	40CFR63 Subpart XXX	When not processing limestone, the permittee shall comply with all applicable standards of 40 CFR Part 63, Subpart XXX including Sections 3.1.14., 3.1.15. 3.1.16. of this permit and the following: No owner or operator shall cause to be discharged into the atmosphere from any new or reconstructed piece of equipment associated with crushing and screening exhaust gases containing particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).
17	45CSR§13-5.11. and 45CSR13, R13-2857, Condition 4.1.18. (Baghouses to SC-1C and CR-1C; Water sprays to BC-1C, BC-2C, OS-1C, and OS-2C, Full enclosures on EX-1 and PT-1)	6.1.17.	Operation and Maintenance of Air Pollution Control Equipment	Operation and Maintenance of Air Pollution Control Equipment. The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment permitted by R13-2857, and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.
18	45CSR16, 40CFR§§ 60.675(b)(1) and (b)(2) and 45CSR13, R13-2857, Condition 4.2.1.	6.2.1.	Testing Requirement	The permittee shall comply with all applicable testing requirements of 40 CFR Part 60, Subpart OOO including but not limited to the following: The owner or operator shall determine compliance with the PM standards in Section 6.1.15.a. as follows: a. Except as specified in 40 CFR §§ 60.675(e)(3) and (4), Method 5 of Appendix A3 of this part or Method 17 of Appendix A6 of this part shall be used to determine the particulate matter concentration. The sample volume shall be at least 1.70 dscm (60 dscf). For Method 5 (40 CFR part 60, Appendix A3), if the gas stream being sampled is at ambient temperature, the sampling probe and filter may be operated without heaters. If the gas stream is above ambient temperature, the sampling probe and filter may be operated at a temperature high enough, but no higher than 121EC (250EF), to prevent water condensation on the filter. b. Method 9 of Appendix A4 of this part and the procedures in 40 CFR § 60.11 shall be used to determine opacity.
19	45CSR34, 40CFR§ 63.1656(c)(1) and 45CSR13, R13-2857, Condition 4.2.2.	6.2.2.	Testing Requirement	The permittee shall comply with all applicable standards of 40 CFR Part 63, Subpart XXX including but not limited to the following: The owner or operator must conduct an initial performance test for air pollution control devices or vent stacks subject to Section 6.1.16. of this permit to demonstrate compliance with the applicable emission standards.

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Requirement
20	45CSR13, R13-2857, Condition 4.3.2. (Baghouses to SC-1C and CR-1C; Water sprays to BC-1C, BC-2C, OS-1C, and OS-2C, Full enclosures on EX-1 and PT-1)	6.3.1.	Record of Maintenance of Air Pollution Control Equipment	Record of Maintenance of Air Pollution Control Equipment. For all pollution control equipment permitted by R13-2857, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures.
21	45CSR13, R13-2857, Condition 4.3.3. (Baghouses to SC-1C and CR-1C; Water sprays to BC-1C, BC-2C, OS-1C, and OS-2C, Full enclosures on EX-1 and PT-1)	6.3.2.	Record of Malfunctions of Air Pollution Control Equipment	Record of Malfunctions of Air Pollution Control Equipment. For all air pollution control equipment permitted by R13-2857, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded: a. The equipment involved. b. Steps taken to minimize emissions during the event. c. The duration of the event. d. The estimated increase in emissions during the event. For each such case associated with an equipment malfunction, the additional information shall also be recorded: e. The cause of the malfunction. f. Steps taken to correct the malfunction. g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.
22	45CSR16, 40CFR §§ 60.674(b) and (c), and 45CSR13, R13-2857, Condition 4.3.4.	6.3.3.	40CFR60 Subpart OOO Monitoring and Recordkeeping	The permittee shall comply with all applicable monitoring and recordkeeping requirements of 40 CFR Part 60, Subpart OOO including but not limited to the following: The owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses wet suppression to control emissions from the affected facility must perform monthly periodic inspections to check that water is flowing to discharge spray nozzles in the wet suppression system. The owner or operator must initiate corrective action within 24 hours and complete corrective action as expeditiously as practical if the owner or operator finds that water is not flowing properly during an inspection of the water spray nozzles. The owner or operator must record each inspection of the water spray nozzles, including the date of each inspection and any corrective actions taken, in the logbook required under Section 6.4.1. Except as specified in 40 CFR §§ 60.674(d) or (e), the owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses a baghouse to control emissions must conduct quarterly 30-minute visible emissions inspections using EPA Method 22 (40 CFR part 60, Appendix A7). The Method 22 (40 CFR part 60, Appendix A7) test shall be conducted while the baghouse is operating. The test is successful if no visible emissions are observed. If any visible emissions are observed, the owner or operator of the affected facility must initiate corrective action within 24 hours to return the baghouse to normal operation. The owner or operator must record each Method 22 (40 CFR part 60, Appendix A7) test, including the date and any corrective actions taken, in the logbook required under Section 6.4.1. The owner or operator of the affected facility may establish a different baghouse-specific success level for the visible emissions test (other than no visible emissions) by conducting a PM performance test according to 40 CFR § 60.675(b) simultaneously with a Method 22 (40 CFR part 60, Appendix A7) to determine what constitutes normal visible emissions from that affected facility's baghouse when it is in compliance with the applicable PM concentration limit in Table 2 of this subpart. The revised visible emissions success level must be incorporated into the permit for the affected facility.

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Requirement
23	45CSR34, 40CFR§ 63.1657(a)(1) and 45CSR13, R13-2857, Condition 4.3.5.	6.3.4.	40CFR63 Subpart XXX Monitoring and Recordkeeping	The permittee shall comply with all applicable monitoring and recordkeeping requirements of 40 CFR Part 63, Subpart XXX including Sections 3.2.1., 3.2.3., 3.4.5. and the following: For the baghouses serving the submerged arc furnaces, the metal oxygen refining process, and crushing and screening operations, the owner or operator must observe on a daily basis for the presence of any visible emissions.
24	45CSR13, R13-2857, Condition 4.3.6.	6.3.5.	Monitoring and Recordkeeping	In order to determine compliance with sections 6.1.2. and 6.1.3. of this permit the permittee shall monitor and record the amount of material processed through the screen SC-1C on a monthly basis.
25	45CSR13, R13-2857, Condition 4.3.7.	6.3.6.	Monitoring and Recordkeeping	In order to determine compliance with section 6.1.4. of this permit the permittee shall monitor and record the amount of material processed through the Extruder EX-1 on a monthly basis.
26	45CSR13, R13-2857, Condition 4.3.8.	6.3.7.	Monitoring and Recordkeeping	In order to determine compliance with section 6.1.5. of this permit the permittee shall monitor and record the amount of material processed through the Pelletizer PT-1 on a monthly basis.
27	45CSR16, 40CFR§ 60.676(b)(1), and 45CSR13, R13-2857, Condition 4.4.1.	6.4.1.	40CFR60 Subpart OOO Monitoring and Recordkeeping	The permittee shall comply with all applicable monitoring and recordkeeping requirements of 40 CFR Part 60 Subpart OOO. Owners or operators of affected facilities for which construction, modification, or reconstruction commenced on or after April 22, 2008, must record each periodic inspection required under Section 6.3.3., including dates and any corrective actions taken, in a logbook (in written or electronic format). The owner or operator must keep the logbook onsite and make hard or electronic copies (whichever is requested) of the logbook available to the Administrator upon request.
28	45CSR13, R13-2857, Condition 4.4.2.	6.4.2.	40CFR63 Subpart XXX	The permittee shall comply with all applicable monitoring and recordkeeping requirements of 40CFR Part 63 Subpart XXX including Sections 3.5.13., 3.5.14., and 3.5.15. of this permit.

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Method of Compliance
1	45CSR13, R13-2857, Condition 4.1.1.	6.1.1.	PM Limits	NA
2	45CSR13, R13-2857, Condition 4.1.2.	6.1.2.	Operating Rate Limit	12 Month Rolling Total Recordkeeping
3	45CSR13, R13-2857, Condition 4.1.3.	6.1.3.	Operating Rate Limit	12 Month Rolling Total Recordkeeping
4	45CSR13, R13-2857, Condition 4.1.4.	6.1.4.	Operating Rate Limit	12 Month Rolling Total Recordkeeping
5	45CSR13, R13-2857, Condition 4.1.5.	6.1.5.	Operating Rate Limit	12 Month Rolling Total Recordkeeping
6	45CSR13, R13-2857, Condition 4.1.6.	6.1.6.	Stockpile Size Limit	NA
7	45CSR13, R13-2857, Condition 4.1.7.	6.1.7.	Stockpile Size Limit	NA
8	45CSR13, R13-2857, Condition 4.1.8.	6.1.8.	Stockpile Size Limit	NA
9	45CSR13, R13-2857, Condition 4.1.9.	6.1.9.	Stockpile Size Limit	NA
10	45CSR13, R13-2857, Condition 4.1.10.	6.1.10.	Control Requirement	NA
11	45CSR13, R13-2857, Condition 4.1.11.	6.1.11.	Control Requirement	NA
12	45CSR13, R13-2857, Condition 4.1.12.	6.1.12.	Control Requirement	NA
13	45CSR13, R13-2857, Condition 4.1.13.	6.1.13.	Control Requirement	NA
14	45CSR§7-3.1, 45CSR§7-3.2, and 45CSR13, R13-2857, Condition 4.1.14.	6.1.14.	Opacity	Conduct opacity testing as required and maintain records.
15	45CSR16, 40CFR§§60.672(a) and (b), and 45CSR13-2857, Condition 4.1.16.	6.1.15.	40CFR60 Subpart OOO	Conduct testing and opacity testing as required and maintain records.

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Method of Compliance
16	45CSR34, 40CFR§63.1652(e)(1) and 45CSR13, R13-2857, Condition 4.1.17.	6.1.16.	40CFR63 Subpart XXX	Conduct testing and opacity testing as required and maintain records.
17	45CSR§13-5.11. and 45CSR13, R13-2857, Condition 4.1.18. (Baghouses to SC-1C and CR-1C; Water sprays to BC-1C, BC-2C, OS-1C, and OS-2C, Full enclosures on EX-1 and PT-1)	6.1.17.	Operation and Maintenance of Air Pollution Control Equipment	NA
18	45CSR16, 40CFR§§ 60.675(b)(1) and (b)(2) and 45CSR13, R13-2857, Condition 4.2.1.	6.2.1.	Testing Requirement	Conduct 40CFR60, Subpart OOO testing as required and maintain records.
19	45CSR34, 40CFR§ 63.1656(c)(1) and 45CSR13, R13-2857, Condition 4.2.2.	6.2.2.	Testing Requirement	Conduct 40CFR63, Subpart XXX testing as required and maintain records.
20	45CSR13, R13-2857, Condition 4.3.2. (Baghouses to SC-1C and CR-1C; Water sprays to BC-1C, BC-2C, OS-1C, and OS-2C, Full enclosures on EX-1 and PT-1)	6.3.1.	Record of Maintenance of Air Pollution Control Equipment	Maintain record of maintenance on air pollution control equipment.
21	45CSR13, R13-2857, Condition 4.3.3. (Baghouses to SC-1C and CR-1C; Water sprays to BC-1C, BC-2C, OS-1C, and OS-2C, Full enclosures on EX-1 and PT-1)	6.3.2.	Record of Malfunctions of Air Pollution Control Equipment	Maintain a record of malfunctions of air pollution control equipment.
22	45CSR16, 40CFR§§ 60.674(b) and (c), and 45CSR13, R13-2857, Condition 4.3.4.	6.3.3.	40CFR60 Subpart OOO Monitoring and Recordkeeping	40CFR60, Subpart OOO monitoring and recordkeeping.
23	45CSR34, 40CFR§ 63.1657(a)(1) and 45CSR13, R13-2857, Condition 4.3.5.	6.3.4.	40CFR63 Subpart XXX Monitoring and Recordkeeping	40CFR63, Subpart XXX monitoring and recordkeeping.

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

No.	Rule/ Regulation/ R13 Permit	Existing R30 Permit Condition	Name	Method of Compliance
24	45CSR13, R13-2857, Condition 4.3.6.	6.3.5.	Monitoring and Recordkeeping	Monitor and record monthly throughput of SC-1C.
25	45CSR13, R13-2857, Condition 4.3.7.	6.3.6.	Monitoring and Recordkeeping	Monitor and record monthly throughput of EX-1.
26	45CSR13, R13-2857, Condition 4.3.8.	6.3.7.	Monitoring and Recordkeeping	Monitor and record monthly throughput of PT-1.
27	45CSR16, 40CFR§ 60.676(b)(1), and 45CSR13, R13-2857, Condition 4.4.1.	6.4.1.	40CFR60 Subpart OOO Monitoring and Recordkeeping	40CFR60, Subpart OOO monitoring and recordkeeping.
28	45CSR13, R13-2857, Condition 4.4.2.	6.4.2.	40CFR63 Subpart XXX	40CFR63, Subpart XXX monitoring and recordkeeping.

ATTACHMENT F - Schedule of Compliance Form

Complete this section if you indicated noncompliance with any of the applicable requirements identified in the permit application. For each emission unit which is not in compliance, identify the applicable requirement, the reason(s) for noncompliance, a description of how the source will achieve compliance, and a detailed schedule of compliance. If there is a consent order that applies to this requirement, attach a copy to this form.

1. Applicable Requirement 5.1.8 (Use Casting Station), 3.2.3 (Monitor Pressure Drop in Baghouse)

Unit(s): Casting Station and Baghouses	Applicable Requirement: 5.1.8 and 3.2.3
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2. Reason for Noncompliance:

Casting without using the casting station due to operational issues with the casting station.
Pressure gauges not on baghouse for Crushing System No. 1.

3. How will Compliance be Achieved?

See CO-R34-E-2011-05 Appendix A – Schedule for Compliance (Attached)

4. Consent Order Number (if applicable): CO-R34-E-2011-05

5. Schedule of Compliance. Provide a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance, including a date for final compliance.

Remedial Measure or Action	Date to be Achieved
See Attached	

6. Submittal of Progress Reports. None

Content of Progress Report:	Report starting date: None
None	Submittal frequency: None

APPENDIX A – SCHEDULE FOR COMPLIANCE

ORDER REFERENCE	COMPLIANCE ACTION	SCHEDULED COMPLETION DATE
<p>Finding 2a: The hood on Furnace #5 was not effectively capturing and/or evacuating emissions to the baghouse. Fugitive particulate emissions were heavier during tapping operations but continued after the tap was completed.</p>	Repairs to the tap hole fan completed by FPI	10-1-2010
	Repairs to the damaged stacks coming out of the furnace.	10-6-2010
	Perform an air flow feasibility study.	12-21-2010
<p>Finding 2b: Molten metal from Furnace #5 was poured directly to chills without using a casting station.</p>	Repair the #5 Ladle Tilter and Hoods	11-17-2010
	Exhaust hood re-design.	10-31-2010
	Implement engineered modifications for the exhaust hoods	11-17-2010
	Re-design casting nest tilter system.	9-17-2010
	Implement engineered modifications for the casting nest tilter.	11-17-2010
<p>Finding 2c: Fugitive particulate emissions were observed leaking at a joint in the duct work leading from the #2 Furnace to the #2 Bag House. The leak was heavy and constant for an entire tapping period. Fugitive particulate emissions leaking through the joint were heavier during tapping operations but continued after the tap was completed.</p>	<p>Repack the vertical expansion joints above the well on #2 furnace</p>	10-3-2010
<p>Finding 2d: Molten metal from Furnace #2 was poured directly to chills without using a casting station.</p>	<p>Repair the #2 ladle tilter and hoods. Capital Equipment Request was sent to our Corporation for approval on March 7, 2011. Once approval is granted job will be completed in 90 days</p>	
	Implement engineered modifications for the exhaust hoods	
	Implement engineered modifications for the casting nest tilter.	

APPENDIX A (cont.) – SCHEDULE FOR COMPLIANCE

ORDER REFERENCE	COMPLIANCE ACTION	SCHEDULED COMPLETION DATE
Finding 2f: The bag house for sizing system #1 is not equipped with a gauge to provide pressure drop readings across the bag house cell or cells.	Purchase and install gauges and tubing to read the pressure drop across the cells. Unit is currently not operating.	Prior to startup.
Finding 2g: Felman is operating a new screening and picking station to separate remelt material that is introduced to the furnaces for further processing.	Felman will present data and apply for an air permit for the new screening and picking circuit.	No later than 6-1-2011
Finding 5a: Molten metal from Furnace #7 was poured directly to chills without using a casting station.	Repairing the #7 ladle tilter and hoods.	When approval is granted for #2 tilter and the design works we will retrofit #5 and #7 as designed
	Implement engineered modifications for the exhaust hoods	
	Implement engineered modifications for the casting nest tilter.	

ATTACHMENT F
SCHEDULE OF COMPLIANCE

ATTACHMENT G
AIR POLLUTION CONTROL DEVICE FORMS

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: 000A	List all emission units associated with this control device. Crushing Operations
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Manufacturer: Joy Manufacturing Company	Model number: NA	Installation date: 1982
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Type of Air Pollution Control Device:

<input type="checkbox"/> Baghouse/Fabric Filter	<input type="checkbox"/> Venturi Scrubber	<input type="checkbox"/> Multiclone
<input type="checkbox"/> Carbon Bed Adsorber	<input type="checkbox"/> Packed Tower Scrubber	<input type="checkbox"/> Single Cyclone
<input type="checkbox"/> Carbon Drum(s)	<input checked="" type="checkbox"/> Other Wet Scrubber	<input type="checkbox"/> Cyclone Bank
<input type="checkbox"/> Catalytic Incinerator	<input type="checkbox"/> Condenser	<input type="checkbox"/> Settling Chamber
<input type="checkbox"/> Thermal Incinerator	<input type="checkbox"/> Flare	<input type="checkbox"/> Other (describe) _____
<input type="checkbox"/> Wet Plate Electrostatic Precipitator	<input type="checkbox"/> Dry Plate Electrostatic Precipitator	

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
PM10	100	95
TSP	100	95
Metals	100	95

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).
 Scrubber is a low-pressure impingement-type scrubber used to control the dust generated from the magnesium-silicon (magsil) ferroalloy crushing operations. Plant personnel estimate the control efficiency to be 99 percent. A control efficiency of 95 percent has conservatively been assumed.
 The liquid recirculation of the scrubber is 90 gpm and the wastewater blowdown rate is 10 gpm.
 Pressure Drop – 6 to 10 inches of H₂O, Gas temp – 68 degrees F

Is this device subject to the CAM requirements of 40 C.F.R. 64? Yes No
 If Yes, **Complete ATTACHMENT H**
 If No, **Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

Recirculation rate

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: 000D	List all emission units associated with this control device. Crusher System No. 1	
Manufacturer: Wheelabrator	Model number: NA	Installation date: 1952

Type of Air Pollution Control Device:

<input checked="" type="checkbox"/> Baghouse/Fabric Filter	<input type="checkbox"/> Venturi Scrubber	<input type="checkbox"/> Multiclone
<input type="checkbox"/> Carbon Bed Adsorber	<input type="checkbox"/> Packed Tower Scrubber	<input type="checkbox"/> Single Cyclone
<input type="checkbox"/> Carbon Drum(s)	<input type="checkbox"/> Other Wet Scrubber	<input type="checkbox"/> Cyclone Bank
<input type="checkbox"/> Catalytic Incinerator	<input type="checkbox"/> Condenser	<input type="checkbox"/> Settling Chamber
<input type="checkbox"/> Thermal Incinerator	<input type="checkbox"/> Flare	<input type="checkbox"/> Other (describe) _____
<input type="checkbox"/> Wet Plate Electrostatic Precipitator	<input type="checkbox"/> Dry Plate Electrostatic Precipitator	

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
PM10	100	99.5
TSP	100	99.5
Metals	100	99.5

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).
 This control device represents one of three baghouses operating parallel to one another.
 Pressure Drop – 3 to 7 inches of H2O
 Flow rate – 8,000 scfm
 Gas temp – 70 degrees F

Is this device subject to the CAM requirements of 40 C.F.R. 64? Yes No
 If Yes, **Complete ATTACHMENT H**
 If No, **Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

Pressure Drop

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: 000E	List all emission units associated with this control device. Crusher System No. 1
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Manufacturer: American Air Filter	Model number: NA	Installation date: 1952
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Type of Air Pollution Control Device:

<input checked="" type="checkbox"/> Baghouse/Fabric Filter	<input type="checkbox"/> Venturi Scrubber	<input type="checkbox"/> Multiclone
<input type="checkbox"/> Carbon Bed Adsorber	<input type="checkbox"/> Packed Tower Scrubber	<input type="checkbox"/> Single Cyclone
<input type="checkbox"/> Carbon Drum(s)	<input type="checkbox"/> Other Wet Scrubber	<input type="checkbox"/> Cyclone Bank
<input type="checkbox"/> Catalytic Incinerator	<input type="checkbox"/> Condenser	<input type="checkbox"/> Settling Chamber
<input type="checkbox"/> Thermal Incinerator	<input type="checkbox"/> Flare	<input type="checkbox"/> Other (describe) _____
<input type="checkbox"/> Wet Plate Electrostatic Precipitator	<input type="checkbox"/> Dry Plate Electrostatic Precipitator	

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
PM10	100	99.5
TSP	100	99.5
Metals	100	99.5

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).
 This control device represents one of three baghouses operating parallel to one another.

Is this device subject to the CAM requirements of 40 C.F.R. 64? Yes No
 If Yes, **Complete ATTACHMENT H**
 If No, **Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.
 Pressure Drop

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: 000F	List all emission units associated with this control device. Crusher System No. 2
--	---

Manufacturer: American Air Filter	Model number: NA	Installation date: 1980
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Type of Air Pollution Control Device:

<input checked="" type="checkbox"/> Baghouse/Fabric Filter	<input type="checkbox"/> Venturi Scrubber	<input type="checkbox"/> Multiclone
<input type="checkbox"/> Carbon Bed Adsorber	<input type="checkbox"/> Packed Tower Scrubber	<input type="checkbox"/> Single Cyclone
<input type="checkbox"/> Carbon Drum(s)	<input type="checkbox"/> Other Wet Scrubber	<input type="checkbox"/> Cyclone Bank
<input type="checkbox"/> Catalytic Incinerator	<input type="checkbox"/> Condenser	<input type="checkbox"/> Settling Chamber
<input type="checkbox"/> Thermal Incinerator	<input type="checkbox"/> Flare	<input type="checkbox"/> Other (describe) _____
<input type="checkbox"/> Wet Plate Electrostatic Precipitator	<input type="checkbox"/> Dry Plate Electrostatic Precipitator	

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
PM10	100	99.5
TSP	100	99.5
Metals	100	99.5

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

This control devise represents one of two baghouses operating parallel to one another.
 Pressure Drop – 3 to 7 inches of H2O
 Gas Flow Rate – 6,000 scfm
 Gas temp – 70 degrees F

Is this device subject to the CAM requirements of 40 C.F.R. 64? Yes No

If Yes, **Complete ATTACHMENT H**

If No, **Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

Pressure Drop

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: 0002	List all emission units associated with this control device. Furnace No. 2
--	--

Manufacturer: NA	Model number: NA	Installation date: 1973
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Type of Air Pollution Control Device:

<input checked="" type="checkbox"/> Baghouse/Fabric Filter	<input type="checkbox"/> Venturi Scrubber	<input type="checkbox"/> Multiclone
<input type="checkbox"/> Carbon Bed Adsorber	<input type="checkbox"/> Packed Tower Scrubber	<input type="checkbox"/> Single Cyclone
<input type="checkbox"/> Carbon Drum(s)	<input type="checkbox"/> Other Wet Scrubber	<input type="checkbox"/> Cyclone Bank
<input type="checkbox"/> Catalytic Incinerator	<input type="checkbox"/> Condenser	<input type="checkbox"/> Settling Chamber
<input type="checkbox"/> Thermal Incinerator	<input type="checkbox"/> Flare	<input type="checkbox"/> Other (describe) _____
<input type="checkbox"/> Wet Plate Electrostatic Precipitator	<input type="checkbox"/> Dry Plate Electrostatic Precipitator	

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
PM10	100	99.5
TSP	100	99.5
Metals	100	99.5

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

Baghouse contains 11 compartments, each with 256 bags for a total 2,816 bags. Each compartment can be isolated for cleaning (approximate cleaning time 33 minutes per compartment). Air to cloth ratio is 2.05.
 Pressure Drop – 8 to 12 inches of H2O
 Flow rate – 45,000 scfm
 Gas temp – 330 degrees F

Is this device subject to the CAM requirements of 40 C.F.R. 64? Yes No

If Yes, **Complete ATTACHMENT H**

If No, **Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

Pressure Drop

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: 0003	List all emission units associated with this control device. No. 5 Furnace
--	--

Manufacturer: American Air Filter	Model number: NA	Installation date: 1973
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Type of Air Pollution Control Device:

<input checked="" type="checkbox"/> Baghouse/Fabric Filter	<input type="checkbox"/> Venturi Scrubber	<input type="checkbox"/> Multiclone
<input type="checkbox"/> Carbon Bed Adsorber	<input type="checkbox"/> Packed Tower Scrubber	<input type="checkbox"/> Single Cyclone
<input type="checkbox"/> Carbon Drum(s)	<input type="checkbox"/> Other Wet Scrubber	<input type="checkbox"/> Cyclone Bank
<input type="checkbox"/> Catalytic Incinerator	<input type="checkbox"/> Condenser	<input type="checkbox"/> Settling Chamber
<input type="checkbox"/> Thermal Incinerator	<input type="checkbox"/> Flare	<input type="checkbox"/> Other (describe) _____
<input type="checkbox"/> Wet Plate Electrostatic Precipitator	<input type="checkbox"/> Dry Plate Electrostatic Precipitator	

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
PM10	100	99.5
TSP	100	99.5
Metals	100	99.5

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

Baghouse contains 7 compartments, each with 256 bags for a total 1792 bags. Each compartment can be isolated. Bags are cleaned with reverse air provided by a 300 hp fan (cleaning time is approximately 21 minutes per compartment). Air to cloth ratio is 2.05.

Pressure Drop – 8 to 12 inches of H₂O, flow rate – 24,000 scfm, Gas temp – 330 degrees F

Designed for 99.5% removal efficiency. Efficiency is noted as zero since emissions were estimated based on stack tests performed on baghouse outlet.

Is this device subject to the CAM requirements of 40 C.F.R. 64? Yes No

If Yes, **Complete ATTACHMENT H**

If No, **Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

Pressure Drop.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: 0004	List all emission units associated with this control device. No. 7 Furnace
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Manufacturer: American Air Filter	Model number: NA	Installation date: 1973
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Type of Air Pollution Control Device:

<input checked="" type="checkbox"/> Baghouse/Fabric Filter	<input type="checkbox"/> Venturi Scrubber	<input type="checkbox"/> Multiclone
<input type="checkbox"/> Carbon Bed Adsorber	<input type="checkbox"/> Packed Tower Scrubber	<input type="checkbox"/> Single Cyclone
<input type="checkbox"/> Carbon Drum(s)	<input type="checkbox"/> Other Wet Scrubber	<input type="checkbox"/> Cyclone Bank
<input type="checkbox"/> Catalytic Incinerator	<input type="checkbox"/> Condenser	<input type="checkbox"/> Settling Chamber
<input type="checkbox"/> Thermal Incinerator	<input type="checkbox"/> Flare	<input type="checkbox"/> Other (describe) _____
<input type="checkbox"/> Wet Plate Electrostatic Precipitator	<input type="checkbox"/> Dry Plate Electrostatic Precipitator	

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
PM10	100	99.5
TSP	100	99.5
Metals	100	99.5

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

Baghouse contains 7 compartments, each with 256 bags for a total 1792 bags. Each compartment can be isolated. Bags are cleaned with reverse air provided by a 300 hp fan (cleaning time is approximately 21 minutes per compartment). Air to cloth ratio is 2.05.

Pressure Drop – 8 to 12 inches of H₂O, flow rate – 24,000 scfm, Gas temp – 330 degrees F

Designed for 99.5% removal efficiency. Efficiency is noted as zero since emissions were estimated based on stack tests performed on baghouse outlet.

Is this device subject to the CAM requirements of 40 C.F.R. 64? Yes No

If Yes, **Complete ATTACHMENT H**

If No, **Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

Pressure Drop

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: 0006	List all emission units associated with this control device. Crushing System No. 1
--	--

Manufacturer: Wheelabrator	Model number: NA	Installation date: 1952
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Type of Air Pollution Control Device:

<input checked="" type="checkbox"/> Baghouse/Fabric Filter	<input type="checkbox"/> Venturi Scrubber	<input type="checkbox"/> Multiclone
<input type="checkbox"/> Carbon Bed Adsorber	<input type="checkbox"/> Packed Tower Scrubber	<input type="checkbox"/> Single Cyclone
<input type="checkbox"/> Carbon Drum(s)	<input type="checkbox"/> Other Wet Scrubber	<input type="checkbox"/> Cyclone Bank
<input type="checkbox"/> Catalytic Incinerator	<input type="checkbox"/> Condenser	<input type="checkbox"/> Settling Chamber
<input type="checkbox"/> Thermal Incinerator	<input type="checkbox"/> Flare	<input type="checkbox"/> Other (describe) _____
<input type="checkbox"/> Wet Plate Electrostatic Precipitator	<input type="checkbox"/> Dry Plate Electrostatic Precipitator	

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
PM10	100	99.5
TSP	100	99.5
Metals	100	99.5

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).
 This control device represents one of two baghouses operating parallel to one another.
 Pressure Drop – 3 to 7 inches of H₂O
 Flow rate – 8,000 scfm
 Gas temp – 70 degrees F

Is this device subject to the CAM requirements of 40 C.F.R. 64? Yes No
 If Yes, **Complete ATTACHMENT H**
 If No, **Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.
 Pressure Drop

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: 0008	List all emission units associated with this control device. Crushing System No. 2
--	--

Manufacturer: Norblo	Model number: NA	Installation date: 1968
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Type of Air Pollution Control Device:

<input checked="" type="checkbox"/> Baghouse/Fabric Filter	<input type="checkbox"/> Venturi Scrubber	<input type="checkbox"/> Multiclone
<input type="checkbox"/> Carbon Bed Adsorber	<input type="checkbox"/> Packed Tower Scrubber	<input type="checkbox"/> Single Cyclone
<input type="checkbox"/> Carbon Drum(s)	<input type="checkbox"/> Other Wet Scrubber	<input type="checkbox"/> Cyclone Bank
<input type="checkbox"/> Catalytic Incinerator	<input type="checkbox"/> Condenser	<input type="checkbox"/> Settling Chamber
<input type="checkbox"/> Thermal Incinerator	<input type="checkbox"/> Flare	<input type="checkbox"/> Other (describe) _____
<input type="checkbox"/> Wet Plate Electrostatic Precipitator	<input type="checkbox"/> Dry Plate Electrostatic Precipitator	

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
PM10	100	99.5
TSP	100	99.5
Metals	100	99.5

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).
 This control device represents one of two baghouses operating parallel to one another.
 Pressure Drop – 3 to 7 inches of H2O
 Flow rate – 10,000 scfm
 Gas temp – 70 degrees F

Is this device subject to the CAM requirements of 40 C.F.R. 64? Yes No
 If Yes, **Complete ATTACHMENT H**
 If No, **Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

Pressure Drop

ATTACHMENT H
COMPLIANCE ASSURANCE MONITORING (CAM) FORMS

ATTACHMENT H - Compliance Assurance Monitoring (CAM) Plan Form

For definitions and information about the CAM rule, please refer to 40 CFR Part 64. Additional information (including guidance documents) may also be found at <http://www.epa.gov/ttn/emc/cam.html>

CAM APPLICABILITY DETERMINATION

1) Does the facility have a PSEU (Pollutant-Specific Emissions Unit considered separately with respect to EACH regulated air pollutant) that is subject to CAM (40 CFR Part 64), which must be addressed in this CAM plan submittal? To determine applicability, a PSEU must meet all of the following criteria (*If No, then the remainder of this form need not be completed*):

YES NO

- a. The PSEU is located at a major source that is required to obtain a Title V permit;
- b. The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant that is NOT exempt;

LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:

- NSPS (40 CFR Part 60) or NESHAP (40 CFR Parts 61 and 63) proposed after 11/15/1990.
 - Stratospheric Ozone Protection Requirements.
 - Acid Rain Program Requirements.
 - Emission Limitations or Standards for which a WVDEP Division of Air Quality Title V permit specifies a continuous compliance determination method, as defined in 40 CFR §64.1.
 - An emission cap that meets the requirements specified in 40 CFR §70.4(b)(12).
- c. The PSEU uses an add-on control device (as defined in 40 CFR §64.1) to achieve compliance with an emission limitation or standard;
 - d. The PSEU has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the Title V Major Source Threshold Levels; AND
 - e. The PSEU is NOT an exempt backup utility power emissions unit that is municipally-owned.

See following page for explanation

BASIS OF CAM SUBMITTAL

2) Mark the appropriate box below as to why this CAM plan is being submitted as part of an application for a Title V permit:

RENEWAL APPLICATION. ALL PSEUs for which a CAM plan has NOT yet been approved need to be addressed in this CAM plan submittal.

INITIAL APPLICATION (submitted after 4/20/98). ONLY large PSEUs (i. e., PSEUs with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels) need to be addressed in this CAM plan submittal.

SIGNIFICANT MODIFICATION TO LARGE PSEUs. ONLY large PSEUs being modified after 4/20/98 need to be addressed in this cam plan submittal. For large PSEUs with an approved CAM plan, Only address the appropriate monitoring requirements affected by the significant modification.

40CFR64 – Compliance Assurance Monitoring (CAM). The Electric Arc Furnaces are subject to SO₂ limits in accordance with 45CSR10, however there are no control devices used to comply with the limit, thus the Furnaces are not pollutant specific emissions units (PSEUs) for SO₂ in accordance with 40 CFR §64.2(a)(2). The Electric Arc Furnaces, the crushing and screening equipment, and fugitive dust sources are subject to the Ferroalloys Production MACT which regulates PM emissions, therefore these sources are not subject to CAM for PM in accordance with 40 CFR §64.2(b)(1)(i).

Compliance Assurance Monitoring Review

I. CAM Submittal Requirements

Any "No" response indicates the CAM submittal does not meet the requirements of 40 CFR part 64.

64.4(a) Indicator Ranges, Designated Conditions, and Performance Criteria			
<i>Does the submittal contain:</i>	Yes	No	NA
1. Indicators that satisfy the design criteria at §§ 64.3(a)(1)-(2)?			
2. Ranges or designated conditions for the indicators, or the process by which such indicator ranges or designated conditions be established?			
3. Performance criteria that satisfy § 64.3(b)? <i>(see § 64.3(b) below)</i>			
4. Indicator ranges and performance criteria that will be used pursuant to § 64.3(d) for monitoring to be conducted by CEMS, COMS or PEMS ? <i>(if applicable; see § 64.3(d) below)</i>			

64.3(b) Performance Design Criteria			
<i>Does the submittal contain:</i>	Yes	No	NA
5. Specifications that provide for obtaining data representative of the emissions or parameters being monitored (e.g., detector location, installation specifications)?			
6. Quality assurance and quality control practices that are adequate to ensure the continuing validity of the data?			
7. Specifications for the frequency of monitoring? <i>(see 11 and 12 below)</i>			
8. Specifications for the data collection procedures that will be used?			
9. For new or modified monitoring equipment, verification procedures to confirm the operational status of the monitoring? <i>(if applicable)</i>			
10. Specifications for the data averaging period for determining whether an excursion or exceedance has occurred? <i>(if applicable)</i>			
11. For large PSEUs , specifications for collecting four or more data values per hour (or a reduced data collection frequency approved pursuant to 64.3(b)(4)(ii)) on each parameter monitored and for averaging the values, as applicable, over the period determined pursuant to 64.3(b)(4)(i)? <i>(if applicable)</i>			
12. For other than large PSEUs , specifications for collecting one or more data values at least once per day ? <i>(if applicable)</i>			

64.3(d) Special Criteria for CEMS/COMS/PEMS			
<i>Does the submittal contain:</i>	Yes	No	NA
13. The use of CEMS, COMS, or PEMS to satisfy part 64 requirements if such systems are already required under other authority of the Clean Air Act or state or local law? <i>(if applicable)</i>			
14. A requirement for reporting exceedances (or excursions if applicable to a COMS used to assure compliance with a particulate matter standard), consistent with any period for reporting of exceedances in an underlying requirement (or consistent with the averaging period established pursuant to 64.3(b)(4) if an underlying requirement does not contain a provision for establishing an averaging period)? <i>(if applicable)</i>			
15. For COMS used to assure compliance with a particulate matter standard, an indicator range consistent with paragraph 64.3(a)? <i>(if applicable)</i>			

64.4(b) Justification			
<i>Does the submittal contain:</i>	Yes	No	NA
16. Justification for the proposed elements of the monitoring?			
17. All data used to support the justification?			
18. Explanation of any differences from manufacturer recommendations for performance specifications proposed to satisfy § 64.3(b)(2) or (3)? <i>(if applicable)</i>			
19. Justification for the use of any “ presumptively acceptable monitoring ” approach? <i>(if applicable)</i>			

64.4(c) Existing Operating Parameter Data			
<i>Does the submittal contain:</i>	Yes	No	NA
20. Existing operating parameter data obtained during compliance or performance testing, a test plan , or engineering assessment ? <i>(see 22 and 23 below)</i>			
21. Documentation that no changes to the PSEU, including the control device and capture system, have taken place since any performance or compliance tests were conducted? <i>(if applicable)</i>			

64.4(d) Test Plan and Schedule for Obtaining Data

<i>Does the submittal contain:</i>	Yes	No	NA
22. If there are no existing test data, either: - a test plan and schedule for obtaining such data, or - indicator ranges (or procedures for establishing indicator ranges) that rely on engineering assessments and other data ? <i>(if applicable)</i>			
23. If indicator ranges (or procedures for establishing indicator ranges) that rely on engineering assessments and other data are used (rather than test data or a test plan and schedule for obtaining data), a demonstration that factors specific to the type of monitoring, control device, or PSEU make compliance or performance testing unnecessary to establish indicator ranges? <i>(if applicable)</i>			

64.4(e) Plan and Schedule for Installation & Testing of Equipment

<i>Does the submittal contain:</i>	Yes	No	NA
24. A plan and schedule for installing, testing and performing any other appropriate activities prior to use of the monitoring? <i>(if applicable)</i>			

II. CAM Permit Content Requirements

Any "No" response indicates the title V permit does not meet the requirements of 40 CFR part 64.

64.6(c) Minimum Requirements			
<i>Does the permit specify:</i>	Yes	No	NA
1. Indicator(s) to be monitored?			
2. Means or device to be used to measure the indicator(s)?			
3. Performance requirements established to satisfy § 64.3(b) or (d)?			
4. Means by which the owner or operator will define an exceedance or excursion ?			
5. Obligation to conduct the monitoring and fulfill the other obligations specified in §§ 64.7 through 64.9?			
6. Minimum data availability requirement? <i>(if applicable)</i>			

64.6(d) Enforceable Schedule			
<i>Does the permit specify:</i>	Yes	No	NA
7. An enforceable schedule for any required installation, testing, or final verification of operational status? <i>(if applicable)</i>			

64.6(e) Submittal Disapproved by Permitting Authority			
<i>Does the permit specify:</i>	Yes	No	NA
8. At a minimum, monitoring that satisfies § 70.6(a)(3)(i)(B) if the permitting authority disapproved the proposed monitoring? <i>(if applicable)</i>			
9. A compliance schedule for the source owner to submit an acceptable plan if the permitting authority disapproved the proposed monitoring? <i>(if applicable)</i>			

Attachment
Material Safety Data Sheets
(MSDS)

Material Safety Data Sheet

Prepared by Chem Alert

Product Name **MANGANESE ORE (PILBARA MANGANESE)**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name PILBARA MANGANESE PTY LTD
Address 28 Ventnor Avenue, West Perth WA, 6005, AUSTRALIA
Telephone (08) 9321 3633
Fax (08) 9321 3644
Emergency (08) 9321 3633
Email / Web cml@consminerals.com.au

Synonyms MANGANESE FINES ORE, MANGANESE LUMP ORE.

Uses ALLOY MANUFACTURE, CHEMICAL PRODUCTION.

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO NOHSC CRITERIA
NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

Risk And Safety Phrases Risk and Safety Phrases are standardised phrases allocated to Hazardous Substances. Risk phrases convey a general description of the physicochemical, environmental and health hazards of a substance. Safety phrases provide information on safe storage, handling, disposal, personal protection and first aid.

RISK PHRASES
R20/22 Harmful by inhalation and if swallowed.

SAFETY PHRASES
S2 Keep out of reach of children.
S25 Avoid contact with eyes.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Formula	Conc.	CAS No.
BRAUNITE	4MnO.3MnO2.SiO2	30 - 60%	Not Available
HAUSMANITE	Mn.Mn2O4	30 - 60%	Not Available
PSILOMELANE	Ba.Mn.Mn8O16(OH)	<1%	Not Available
BIXBYITE	(MnFe)2-O3	Not Available	Not Available
PYROLUSITE (MNO2)	MnO2	30 - 60%	Not Available

4. FIRST AID MEASURES

Eye Flush gently with running water. Seek medical attention if irritation persists.

Inhalation If over exposure occurs leave exposure area immediately. If irritation persists, seek medical attention.

Skin Gently flush affected areas with water.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor. If swallowed, do not induce vomiting. Ingestion is considered unlikely due to product form.

Advice To Doctor Treat symptomatically.

First Aid Facilities Eye wash facilities should be provided.

Colour
Rating
AMBER

Material Safety Data Sheet

Prepared by Chem Alert

Product Name **MANGANESE ORE (PILBARA MANGANESE)**

5. FIRE FIGHTING MEASURES

Flammability Non flammable. May ignite in contact with incompatible materials. May evolve toxic gases (manganese oxides) when heated to decomposition.

Fire and Explosion Non flammable. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

Extinguishing Non flammable. Use fire fighting measures as applicable to the surrounding fire.

Hazchem Code None Allocated

6. ACCIDENTAL RELEASE MEASURES

Spillage If spilt (bulk), contact emergency services if appropriate. Wear dust-proof goggles, PVC/rubber gloves, a Class P1 (Particulate) respirator (where an inhalation risk exists), coveralls and rubber boots. Clear area of all unprotected personnel. Collect and place in sealable containers for disposal. Avoid generating dust. If no contamination or immediate hazard exists (eg. presence of incompatible materials), ore may be collected and returned to bulk store for reuse or disposal.

7. HANDLING AND STORAGE

Handling Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

Storage Store in cool, dry, well ventilated area, removed from organics, oxidising agents, hydrogen sulfide, heat sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation Do not inhale dust/ powder. Use with adequate natural ventilation. Where a dust inhalation hazard exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard. Water suppression may be used to control dust.

Exposure Standards BRAUNITE (Not Available)
ES-TWA : 1 mg/m3 Manganese compounds

HAUSMANITE (Not Available)
ES-TWA : 1 mg/m3 Manganese compounds

PSILOMELANE (Not Available)
ES-TWA : 1 mg/m3 Manganese compounds

BIXBYITE (Not Available)
ES-TWA : 1 mg/m3 Manganese compounds

PPE Wear dust-proof goggles and PVC or rubber gloves. When using large quantities or where heavy contamination is likely, wear coveralls. Where an inhalation risk exists, wear a Class P1 (Particulate) Respirator.



Colour
Rating
AMBER

Product Name **MANGANESE ORE (PILBARA MANGANESE)**

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: DARK GREY TO BLACK SOLID
Odour: ODOURLESS
pH: NOT AVAILABLE
Vapour Pressure: NOT AVAILABLE
Vapour Density: NOT AVAILABLE
Boiling Point: NOT AVAILABLE
Melting Point: 1564 C
Evaporation Rate: NOT RELEVANT
Solubility (water): INSOLUBLE
Specific Gravity: > 3.2
% Volatiles: NOT AVAILABLE
Flammability: NON FLAMMABLE
Flash Point: NOT AVAILABLE
Upper Explosion Limit: NOT RELEVANT
Lower Explosion Limit: NOT RELEVANT
Autoignition Temperature: NOT AVAILABLE

10. STABILITY AND REACTIVITY

Reactivity Oxidising agent. May ignite in contact with incompatible materials, including organics, oxidising agents (peroxides) and hydrogen sulfide. Specific incompatibilities reported for manganese dioxide include: violent reaction when heated with aluminium; potentially explosive reaction with hydrogen peroxide, peroxomonosulfuric acid, chlorates (if heated) or anilinium perchlorate; may ignite with hydrogen sulfide; reacts violently with potassium azide (when warmed); diboron tetrafluoride; incandescent reaction with chlorine trifluoride; vigorous reaction with hydroxylammonium chloride (Sax). This ore is stable under normal conditions of storage and use.

Decomposition Products May evolve toxic gases (manganese oxides) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary Low to moderate toxicity. Use safe work practices to avoid dust inhalation. Chronic over exposure to manganese dust at high levels may result in manganese poisoning (manganism), a progressively disabling brain disease, which in its latter stages resembles Parkinsons disease. Symptoms may include lack of appetite, fatigue and changes in speech, balance and personality. Further symptoms may include a mask-like facial expression and tremors.

Eye Low irritant. Exposure may result in irritation and lacrimation.

Inhalation Low irritant - toxic. Over exposure may result in mild respiratory irritation. Dusts enter the respiratory tract and become deposited in the major body organs. Chronic exposure may result in manganese poisoning, a disabling, usually progressive disorder of the central nervous system with symptoms resembling Parkinsonism.

Skin Low irritant. Prolonged and repeated contact with the skin may result in mild irritation.

Ingestion Low toxicity. Due to product form, ingestion is considered unlikely, however contamination via hand mouth transfer may result in gastrointestinal irritation. Maintain good personal hygiene standards.

12. ECOLOGICAL INFORMATION

Environment Manganese ore is a naturally occurring component of the earth's crust. Not expected to have adverse effects on the environment. Avoid discharge into sewers or waterways.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Collect and place in sealable containers and dispose of to an approved landfill site. Contact the manufacturer for additional information.

Colour
Rating
AMBER

Material Safety Data Sheet

Prepared by Chem Alert

Product Name **MANGANESE ORE (PILBARA MANGANESE)**

13. DISPOSAL CONSIDERATIONS cont.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

Transport Not classified as a Dangerous Good according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

UN Number None Allocated

DG Class None Allocated

Subsidiary None Allocated

Risk(s)

Packing Group None Allocated

Hazchem Code None Allocated

15. REGULATORY INFORMATION

AICS All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

Poison Schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

16. OTHER INFORMATION

Additional Information RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

ABBREVIATIONS:

mg/m³ - Milligrams per cubic metre

ppm - Parts Per Million

TWA/ES - Time Weighted Average or Exposure Standard.

CNS - Central Nervous System

NOS - Not Otherwise Specified

pH - relates to hydrogen ion concentration - this value will relate to a scale of 0 - 14, where 0 is highly acidic and 14 is highly alkaline.

CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.

M - moles per litre, a unit of concentration.

IARC - International Agency for Research on Cancer.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this Chem Alert report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a Chem Alert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

COLOUR RATING SYSTEM: Chem Alert reports are assigned a colour rating of Green, Amber or Red for the purpose of providing users with a quick and easy means of determining the hazardous nature of a product. Safe handling recommendations are provided in all Chem Alert reports so as to clearly identify how users can control the hazards and thereby reduce the risk (or likelihood) of adverse effects. As a general guideline a Green colour rating indicates a low hazard, an Amber colour rating indicates a moderate hazard and a Red colour rating indicates a high

**Colour
Rating
AMBER**

Material Safety Data Sheet

Prepared by Chem Alert

Product Name **MANGANESE ORE (PILBARA MANGANESE)**

16. OTHER INFORMATION cont.

hazard.

Report Reviewed 1st January 2006

Date Printed 11th April 2006

Report Status Chem Alert reports are compiled as an independent source of information by RMT's scientific department. The information is based on the latest chemical and toxicological research, and in compliance with relevant standards, guidance notes and legislation (where applicable). The Chem Alert report is not intended as a replacement to the manufacturer's original MSDS that is provided to Chem Alert subscribers for convenience. In many instances, Chem Alert reports are compiled on behalf of manufacturers, in which case they serve as the "Manufacturer's MSDS" and are clearly identified as such on the relevant reports.

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**Colour
Rating
AMBER**



Clark Coal and Coke Laboratory
1801 Route 51 South Jefferson Hills. PA 15025

FORM REVISION NO. 1 REV. DATE:11/17/09
APPD. BY: JAA
EFFECTIVE DATE: 6-10-09 ORIGINATOR: JAA
Phone: 412-387-1001
Fax: 412-387-1028

Material Safety Data Sheet for Bituminous Coal

Section I-Material Identification and Information

- *Identify:* Coal, bituminous coal, (Coal is a naturally occurring black or dark-brown combustible material typically used as a fuel, and composed of a number of solid and gaseous organic materials including carbon, hydrogen, oxygen, and sulfur.)
- *Manufacture:* Naturally occurring material.

Section II- Hazardous Ingredients

- *Hazardous Components:* Coal dust,
 - *OSHA PEL:* 2.4 mg/m³ TWA (<5% (SiO₂) for respirable fraction
 - *MSHA PEL:* 2.0 mg/m³ TWA (<=5% SiO₂) for respirable fraction
 - *NIOSH REL:* 1.0 MG/m³ TWA for respirable fraction
 - *ACGIH TLB:* 0.9 mg/m³ TWA for respirable fraction

Section III-Physical/ Chemical Properties

- *Appearance and odor:* Black odor dark-brown solid with little or no odor
- *Specific gravity (H₂O=1):* 1.2 to 1.7
- *Solubility in water:* Negligible

Section IV-Fire and Explosion Hazard Data

- *Flash point (Method Used):* Not applicable.
- *Flammable limits in air:* LEL for coal dust in air is 0.05 oz/ft³.
- *Extinguishing media:* For small fires, use dry chemical, sand, earth, water spray, or foam. For larger fires involving coal stockpiles in bunker, silos, or bins, heated coal foam. For larger fires involving coal stockpiles in bunkers, silos, or bins, heated coal or fire condition may be resolved by drawing down the bin and removing the heated deposits. Once removed, water, dry chemical, etc. at be applied to smother the fire or fire may be left to smother coal fires in confined spaces.
- *Special Fire Fighting Procedures:* Extreme caution should be practiced when using water on large areas of hot coal in confined area to prevent the accumulation of hazardous amounts of water gas that contain varying amounts of explosive hydrogen and carbon monoxide. Note that coal stockpiles should be properly compacted to prevent heating and subsequent spontaneous combustion of coal within the stockpile.
- *Unusual Fire Explosion Hazards:* Accumulation of methane gas from coal in confined or poorly ventilated areas may create an explosion hazard when an ignition source is present. In addition, coal dust suspended in air, may create a dust explosion, or contribute to the propagation or severity of an explosion when an ignition source is present

Section V- Reactivity Data

- *Stability: Stable:* under normal conditions of use. (see "Section IV-Fire and Explosion Hazard Data")
- *Conditions to avoid:* Oxidizing agents including heat, sparks, and open flame.
- *Incompatibility:* None noted.



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- *Hazardous decomposition or byproducts:* Burning of coal may produce carbon monoxide, carbon dioxide, sulfur oxides, and other byproducts of combustion. Explosive methane gas may be released from the types of coal during normal conditions of use and storage.
- *Hazardous polymerization:* Will not occur.

Section VI- Health Hazard Data

- *Route (s) of entry:* Primarily inhalation for respirable coal dust.
- *Signs and symptoms of exposure:*
 - Health hazards (acute): coal dust may be irritating to the eyes, skin, and respiratory tract.
 - Health hazards (chronic): Continued exposure to respirable coal dust over prolonged periods of time above exposure limits, may lead to emphysema bronchitis, and pneumoconiosis
 - Preexisting respiratory conditions may be aggravated by overexposure to coal dust.
- *Carcinogenicity classification:* None noted.
- *Emergency and first aid procedures:*
 - *Eyes:* Flush repeatedly with water and avoid rubbing. If irritation persists, consult a physician
 - *Skin:* Wash with soap and water.
 - *Inhalation:* If overexposed, remove to fresh air.

Section VII- Precautions for Safe Handling and Use

- *Steps to be taken in case material is released or spilled:* Where possible, recover for reuse. Wear appropriate personal protective equipment and avoid generation and inhalation of airborne dust during cleanup efforts
- *Waste disposal method:* Dispose of in accordance with applicable federal, state, and local regulations.
- *Precautions to be taken in handling and storing:* Use of water sprays and ventilation may be used to minimize generation and control airborne dust during handling and storing. Stockpiles of coal should be properly compacted to prevent heating and the subsequent spontaneous combustion of coal within the stockpile.

Section VIII- Control Measures

- *Respiratory protection:* NIOSH approved particulate respirator if exposure limits for respirable coal dust are exceeded.
- *Ventilation:* Local exhaust ventilation and water sprays are preferred methods of dust control.
- *Protective gloves:* Gloves made of leather, rubber, or other materials designed for the handling of a protection from granular materials, are recommended.
- *Eye Protector:* Safety glasses at a minimum are recommended.
- *Other protective clothing or equipment:* Additional protection such as steel-toed or metatarsal footwear and metacarpal footwear and metacarpal gloves may be needed for the handling of larger coal sizes.
- *Work/ hygienic practices:* Observe good personal hygiene habits while working with or around coal and coal dust.

Section IX- Label Information

- *Identify:* Coal, bituminous coal.
- *Appropriate Hazard Warnings:*



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- *Physical Hazard:* Coal is a combustible material. Coal dust, when suspended in air, may create a dust explosion or contribute to the propagation or severity of an explosion when ignition source is present.
- *Health Hazard:* Coal dust may be irritating to the eyes, skin and respiratory tract. Continued exposure to respirable coal dust over prolonged periods of time above exposure limits, may lead to emphysema, bronchitis, and pneumoconiosis.
- Prepared by: CONSOL Energy Inc.
1800 Washington Road
Pittsburg, PA 15241-1421
(412-) 831-4000

Section X- Other Information

Disclaimer of Expressed and Implied Warranties:

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representation as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose (s).

Distributed by: Technical Marketing Services
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Pittsburgh, PA 15241-1421
(412) 831-4000



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 Tel (603) 431-1000 FAX (603) 430-7290
 An Axel Johnson, Inc. Company

MATERIAL SAFETY DATA SHEET

**BITUMINOUS
 COAL**

Content Last Revised 1/94; 10/12/00;
 07/26/02; 06/05
 4 pages.

SECTION 1 - MATERIAL IDENTIFICATION		24 HOUR EMERGENCY INFORMATION	
PRODUCT / CHEMICAL NAME:	BITUMINOUS COAL	Sprague:	603-431-1000
		Chemtrec:	800-424-9300
PRODUCT / CHEMICAL SYNONYMS:	WASHED COAL, CLEAN COAL, SOFT COAL	HMIS / NFPA HAZARD RATING	
CHEMICAL FAMILY / FORMULA:	ALIPHATIC AND AROMATIC HYDROCARBONS / VARIABLE	4=EXTREME	
MATERIAL USE OR OCCURRENCE:	-	3=SERIOUS	
		2=MODERATE	
		1=SLIGHT	
		0=MINIMAL	

SECTION 2 - INGREDIENTS & RECOMMENDED OCCUPATIONAL EXPOSURE LIMITS			
COMPOSITION	% WEIGHT AS RECEIVED	OSHA PEL	ACGIH TLV
MOISTURE	(Typical) 1.0 - 10.0	None established.	None established.
ASH	4.0-20.0	15 mg/M ³ as nuisance dust less than 1% quartz	10 mg/M ³ as nuisance dust less than 1% quartz
TOTAL SULFUR	0.5-2.2	5.0 ppm as SO ₂	2.00 ppm as SO ₂
FIXED CARBON	50.0-72.0	None established	None established
VOLATILE MATTER* INCLUDING ELEMENTAL AND COMPOUNDS OF:	17.0-37.0		
HYDROGEN	4.8-5.3	None established	None established
NITROGEN	1.2-1.6	None established	None established
CHLORINE	.08-.19	1.0 ppm	1.0 ppm
COAL DUST		2.4 mg/ M ³ respirable fraction, < 5% SiO ₂ 10 mg/ M ³ > 5% SiO ₂ % SiO ₂₊₂	2 mg/M ³ respirable fraction, < 5% SiO ₂ 10 mg/ M ³ > 5% SiO ₂ % SiO ₂₊₂

SECTION 3 - PHYSICAL DATA			
IGNITION TEMPERATURE:	260°-365°F	% VOLATILITY BY VOLUME:	Negligible
MELTING POINT:	750° F	VAPOR DENSITY (AIR = 1):	N/A
AVERAGE SPECIFIC GRAVITY (H₂O = 1):	1.43	SOLUBILITY IN WATER:	Non-soluble
HETEROGENOUS - CARBONACEOUS			
APPEARANCE & ODOR: Irregular, rectangular-shaped chunks or particles, dense, grayish-black to black color with slight, minimal dank odor.			

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: When exposed to flame of temperatures in excess of 260° F.

EXTINGUISHING MEDIUM: Foam, carbon dioxide, dry chemical, halon, and water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Use washdown and spread out method.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Susceptible to spontaneous combustion. Highly combustible and/or explosive when in dust or powder form.

SECTION 5 - HEALTH DATA

TOXICOLOGICAL TEST DATA: Coal may liberate various polycyclic aromatic hydrocarbons (PAH's) upon thermal decomposition. There is no clear evidence that coal is carcinogenic to man or experimental animals because of their polycyclic aromatic hydrocarbon content. However, there is evidence that these PAH's may play an active role in the generation of lung cancer seen in cigarette smokers or tar-roofing workers.

Coal may release small quantities of methane gas over a period of time. Progression of tuberculosis is greatly increased in pneumoconiosis but susceptibility is apparently not increased.

ACUTE HEALTH EFFECTS		CHRONIC HEALTH EFFECTS
INHALATION	The principal health hazard associated with coal occurs during its mining and transport. Coal workers' pneumoconiosis (CWP) can occur in miners after as little as 15 years of excessive inhalation of respirable coalmine dust. Respirable quartz particles and free silica may be co-implicated. Coal dust is deposited in the lungs where its site of action is the lung parenchyma, lymph nodes and hila. The severity of the disease is directly related to the amount of coal dust in the lungs. In the simple stages, the disease is detectable by x-ray as round, irregular "macules" of 1-5 mm. This stage typically does not change lung function or shorten life.	The chronic stage of CWP, however, involves massive pulmonary fibrosis that does impair pulmonary function and shorten life. Chronic Bronchitis (lung inflammation, coughing attacks, difficult breathing, etc.) and emphysema can result from excessive coal dust inhalation. Rheumatoid arthritis can be exacerbated by pneumonias leading to rapidly developing lung damage (Caplan's Syndrome).
INGESTION	May cause irritation.	No data available
SKIN CONTACT	May cause irritation.	No data available.
EYE CONTACT	Irritation of the eye.	No data available

FIRST AID



PROCEDURES

First aid procedures generally don't apply to this product. Maintain exposure to coal dust according to applicable regulatory standards.

**MATERIAL SAFETY DATA SHEET****BITUMINOUS
COAL**Content Last Revised 1/94: 10/12/00: 07/26/02;
06/05 4 pages**SECTION 6 - REACTIVITY DATA**

STABILITY:	Stable if properly stored to inhibit oxidation.
HAZARDOUS POLYMERIZATION:	Hazardous polymerization has not been known to occur under normal temperatures and pressures. However, coal dust may react slowly with oxygen at room temperature. Heat accelerates the process, which could lead to spontaneous ignition in piles of coal dust.
CONDITIONS TO AVOID:	<ol style="list-style-type: none">1. Allowing coal to stand in water.2. Storing coal on loose or porous ground.3. Piling coal around upright steel or wooden posts, crane supports, underground drains, steam or hot water lines or areas where there is refuse such as wood, straw, growing vegetation or other organic material.4. Storage in closed hampers, bins, receptacles, etc. without positive ventilation.
INCOMPATIBLES:	
TYPICAL DECOMPOSITION PRODUCTS:	May liberate hydrogen, methane, carbon monoxide, oxides of sulfur and hydrogen, coal tar pitch volatiles upon thermal decomposition.

SECTION 7 - SPECIAL PROTECTION

RESPIRATORY PROTECTION:	Use with adequate ventilation.
VENTILATION	LOCAL EXHAUST: MSHA/NIOSH approved dust respirator. Appropriate respirator depends upon type and magnitude of exposure. MECHANICAL (General): Recommended for use in enclosed or semi-enclosed work areas.
EYE PROTECTION:	Splash goggles or shields with safety glasses
PROTECTIVE GLOVES:	Neoprene, PVC
OTHER PROTECTIVE CLOTHING OR EQUIPMENT:	Employee must wear appropriate impervious clothing and equipment to prevent repeated or prolonged skin contact with this substance.

SECTION 8 - SPECIAL PRECAUTIONS

PRECAUTIONS FOR SAFE HANDLING & STORAGE:	Do not permit accumulation of dust or spillage. See also conditions to avoid, above.
SPILL AND LEAK PROCEDURES:	Cleanup by excavation, vacuum collection or washdown.
WASTE DISPOSAL METHOD:	<ol style="list-style-type: none">1. Incinerate in combustion device or system.2. Dispose in approved, regulated landfill.

SECTION 9 - DOT HAZARDOUS MATERIAL INFORMATION

PROPER SHIPPING NAME: BITUMINOUS COAL	REQUIRED PLACARDING: NONE
HAZARD CLASS: Non-Hazardous	PACKING GROUP (P.G.): III N.A./U.N. NUMBER: NONE

**MATERIAL SAFETY DATA SHEET****BITUMINOUS
COAL**Content Last Revised 1/94: 10/12/00: 07/26/02;
06/05 4 pages**SECTION 10 - EPA SARA TITLE III INFORMATION**

SECTION 311/312	ACUTE: N/A	CHRONIC: N/A	
HAZARD CLASSIFICATION: Non-Hazardous	FIRE: N/A	PRESSURE: N/A	REACTIVE: N/A

SECTION 11 - REMARKS

This material contains fused polycyclic hydrocarbons. The OSHA interpretation of coal tar pitch volatiles (Section 1910, 1002) is as follows: "Coal tar pitch volatiles include the fused polycyclic hydrocarbons which volatilize from the distillation residues of coal, petroleum, wood, and other organic matter." The OSHA PEL and ACGIH TLV for coal tar pitch volatiles is 0.2 mg/M³ (basis one soluble fraction).

SECTION 12 - ADDITIONAL REGULATORY DATA

REPORTABLE COMPONENTS: FEDERAL EPA	%	SARA RQ	CERCLA RQ	RCRA NO.
BITUMINOUS COAL	100	-----	-----	-----

NOTE: OSHA Regulations 29 CFR 1910.1200 (Hazard Communication) do not consider coal as a "hazardous material" and a Material Safety Data Sheet (MSDS) is not required. The information contained herein is based on data available at this time and is believed to be accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Since information contained herein may be applied under conditions beyond our control and with which we may be unfamiliar, no responsibility is assumed for the results of its use. The person receiving this information shall make his own determination of the suitability of the material for his particular purpose.

1. Identification of the Substance/Preparation and Company
Product name: ELKEM CARBON ELECTRODE PASTE
Application: Søderberg electrodes
Address/Phone: Elkem Carbon (China)
 325 Shengli East Street, Dawukou, Shizuishan City
 Ningxia, P.R. China 753000
 Phone: +86 952 203 1359
 Telefax: +86 952 203 9426
 e-mail: snow.wang@elkem.com
Contact person: Snow Wang

Emergency phone No.: Not applicable
2. Hazards Identification

The product is unlikely to cause harmful effects when handled and stored as instructed. Prolonged and repeated inhalation of fumes from heated paste as well as prolonged exposure and/or skin contact may cause cancer.

Prolonged exposure (years) to dusty handling conditions may cause pneumoconiosis (disease caused by dust particles in the lungs). Using correct protection equipment may eliminate this risk.
 Contaminated skin exposed to sunlight may cause hyper pigmentation and eczema (phototoxic effect).

3. Composition/Information about Ingredients
Synonyms: -
IUPAC-name: -

Composition	CAS no.	EINECS No.	Weight%	Danger Class	R & S-phrases
Calcined anthracite	68187-59-7	269-111-1	70-85	-	-
Coal tar pitch	65996-93-2	266-028-2	15- 30	T, Car. Cat. 2	R-45-36/38 S-53-36-44

4. First Aid Measures
Inhalation: Remove to fresh air. Seek medical advice in case of persistent discomfort.

Skin contact: Remove contaminated clothes. Wash thoroughly with soap and water. Avoid sunlight.

Eye contact: Rinse with water for at least 15 minutes. Seek medical advice in case of persistent discomfort.

Safety Data Sheet

5. Fire Fighting Measures

Extinguishing type: Water mist.

6. Accidental Release Measures

Must be collected in suitable packaging. Avoid dusting. Remaining refuse must be disposed of at approved special refuse station. Special refuse classification: EAK-code 050603. Hardened paste (heat treatment exceeding 800°C) may be disposed of at approved waste site in accordance with state and local regulations (County Governor/SFT).

7. Handling and Storage

Handling: Avoid skin contact and inhaling of gases from heated paste.
Use safety goggles, gloves, and respirator.
Avoid dust-generating operations.

Storage: To avoid gases containing PAH, storage temperature should not exceed 50°C.
(water cooling may be used).
Provide satisfactory ventilation when storing indoors.

8. Exposure Controls/Personal Protection

A): Occupational exposure controls

Provide satisfactory ventilation when handling paste.

Wear CE-marked respiratory protection with dust filter P2 during operations that entail air-borne dust.

When handling heated paste, use CE-marked respiratory protection with combination filter: Dust filter Type P2 or Type P3, and mask with gas filter Type A (brown), (EN 149 FFP 2S/3S).

Use safety goggles and protective gloves.

Use a barrier lotion on unprotected skin. Observe personal hygiene carefully.

Eye flushing facilities, washrooms and showers facilities should be located near the work place.

	Occupational Exposure Limits (ACGIH, 2007):		ACGIH TLV		Notations
	8 h TWA	15 minute STEL	ppm	mg/m ³	
Coal dust				1	A4
Coal tar pitch volatiles (65996-93-2)					
As benzene soluble aerosol hydrocarbons)			0.2		A1

Safety Data Sheet

B): Environmental exposure controls (Commission directive 1999/30/EC)

Limit Values for particulate matter (PM10)	Averaging period	Limit value
	24 hours	50µg/m ³
	Calendar year	40µg/m ³

9. Physical and Chemical Properties

Color:	Black
Odor:	Coal tar
Appearance:	Solid
Solubility (water):	Insoluble
Solubility (Organic solvents):	Partly soluble
Volatility:	2-4% (0-360°C)
Bulk density:	1550 – 1600 kg/m ³

10. Stability and Reactivity

Conditions to be avoided:
Heating/direct sunlight during storage

Materials to be avoided:

Hazardous decomposition products:
Heating causes release of PAH gases.

11. Toxicological Information

Acute effects:

Inhalation: Fumes and dust may irritate the respiratory tract.

Skin contact: Sunlight on contaminated skin may cause hyper pigmentation and eczema.

Eye contact: Fumes and dust may irritate eyes.

Ingestion: Not applicable.

Chronic effects: Prolonged exposure may cause skin cancer and lung cancer.

Information to medical personnel:

Headache, nausea, and unconsciousness are examples of acute effects which may be caused by inhalation of fumes from heated paste. Periodic medical examinations of PAH exposure should include: Skin examination of exposed body parts, questioning about respiratory/lung symptoms, lung function examination. Prolonged exposure (years) to dusty handling conditions may cause pneumoconiosis (disease caused

Safety Data Sheet

by dust particles in the lungs) which in the long run may develop into fibrosis. Bronchitis and emphysema are suspected, yet not fully proven resulting illnesses. Periodic lung x-rays are recommended, for example, every third year.

12. Ecological Information

This product is classified as harmful to the environment, but is barely mobile in supplied condition. Hardened paste may be disposed of at approved disposal site in accordance with state and local regulations (County Governor/SFT).

13. Disposal Information

Must be collected in appropriate packaging. Remaining refuse must be disposed of at approved special refuse station. Hardened paste may be disposed of at approved disposal site in accordance with state and local regulations (County Governor/SFT). Special refuse classification: EAK-code 05 06 03.

14. Transport Information

UN	-
IMDG	Not subject to classification
ADR/RID	Not subject to classification
ICAO/IATA	Not subject to classification

15. Regulatory Information

Health, fire, explosion:

Labeling: T

R phrases:	R-36/38:	Irritates eyes and skin.
	R-45:	MAY CAUSE CANCER
S phrases:	S-36:	Use protective clothing.
	S-44:	In case of accident or discomfort seek medical advice (show label where possible).
	S-53:	Avoid direct contact – read latest product information before use.

The text of this Data Sheet is prepared in compliance with:
Commission Directive 2001/58/EC and 1994/45/EC

Product Information Sheet

Manganese Carbonate Ore

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name: Manganese Carbonate Ore
Commercial product name: Nsuta Carbonate ore (naturally occurring), Nsuta rhodochrosite
Use of the preparation: This product is used in the manufacture of iron and steel, ferroalloys, and electrolytic manganese dioxide.
Miner: Ghana Manganese Company
Nsuta Mine
Ghana, West Africa

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation: Preparation

Information on ingredients

Chemical name	CAS No.	%	EC Number	Formula	Symbol ¹	R-Phrases ¹	TSCA listed
Manganese Carbonate	598-62-9	60-70	209-942-9	MnCO ₃	-	-	yes
Dolomite	16389-88-1	15-25	240-440-2	MgCO ₃ .CaCO ₃	-	-	yes
Quartz	14808-60-7	10-20	238-878-4	SiO ₂ .Al ₂ O ₃	-	-	yes
Calcite	471-34-1	0-5	207-439-9	CaCO ₃	-	-	yes

Other information: Contains no respirable quartz.
Minimum particle size 200 mesh Tyler.

¹ See section 16.

3. HAZARDS IDENTIFICATION

Physical/chemical hazards: Reacts with strong acids.
Human health hazards: May be harmful after chronic exposure
Environmental hazards: The data available do not support any environmental hazard.

4. FIRST AID MEASURES

Effects and symptoms

Inhalation: Prolonged or repeated exposure may result in health complaints. May be irritating to respiratory system. Exposure may result in depressed respiration, coughing, nausea and sore throat. Prolonged or repeated exposure to large amounts may cause damage to lungs (lung oedema) and may cause damage to central nervous system.

Ingestion: Exposure may result in health complaints. Prolonged or repeated exposure may be irritating to mouth, throat and oesophagus (sore throat, nausea and retching).

Skin contact: Prolonged or repeated exposure may be irritating to skin.

Eye contact: Irritating to eyes. Exposure may result in impaired vision, tears, redness and pain.

First Aid Measures

Inhalation: Remove to fresh air. Consult a doctor in the event of any complaints.

Ingestion: Wash out mouth with water. Encourage drinking water. Consult a doctor in the event of any complaints.

Skin contact: Remove contaminated clothing. Wash off with water and soap. Consult a doctor in the event of any complaints.

Eye contact Wash out with plenty of water. After initial flushing, remove any contact lenses and continue flushing. Consult a doctor in the event of any complaints.

Protection of First Aiders: Avoid exposure. Use appropriate protection (see section 8).

5. FIRE-FIGHTING MEASURES

Extinguishing media
Suitable: All types of extinguishing agent permitted.
Special fire-fighting procedures Dike fire control water for later disposal
Unusual fire/explosion hazards: None.
Protection of fire-fighters: Burning may produce vapours of MnO. Use self-contained breathing apparatus with full-face shield. Full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use appropriate protection (see section 8). Prevent formation of clouds of dust.
Environmental precautions: Prevent dispersion.
Methods for cleaning up: Take up mechanically. Collect spilled material in sealable containers for later disposal. Wash away remainder with plenty of water.

7. HANDLING AND STORAGE

Handling: When handling the product, allow for materials and conditions, which should be avoided (see section 10). Avoid exposure. Use appropriate protection (see section 8). Prevent formation of clouds of dust.
Storage: No special requirements.
Packaging materials
Suitable: Keep in sealable containers (big bags (paper, plastic)).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures: Local exhaust recommended
Hygiene measures: When using do not eat, drink or smoke. Follow good housekeeping practices.

Occupational Exposure Limits

Chemical name	OEL (United Kingdom)
Calcium carbonate	TWA (8 hours): 10 mg/m ³ (inhalable dust) 4 mg/m ³ (respirable dust)
Quartz (SiO ₂)	TWA (8 hours): 0.3 mg/m ³ (respirable dust)
Chemical name	OEL (USA)
Manganese carbonate	ACGIH TLV (8 hours): 0.2 mg/m ³
Calcium carbonate	ACGIH TLV (8 hours): 10 mg/m ³
Quartz (SiO ₂)	ACGIH TLV (8 hours): 0.5 mg/m ³ (respirable dust)

Personal protective equipment

Respiratory system: With sufficient extraction or closed system, breathing apparatus not necessary. In the event of possible exposure: dust filter P2. ^a

Skin and body: Working clothing.
Hands Working gloves (rubber or cotton gloves).
Breakthrough time: > 480 minutes.
Eyes: Dust goggles.

^a Dust filter P2 is standard equipment for (hazardous) dust with OEL-values between 0.1 and 10 mg/m³ (except asbestos).

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Lumpy
Colour:	Light grey
Odour:	Odourless
Melting point:	1200 °C
Boiling point:	Not applicable
Decomposition temperature:	450-800 °C
Flash point:	Not applicable
Vapour pressure:	Not applicable
Bulk density;	1.7 – 2.0 tons/m ³
Solubility in water:	Insoluble

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to avoid:	None
Materials to avoid:	Strong acids and strong oxidising agents
Hazardous reactions:	None
Hazardous decomposition:	
Products	MnO.CO ₂

11. TOXICOLOGICAL INFORMATION

Chemical name:	Manganese carbonate
Acute toxicity – Oral:	Not harmful
Acute toxicity – Inhalation:	May be harmful
Skin irritation:	May be irritating
Eye irritation:	May be irritating
Sensitization:	No sensitizing potential
Carcinogenicity:	No evidence o carcinogenicity
Mutagenicity:	Not available
Reproduction toxicity:	Not available

Chemical name:	Dolomite
Acute toxicity – Oral:	Not harmful
Acute toxicity – Inhalation:	May be irritating
Skin irritation:	May be irritating
Eye irritation:	No sensitizing potential
Sensitization:	No evidence of carcinogenicity
Carcinogenicity:	Not available
Mutagenicity:	Not available
Reproduction toxicity:	

Chemical name:	Quartz
Acute toxicity – Oral:	Not harmful
Acute toxicity – Inhalation:	May be irritating
Skin irritation:	May be irritating
Eye irritation:	No sensitizing potential
Sensitization:	Lclow (rat, 71 W-I): 50 mg/m ³
Carcinogenicity:	IARC classification: group 1
Mutagenicity:	Not available
Reproduction toxicity:	Not available

Other information: The toxicological properties of this product have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

Chemical name: Manganese Carbonate

Mobility: Not applicable
Persistence/degradability: Not applicable
Bioaccumulative potential: Not applicable
Other information: Inert material. No environmental hazards have been reported or known.

Chemical name: Dolomite

Mobility: Not applicable
Persistence/degradability: Not applicable
Bioaccumulative potential: Not applicable
Other information: Inert material. No environmental hazards have been reported or known.

Chemical name: Quartz (SiO₂)

Mobility: Not applicable
Persistence/degradability: Not applicable
Bioaccumulative potential: Not applicable
Other information: Inert material. No environmental hazards have been reported or known.

13. DISPOSAL CONSIDERATIONS

Method of disposal: Disposal according to the local legislation
Waste residues: Keep waste separate and remove depending on local legislation
Contaminated packaging: Keep waste packaging separate and remove depending on local legislation.

14. TRANSPORT INFORMATION

National transport regulations: Free for transport regulations.

15. REGULATORY INFORMATION

EU Regulations
EU Classification
(67/548/EEC-1999/45/EC): This product does not have to be classified according to EU regulations.

National regulations
United Kingdom: No additional national regulations are known to the supplier.
USA:
Sara 313: Manganese carbonate is listed
CERCLA: Manganese carbonate is listed
New Jersey RTK: Manganese carbonate, Quartz are listed

16. OTHER INFORMATION

The information contained in the Product Information Sheet is correct to the best of our knowledge at the date of issue. It is intended as a guide for the safe use, handling, disposal, storage and transportation and is not intended as warranty or as a specification. The information relates only the product specified and may not be suitable for combinations with other materials or in processes other than those specifically described herein.

HISTORY

Date of printing: 06-05-2003
Date of issue: 06-05-2003
Version: 001.00.00

R-Phrases (Risk-phrase) are assigned to dangerous substances and preparations and describe the physical, environmental and human health hazards.

Danger symbols are designed to indicate the danger category of dangerous substances and preparations. Danger symbols and risk phrases are related (assignment of certain R-phrases makes danger symbols obligatory).

Prepared by:

PP 
Jurgen Eijgendaal
(MANAGING DIRECTOR)
GHANA MANGANESE COMPANY LTD.
POST OFFICE BOX 2
NSUTA - WASSAW
WESTERN REGION
GHANA

MATERIAL SAFETY DATA SHEET

I - IDENTIFICATION		
CHEMICAL NAME Limestone	CHEMICAL FORMULA Not Applicable	MOLECULAR WEIGHT Not Applicable
TRADE NAME Crushed Stone		
SYNONYMS Aggregate, Aglime, Fluxing Agent, Manufactured Sand		DOT IDENTIFICATION NO. None

II - PRODUCT AND COMPONENT DATA			
COMPONENT(S) CHEMICAL NAME	CAS REGISTRY NO.	%(Approx)	ACGIH TLV - TWA
Limestone*	1317-85-3*	100	See Section VI
*Composition Varies Naturally - May Contain Quartz	*EPA TSCA Inventory (Same CAS No. As Calcium Carbonate		

III - PHYSICAL DATA	
APPEARANCE AND ODOR Angular grey, white and tan particles ranging in size from powder to boulders. No odor.	SPECIFIC GRAVITY 2.6 - 2.75
BOILING POINT Not applicable	VAPOR DENSITY IN AIR (Air = 1) Not Applicable
VAPOR PRESSURE Not Applicable	% VOLATILE BY VOLUME: 0%
EVAPORATION RATE 0	SOLUBILITY IN WATER 0

IV - REACTIVITY DATA	
STABILITY Stable	CONDITIONS TO AVOID None Known
INCOMPATIBILITY (Materials to avoid) None Known	
HAZARDOUS DECOMPOSITION PRODUCTS None Known	
HAZARDOUS POLYMERIZATION None Known	

V - FIRE AND EXPLOSION HAZARD DATA	
FLASH POINT (Method Used) Not Flammable	FLAMMABLE LIMITS IN AIR Not Flammable
EXTINGUISHING AGENTS None Required	
UNUSUAL FIRE AND EXPLOSION HAZARDS None Known	

VI - TOXICITY AND FIRST AID	
EXPOSURE LIMITS (When exposure to this product and other chemicals is concurrent, the TLV must be defined in the workplace.) Exposure limits vary with the % Quartz in dust. All limits for 8-hr. TWAs in mg/M3. Dust < 1% Quartz: Total (ACGIH & MSHA) = 10 (OSHA=15); Respirable (ACGIH, MSHA, & OSHA) = 5. Dust < 1% Quartz: Total (ACGIH & MSHA) = 30/(% Quartz+3); Total (OSHA) = 30/(% Quartz+2). Respirable (ACGIH, MSHA, & OSHA) = 10/(% Quartz+2). Effects described in this section are believed not to occur if exposures are maintained at or below appropriate TLVs. Because of the wide variation in individual susceptibility, TLVs may not be applicable to all persons and those with medical conditions listed below.	
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE Inhaling respirable dust may aggravate existing respiratory system disease(s) and/or dysfunctions. Exposure to dust may aggravate existing skin and/or eye conditions.	
ACUTE TOXICITY	Primary route(s) of exposure. <input checked="" type="checkbox"/> Inhalation <input type="checkbox"/> Skin Absorption <input type="checkbox"/> Ingestion
Exposure to dust may irritate respiratory system, eyes, and skin.	
FIRST AID <u>Dust in eyes:</u> Flush eyes with running water for 15 minutes. Contact a physician if irritation persists. <u>Dust on previously irritated skin:</u> Wash with soap and water. Contact a physician if irritation is aggravated. <u>Dust inhalation:</u> Remove to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists.	

Chronic exposure to respirable limestone dust in excess of appropriate TLVs has caused pneumoconiosis (Dusty Lung).

Chronic exposure to respirable quartz-containing limestone dust in excess of appropriate TLVs has caused silicosis, a progressive pneumoconiosis.

Symptoms of Silicosis: Not all individuals with silicosis will exhibit symptoms (signs) of the disease. However, silicosis is progressive, and symptoms can appear at any time, even years after exposures have ceased. Symptoms of silicosis may include (but are not limited to): Shortness of breath; difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.

Limestone is not listed as a carcinogen on the NTP, IARC, or OSHA lists of carcinogens.

VII - PERSONAL PROTECTION AND CONTROLS

RESPIRATORY PROTECTION

NIOSH-MSHA approved dust respirators for conditions where dust levels exceed or are likely to exceed appropriate exposure limits. Respirator use must comply with applicable MSHA or OSHA standards, which include provisions for a user training program, respirator repair and cleaning, respirator fit testing, and other requirements.

VENTILATION

Local exhaust or general ventilation adequate to maintain exposures below appropriate TLVs.

SKIN PROTECTION

See "Hygiene" section below

EYE PROTECTION

Safety glasses with side shields should be worn as minimum protection. Dust goggles should be worn when excessively (visible) dusty conditions are present or are anticipated.

HYGIENE

Wash dust-exposed skin with soap and water. Wash work clothes after each use.

OTHER CONTROL MEASURES

Respirable dust levels should be monitored regularly. Dust levels in excess of appropriate TLVs should be reduced by all feasible engineering controls, including (but not limited to) wet suppression, ventilation, process enclosure, and enclosed employee work stations.

VIII - STORAGE AND HANDLING INSTRUCTIONS

Respirable dust may be generated during processing, handling, and storage. The controls identified in Section VII of the MSDS should be applied as appropriate.

IX - SPILL LEAK AND DISPOSAL PRACTICES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Spilled materials, where dust can be generated, may overexpose cleanup personnel to respirable dust. Wetting of spilled material and/or use of respiratory protective equipment may be necessary.

WASTE DISPOSAL METHOD

Pickup and reuse clean materials. Dispose of waste materials only in accordance with applicable federal, state, and local laws and regulations.

X - TRANSPORTATION

DOT HAZARD CLASSIFICATION

None

PLACARD REQUIRED

None

LABEL REQUIRED

Label as required by applicable state and local regulations.

For Further Information:

Contact: Dennis Taylor

VALLEY INC.
P O BOX 100
MILLWOOD WV 25262

Date of Preparation

11/18/1999

NOTICE: Company believes that the information contained on this Material Safety Data Sheet is accurate. The suggested procedures are based on experience as of the date of publication. They are not necessarily all-inclusive nor fully adequate in every circumstance. Also, the suggestions should not be confused with nor followed in violation of applicable laws, regulations, rules, or insurance requirements.

NO WARRANTY, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE IS MADE.



ArcelorMittal

Material Safety Data Sheet

WHMIS	Protective Clothing	TDG Road/Rail
		

Section I - Product Identification and Uses	
Common/Trade Name	METALLURGICAL COKE MSDS # 9941
Synonyms	Coke, Buckwheat Coke, Nut Coke, Pea Coke, Blast Furnace Coke, Dry Coke Fines, Coke Breeze
Chemical Name	Not applicable
Chemical Formula	Not applicable
Chemical Family	Not available
Supplier	ARCELORMITTAL DOFASCO INC. P.O. BOX 2460 HAMILTON, ON. CANADA L8N 3J5 (905) 548-7200 EXT. 4051 (By-Product Sales)
Material Uses	Carbon/fuel source for metal production. Internally generated by-product material.

Section IA - First Aid Measures	
Eye Contact	Flush eyes with water to remove foreign body. Seek medical attention if irritation persists.
Skin Contact	Wash with soap and water to remove from skin. Seek medical attention if irritation persists.
Inhalation	Remove person to fresh air. Seek medical attention if symptoms persist.
Ingestion	Not applicable.

Section II - Composition and Information on Ingredients

Name	CAS#	% by Weight	TLV/PEL	LC ₅₀ /LD ₅₀
1. CARBON	7440-44-0	86-91	TWA: 3.5 (mg/m ³) from ACGIH (TLV)	Not available.
2. WATER	7732-18-5	3-29	Not available.	Not available.
3. QUARTZ	14808-60-7	<1	TWA: 0.05 (mg/m ³) from ONT. MOL	ORAL (LD50): Acute: 90 mg/kg [Rat]. >15000 mg/kg [Mouse].
4. SULPHUR	7704-34-9	0.6-0.8	TWA: 10 (mg/m ³) from ACGIH (TLV) (PNOS)	Not available.
5. SODIUM MONOXIDE	12401-86-4	0.01-0.7	Not available.	Not available.
6. CALCIUM OXIDE	1305-78-8	0.01-0.3	TWA: 2 (mg/m ³) from ACGIH (TLV)	Not available.
7. MAGNESIUM OXIDE	1309-48-4	0.01-0.3	TWA: 10 (mg/m ³) from ACGIH (TLV)	ORAL (LD50): Acute: 810 mg/kg [Mouse]
8. POTASSIUM OXIDE	12136-45-7	0.01-0.2	Not available.	Not available.
9. TITANIUM DIOXIDE	13463-67-7	0.01-0.2	TWA: 10 (mg/m ³) from ACGIH (TLV)	ORAL (LD50): Acute: 10000 mg/kg [Rat]. VAPOR (LC50): Acute: 2087 ppm 4 hour(s) [Rat].
10. ALUMINA	1344-28-1	0.2-3	TWA: 10 (mg/m ³) from ACGIH (TLV) (PNOS–Inhalable; 3 (mg/m ³) from ACGIH (TLV) (PNOS-Respirable)	Not available.
11. IRON OXIDE	1332-37-2	0-2	TWA: 5 (mg/m ³) from ACGIH (TLV)	Not available.
12. PHOSPHOROUS PENTOXIDE	1314-56-3	0-0.10	Not available.	GAS (LC50): Acute: 104.8 ppm 4 hour(s) [Rat].
13. MANGANESE OXIDE	1317-35-7	0-0.02	TWA: 1 (mg/m ³) from ONT. MOL	Not available.

Section III - Toxicological Properties

Routes of entry	Skin contact. Eye contact. Inhalation.
TLV	Permissible exposure limits have not been established for this product.
Toxicity for animals	Acute oral toxicity (LD50): 440 mg/kg [Mouse]. (CARBON)
Chronic effects on humans	Long-term inhalation overexposure may cause lung disorders. IARC has classified Crystalline Silica as a Class 1 carcinogen. Their study concluded that sufficient evidence for carcinogenicity exists in experimental animals and that sufficient evidence exists in humans for the carcinogenicity of inhaled crystalline silica in the forms of quartz or cristoballite from occupational sources.
Acute effects on humans	Overexposure by inhalation may cause irritation of nose, throat and mucous membranes. Abrasive irritation of skin or eyes.

Section IV - Physical Data

Physical State and Appearance	Solid (solid lumps).	Vapor Pressure	Not applicable.
pH	Not applicable.	Evaporation Rate	Not applicable.
Odor Threshold	Not applicable.	Viscosity	Not applicable.
Volatility	Not applicable.	Water/Oil Dist. Coeff.	Not applicable.
Melting/Sublimation Point	Not applicable.	Critical temperature	Not applicable.
Boiling/Condensation Point	Not applicable.	Instability temperature	Not applicable.
Specific Gravity	1.75 (Water = 1)	Conditions of instability	No additional remark.
Vapor Density	Not available.	Solubility	Not available.
Dispersion Properties	See solubility in water.	Odor	No characteristic odour.
		Color	Black.

Section V – Fire and Explosion Data

The product is	Will burn at elevated temperatures.
Auto-ignition temperature	Not applicable.
Fire degradation products	Combustion products such as carbon oxides.
Flash Points	Not applicable.
Flammable Limits	Not applicable.
Fire Extinguishing Procedures	Use water. Use SCBA during fire fighting.
Flammability	Will burn at elevated temperatures.
Risks of explosion	Risks of explosion of the product in presence of mechanical impact: No. Risks of explosion of the product in presence of static discharge: No No specific information is available in our database regarding the product's risks of explosion in the presence of various materials.

Section VI – Reactivity Data

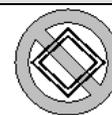
Stability	The product is stable.
Hazardous Decomp. Products	Oxides of carbon.
Degradability	Not applicable.
Products of Degradation	Possibly hazardous short term degradation products are not likely.
Corrosivity	No specific information is available in our database regarding the corrosivity of this product in presence of various materials.
Reactivity	No specific information is available in our database regarding the reactivity of this material in presence of various other materials.

Section VII – Preventive Measures	
Waste Information	Dispose of in accordance with local, provincial and federal regulations.
Storage	Not applicable.
Precaution	Avoid dust generation during handling. Do not breathe dust or fume. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. This material contains a small amount (0.1-0.9% by weight) of quartz (free crystalline silica). Free crystalline silica is listed by IARC as a group 1 “proven human carcinogen”. This material does not contain any components listed under SARA 313.
Small spill and leak	Contain spill, reclaim spilled material to suitable container. Use appropriate personal protective equipment during clean-up.
Large spill and leak	If spills may impact the natural environment (e.g. entering to storm sewer, bay, waterway, etc.) contact your Environment department.

Section VIII – Protective Measures	
Protective Clothing	Safety glasses with side shields. Leather faced gloves. Use NIOSH/MSHA approved respirator.
Engineering Controls	Use general ventilation under normal conditions. Use mechanical ventilation if dust or fume is generated.



Section IX – Classification	
TDG Road/Rail	Not controlled under TDG (Canada).
Maritime Transportation	Not available.
WHMIS	WHMIS CLASS D-2A: Material causing other toxic effects (VERY TOXIC).
Federal and Provincial Regulations	CEPA DSL: CALCIUM OXIDE; MAGNESIUM OXIDE; PHOSPHORUS OXIDE; MANGANESE OXIDE; IRON OXIDE; SULPHUR; POTASSIUM OXIDE; SODIUM MONOXIDE; TITANIUM DIOXIDE; QUARTZ



Section X – Other Information	
References	Dofasco's Material Safety Data Sheet
If the use of this material is other than that specified by the supplier, additional precautions may be required.	
Effective Date: October 21, 2008	
EMERGENCY CONTACT: 1-760-476-3962	
3E COMPANY CODE: 333211	
<i>To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.</i>	



1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name MAMATWAN MANGANESE ORE (SAMANCOR)

Synonyms MANGANESE ORE, SAMANCOR MAMATWAN MANGANESE ORE.

Uses ORE.

Supplier Name SAMANCOR MANGANESE
Address North Cape, 8490, South Africa
Telephone +27 53 7422100
Fax +27 53 7422105
Emergency +27 53 7422100

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO NOHSC CRITERIA
CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

Risk And Safety Phrases Risk and Safety Phrases are standardised phrases allocated to Hazardous Substances. Risk phrases convey a general description of the physicochemical, environmental and health hazards of a substance. Safety phrases provide information on safe storage, handling, disposal, personal protection and first aid.

RISK PHRASES

R10 Flammable.
R15 Contact with water liberates highly flammable gases.
R20/22 Harmful by inhalation and if swallowed.
R48 Danger of serious damage to health by prolonged exposure.

SAFETY PHRASES

S14 Keep away from incompatible materials as listed in the reactivity section.
S15 Keep away from heat.
S16 Keep away from sources of ignition - No smoking.
S17 Keep away from combustible material.
S20/21 When using, do not eat, drink or smoke.
S22 Do not breathe dust.
S26 In case of contact with eyes, rinse immediately with plenty of water and contact a doctor or Poisons Information Centre.
S3 Keep in a cool place.
S8 Keep container dry.
S9 Keep container in a well ventilated place.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Formula	Conc.	CAS No.
MANGANESE MANGANESE CARBONATE	Mn C-H2-O3.Mn	Not Available 38%	7439-96-5 598-62-9

**Colour
Rating
AMBER**



4. FIRST AID MEASURES

- Eye** Flush gently with running water. Seek medical attention if irritation develops.
- Inhalation** If exposure occurs leave exposure area immediately. If irritation persists, seek medical attention.
- Skin** Gently flush affected areas with cold water. Maintain cooling, seek URGENT immediate medical attention.
- Ingestion** For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor. If swallowed, do not induce vomiting.
- Advice To Doctor** Treat symptomatically.

5. FIRE FIGHTING MEASURES

- Flammability** Flammable solid - burns violently in air. Reacts with water, forming flammable hydrogen gas. More dangerous when finely divided (eg powder). May ignite upon contact with incompatible materials. Burns with very bright white light.
- Fire and Explosion** Flammable solid - explosive dust hazard when exposed to heat/ignition source. Evacuate area and contact emergency services. Toxic gases may be evolved when heated. Remain upwind and notify those downwind of hazard. Wear full protective equipment (see spill above) including Self Contained Breathing Apparatus (SCBA) when combating fire. Avoid contact with moisture as flammable hydrogen gas may be evolved.
- Extinguishing** Special mixtures of dry chemical. Prevent contamination of drains or waterways, absorb runoff with sand or similar. Do NOT use foam, water or carbon dioxide extinguishing agents.
- Hazchem Code** 1Y

6. ACCIDENTAL RELEASE MEASURES

- Spillage** If spilt (bulk), wear dust-proof goggles, PVC/rubber gloves, coveralls and boots. Where an inhalation risk exists, wear a Class P1 (Particulate) respirator. Absorb with sand or similar, collect and place in sealable containers for disposal. Avoid generating dust.

7. HANDLING AND STORAGE

- Handling** Use safe work practices to avoid eye or skin contact and inhalation. Observe good personal hygiene. Prohibit eating, drinking and smoking in contaminated areas. Wash hands before eating. Remove contaminated clothing and protective equipment before entering eating areas.
- Storage** Store in cool, DRY, well ventilated area, removed from direct sunlight, oxidising agents (eg. peroxides, hypochlorites), acids (eg. sulfuric acid), water, heat sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate ventilation.

Colour
Rating
AMBER

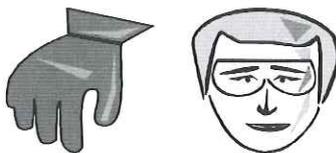
8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation Do not inhale dust/ powder. Use with adequate natural ventilation. Where a dust hazard exists, mechanical explosion proof extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

Exposure Standards MANGANESE (7439-96-5)
 ES-TWA : 1 mg/m³ dust or fume
 ES-STEL : 3 mg/m³ as fume
 WES : 1 mg/m³

MANGANESE CARBONATE (598-62-9)
 ES-TWA : 1 mg/m³ dust, as Manganese

PPE Wear dust-proof goggles and PVC or rubber gloves. When using large quantities or where heavy contamination is likely, wear coveralls. Where an inhalation risk exists, wear a Class P1 (Particulate) Respirator. Where the risk of burns exists, wear heat-resistant/protective gloves.



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: BROWN-BLACK SOLID
Odour: ODOURLESS
pH: NOT AVAILABLE
Vapour Pressure: NOT AVAILABLE
Vapour Density: NOT AVAILABLE
Boiling Point: NOT AVAILABLE
Melting Point: 535 C
Evaporation Rate: NOT AVAILABLE
Solubility (water): INSOLUBLE
Specific Gravity: NOT AVAILABLE
% Volatiles: NOT AVAILABLE
Flammability: NON FLAMMABLE
Flash Point: NOT RELEVANT
Upper Explosion Limit: NOT RELEVANT
Lower Explosion Limit: NOT RELEVANT
Autoignition Temperature: NOT AVAILABLE

10. STABILITY AND REACTIVITY

Reactivity Incompatible with oxidising agents (eg. hypochlorites, peroxides), acids (eg. nitric acid), water, heat and ignition sources. Flammable hydrogen gas is formed upon contact with moisture or acids.

Decomposition Products May evolve toxic gases if heated to decomposition.

Colour Rating
AMBER



11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Low to moderate toxicity - skin irritant. Avoid direct eye or skin contact and inhalation of dust, powder or fume (if heating). If embedded in the skin, particles may react with water in the body causing swelling and necrosis ("gas gangrene"). Over exposure to fumes (if heating) may result in metal fume fever, with flu-like symptoms.
Eye	Low irritant. Exposure may result in irritation and lacrimation.
Inhalation	Irritant. Over exposure may result in irritation of the nose, throat and cough. Inhalation of fumes (eg. if welding) may cause metal fume fever, a flu-like illness with symptoms including dry throat, cough, chills, tight chest, weakness and muscular aches. Symptoms may be delayed 4 to 12 hours.
Skin	Low irritant. Prolonged and repeated contact may result in irritation, skin rash and dermatitis. Powdered metal ignites readily on the skin causing blisters and burns.
Ingestion	Low toxicity. With large doses ingestion may result in nausea, vomiting and gastrointestinal irritation.
Toxicity Data	MANGANESE (7439-96-5) LD50 (Ingestion) : 9000 mg/kg (rat)

12. ECOLOGICAL INFORMATION

Environment	Magnesium is one of the most common elements in the earth's crust and is an essential trace element for plants and animals. It is not expected to remain as the free metal, but will react with water and oxygen to form magnesium oxide.
--------------------	---

13. DISPOSAL CONSIDERATIONS

Waste Disposal	Return to manufacturer. Large pieces may be recycled or salvaged (sold as scrap metal). Alternatively, mix small quantity carefully with wet sand and bury in approved landfill site. Contact the manufacturer for additional information.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

Transport	Class 5.1 Oxidising agent. Do not transport with chemicals of class; 1 (Explosives), 2.1/ 2.3 (Flammable/ Toxic gases), 3/ 4.1 (Flammable liquids/ solids), 4.2 (Spontaneously combustibles), 4.3 (Dangerous When Wet), 5.2 (Organic peroxides), 6 (Toxics), 7 (Radioactives), 8 (Corrosives), 9 (Miscellaneous) and foodstuffs.
UN Number	1479
Shipping Name	OXIDIZING SOLID, N.O.S.
DG Class	5.1
Subsidiary Risk(s)	None Allocated
Packing Group	II
Hazchem Code	1Y

Colour
Rating
AMBER



15. REGULATORY INFORMATION

Poison Schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

16. OTHER INFORMATION

Additional Information RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

MAGNESIUM - metal, turnings, borings, pellets, ribbons; Magnesium turnings, borings, etc. should be collected frequently during the working hours and always at the end of a shift from machines and the surrounding area and placed in clean, DRY, metal covered containers clearly labelled "For magnesium only". Good housekeeping is essential when handling or working with this metal. Where large quantities may accumulate it should be placed in drums and removed from the work area. Accumulated magnesium may be burnt under controlled conditions.

COLOUR RATING SYSTEM: Chem Alert reports are assigned a colour rating of Green, Amber or Red for the purpose of providing users with a quick and easy means of determining the hazardous nature of a product. Safe handling recommendations are provided in all Chem Alert reports so as to clearly identify how users can control the hazards and thereby reduce the risk (or likelihood) of adverse effects. As a general guideline a Green colour rating indicates a low hazard, an Amber colour rating indicates a moderate hazard and a Red colour rating indicates a high hazard.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this Chem Alert report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. Information provided by Risk Management Technologies is summarised for ease of use. Additional technical information is available by calling +61 8 9322 1711.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a Chem Alert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

ABBREVIATIONS:

mg/m³ - Milligrams per cubic metre

ppm - Parts Per Million

TWA/ES - Time Weighted Average or Exposure Standard.

pH - relates to hydrogen ion concentration - this value will relate to a scale of 0 - 14, where 0 is highly acidic and 14 is highly alkaline.

CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.

M - moles per litre, a unit of concentration.

IARC - International Agency for Research on Cancer.

Report Reviewed 22nd November 2004

Date Printed 24th November 2004

**Colour
Rating
AMBER**



16. OTHER INFORMATION cont.

Report Status

Chem Alert reports are compiled as an independent source of information by RMT's scientific department, based on the latest chemical and toxicological research and, where appropriate, in compliance with relevant standards, guidance notes and legislation. Where available the manufacturer's original MSDS is also provided to Chem Alert subscribers as a scanned image for their convenience. In many instances Chem Alert reports are compiled on behalf of manufacturers in which case they serve as the "Manufacturer's MSDS" and are clearly identified as such on the relevant reports.

Prepared By Risk Management Technologies
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Web: www.rmt.com.au

A handwritten signature in blue ink, appearing to read "Ann Beck".

BHPBilliton Marketing Inc.

Omega Corporate Center,
1150 Omega Drive
Pittsburgh, PA, 15205
United States of America

**Colour
Rating
AMBER**

MATERIAL SAFETY DATA SHEET

MSDS No: 011

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/
UNDERTAKING**

UNIMIN CORPORATION
258 Elm Street
New Canaan, CT 06840

Emergency Telephone Number
(203) 966-8880

Telephone Number for Information
(203) 966-8880

PRODUCT NAME: Crystalline Silica in the form of Quartz – various grades

SYNONYMS: Quartz, Crystalline Silica, Silicon Dioxide

Date Prepared: August 2003

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

CAS# / EINECS #	Component	Percentage	EU Classification (67/548/EEC)
14808-60-7 / 238-878-4	Crystalline Silica in the form of Quartz	87 - 99.9%	Xn R48/20

Refer to section 16 for further information on EU Classification.

See Section 8 for occupational exposure limit information

SECTION 3: HAZARDS IDENTIFICATION

This product is a chemically inert, non-combustible mineral.

**EMERGENCY OVERVIEW
WARNING!**

Lung injury and cancer hazard. Do not breathe dust. May cause delayed lung injury. Long term exposure can cause silicosis. Silicosis is a respiratory disease, which can result in delayed, disabling and sometimes fatal lung injury. IARC has determined that crystalline silica inhaled from occupational sources can cause cancer in humans. Risk of injury is dependent on the duration and level of exposure. A single exposure will not result in serious adverse effects. See "Health Hazards" in Section 11 for detailed information. See exposure limit presentation in Section 8 for further information.

Avoid creating dust when handling, using or storing. Use only with adequate ventilation to keep exposure below recommended exposure limits.

EU Classification of Substance/Preparation: Harmful (Xn) R48/20

SECTION 4: FIRST AID MEASURES

Gross Inhalation: Remove victim to fresh air. If breathing has stopped, perform artificial respiration. If breathing is difficult have qualified personnel administer oxygen. Get prompt medical attention.

Skin Contact: No first aid should be needed since dermal contact with this product does not affect the skin. Wash exposed skin with soap and water before breaks and at the end of the shift.

Eye Contact: Flush the eyes immediately with large amounts of running water, lifting the upper and lower lids occasionally. If irritation persists or for imbedded foreign body, get immediate medical attention.

Ingestion: If large amounts are swallowed, get immediate medical attention.

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SECTION 5: FIREFIGHTING MEASURES

Flash Point (Method Used): Fully oxidized, will not burn.

Autoignition Temp: Will not burn.

Flammable Limits: **LEL:** Not applicable **UEL:** Not applicable

Extinguishing Media: This product will not burn but is compatible with all extinguishing media. Use any media that is appropriate for the surrounding fire.

Special Fire Fighting Procedures: None required with respect to this product. Firefighters should always wear self-contained breathing apparatus for fires indoors or in confined areas.

Unusual Fire and Explosion Hazards: None.

Hazardous Combustion Products: None.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Wear appropriate protective equipment. If uncontaminated, collect using dustless method (HEPA vacuum or wet method) and place in appropriate container for use. If contaminated: a) use appropriate method for the nature of contamination, and b) consider possible toxic or fire hazards associated with the contaminating substances. Collect for appropriate disposal.

SECTION 7: HANDLING AND STORAGE

Do not breathe dust. Do not rely on your sight to determine if dust is in the air. Silica may be in the air without a visible dust cloud. Use normal precautions against bag breakage or spills of bulk material. Avoid creation of respirable dust. Do not use as a dry abrasive blasting agent. ANSI/AIHA Z9.4:1997 recommends that silica sand be prohibited as an abrasive blasting agent for use in fixed location abrasive-blast enclosures. Use good housekeeping in storage and use areas to prevent accumulation of dust in work area.

To reduce the risk of developing silicosis, lung cancer and other adverse health effects, NIOSH recommends reducing airborne exposure levels as low as possible below NIOSH's recommended exposure limit, substituting less hazardous materials when feasible, using appropriate respiratory protection when source controls cannot keep exposures below the recommended limit and making medical examinations available to exposed workers.

Use adequate ventilation and dust collection. To minimize exposure, wear a respirator approved for silica dust when using, handling, storing or disposing of this product or bag. Refer to the most recent standards of ANSI (Z88.2), OSHA (29 CFR 1910.134), MSHA (30 CFR Parts 56 and 57) and NIOSH Respirator Decision Logic. Maintain, clean and fit test respirators in accordance with OSHA regulations. Maintain and test ventilation and dust collection equipment. Launder clothing that has become dusty. Empty containers (bags, bulk containers, storage tanks, etc.) retain silica residue and must be handled in accordance with the provisions of this Material Safety Data Sheet. **WARN** and **TRAIN** employees in accordance with state and federal regulations.

WARN YOUR EMPLOYEES (AND YOUR CUSTOMERS AND USERS IN CASE OF RESALE) BY POSTING, AND OTHER MEANS, OF THE HAZARDS AND OSHA AND ANY OTHER APPLICABLE REGULATORY PRECAUTIONS TO BE USED. PROVIDE TRAINING FOR YOUR EMPLOYEES ABOUT OSHA PRECAUTIONS.

See also American Society for Testing and Materials (ASTM) Standard Practice E1132-99a, "Standard Practice for Health Requirements Relating to Occupational Exposure to Respirable Crystalline Silica".

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Additional information on silica hazards and precautionary measures can be found at the following websites:

NIOSH Joint Campaign on Silicosis Prevention <http://www.cdc.gov/niosh/sicampn.html>
 OSHA Crystalline Silica Website <http://www.osha-slc.gov/SLTC/silicacrystalline/index.html>
 MSHA Silicosis Prevention Website <http://www.msha.gov/S&HINFO/SILICO/SILICO.HTM>
 NIOSH Hazard Review – Health Effects of Occupational Exposure to Respirable Crystalline Silica Website
<http://www.cdc.gov/niosh/02-129pd.html>

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits

Definitions:

MSHA means Mine Safety and Health Administration.
 NIOSH means National Institute for Occupational Safety and Health.
 OSHA means Occupational Safety and Health Administration.
 PEL means OSHA Permissible Exposure Limit.
 REL means the NIOSH Recommended Exposure Limit.
 TLV means American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value.
 TWA means time-weighted average.

OSHA PEL and MSHA Exposure Limit for Crystalline Silica, Quartz $\frac{10 \text{ mg/m}^3}{\% \text{ Silica} + 2}$
 (Respirable measured as an 8-hour TWA)

TLV- 0.05 mg/m³ 8-hour TWA (respirable fraction)

NIOSH has issued its REL of 50 micrograms respirable free silica per cubic meter of air (0.05 mg/m³) as determined by a full shift sample up to 10-hour working day, 40 hours per week. NIOSH has recommended that OSHA and MSHA adopt the NIOSH REL as the OSHA PEL and the MSHA Exposure Limit. The 1974 NIOSH Criteria for a Recommended Standard for Occupational Exposure to Crystalline Silica should be consulted for more detailed information. Additionally, NIOSH, in a publication entitled NIOSH Hazard Review Health Effects of Occupational Exposure Responsible Silica (April 2002), stated "...that workers have a significant risk of developing chronic silicosis when they are exposed to respirable crystalline silica over a working lifetime at the current Occupational Safety and Health Administration (OSHA) permissible exposure limit (PEL), the Mine Safety and Health Administration (MSHA) PEL, or the National Institute for Occupational Safety and Health (NIOSH) recommended exposure limit (REL). ... Current sampling and analytical methods used to evaluate occupational exposure to respirable crystalline silica do not meet the accuracy criterion needed to quantify exposures at concentrations below the NIOSH REL of 0.05 mg/m³ as a time-weighted average (TWA) for up to a 10-hr workday during a 40-hr workweek. Until improved sampling and analytical methods are developed for respirable crystalline silica, NIOSH will continue to recommend an exposure limit of 0.05 mg/m³ to reduce the risk of developing silicosis, lung cancer, and other adverse health effects. NIOSH also recommends minimizing the risk of illness that remains for workers exposed at the REL by substituting less hazardous materials for crystalline silica when feasible, by using appropriate respiratory protection when source controls cannot keep exposures below the NIOSH REL, and by making medical examinations available to exposed workers."

Crystalline silica exists in several forms, the most common of which are quartz (i.e. this product), trydimite and cristobalite, with quartz being the most common form found in nature. If quartz is heated to more than 870°C, it can change form to trydimite and if quartz is heated to more than 1450°C, it can change form to cristobalite. The OSHA PELs and MSHA Exposure Limits for trydimite and cristobalite are one-half of the PEL for quartz.

Ventilation: Use local exhaust as required to maintain exposures as far as possible below applicable occupational exposure limits. See also ACGIH "Industrial Ventilation - A Manual for Recommended Practice" (current edition). Control of exposure to dust must be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general or local exhaust ventilation and substitution of less toxic materials).

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Respiratory Protection: When effective engineering controls are not feasible, or while they are being implemented, appropriate respiratory protection must be used. Use appropriate respiratory protection for respirable particulates based on consideration of airborne workplace concentrations and duration of exposure arising from intended end use. Refer to the most recent standards of ANSI (Z88.2), OSHA (29 CFR 1910.134), MSHA (30 CFR Parts 56 and 57) and NIOSH Respirator Decision Logic.

Gloves: Protective gloves recommended.

Eye Protection: Safety glasses or goggles recommended.

Other Protective Equipment/Clothing: As appropriate for the work environment. Dusty clothing should be laundered before reuse.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: White powder, odorless.

pH: Not applicable

Boiling Point: 4046 °F / 2230 °C

Melting Point: 2930 °F / 1610 °C

Solubility in Water: Negligible

Percent Volatile: 0%

Autoignition Temp: Will not burn

Specific Gravity (water=1): 2.65

Vapor Pressure: Not applicable

Vapor Density: Not applicable

Evaporation Rate: Not applicable

Flash Point (Method Used): Fully oxidized, will not burn

Flammable Limits: LEL: Not applicable

UEL: Not applicable

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable

Conditions to Avoid: None

Incompatibility: Powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, etc.

Hazardous Decomposition Products: Silica will dissolve in hydrofluoric acid producing a corrosive gas, silicon tetrafluoride.

Hazardous Polymerization: Will not occur.

Conditions to Avoid: None

SECTION 11: TOXICOLOGICAL INFORMATION

HEALTH HAZARDS:

Inhalation: Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may have the following serious chronic health effects:

Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling and sometimes fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop mycobacterial infections (tuberculous and non-tuberculous) and fungal infections. Inhalation of air with a very high concentration of respirable silica dust can cause the most serious forms of silicosis in a matter of months or a few years. Some epidemiologic studies have concluded that there is significant risk of developing silicosis even at airborne exposure levels that are equal to the recommended NIOSH REL, the ACGIH TLV, the OSHA PEL, and the MSHA Exposure Limit.

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Cancer Status: The International Agency for Research on Cancer has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1 - carcinogenic to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (published in June 1997) in conjunction with the use of these materials. The National Toxicology Program classifies respirable crystalline silica as "known to be a human carcinogen". Refer to the Tenth Report on Carcinogens (2002). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

Other Data with Possible Relevance to Human Health:

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by fibrosis of the lungs, skin and other internal organs) rheumatoid arthritis, systemic lupus, erythematosus, sarcoidosis, chronic bronchitis, chronic obstructive pulmonary disease (COPD), emphysema, chronic kidney disease and end-stage renal disease.

For further information consult "Adverse Effects of Crystalline Silica Exposure" published by the American Thoracic Society Medical Section of the American Lung Association, American Journal of Respiratory and Critical Care Medicine, Volume 155, pages 761-768, 1997, and see also NIOSH Hazard Review - Health Effects of Occupational Exposure to Respirable Crystalline Silica, April 2002 (see Section 7 for NIOSH Hazard Review Website).

Skin Contact: No adverse effects expected.

Eye Contact: Contact may cause mechanical irritation and possible injury.

Ingestion: No adverse effects expected for normal, incidental ingestion.

Chronic Health Effects: See "Inhalation" subsection above with respect to silicosis, cancer status and other data with possible relevance to human health.

Medical Conditions Aggravated by Exposure: Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be exposed to respirable quartz dust.

Signs and Symptoms of Exposure: Exposure to dust may cause mucous membrane and respiratory irritation, cough, sore throat, nasal congestion, sneezing and shortness of breath. However, there may be no immediate signs or symptoms of exposure to hazardous concentrations of respirable crystalline silica (quartz). See "Inhalation" subsection above for symptoms of silicosis. The absence of symptoms is not necessarily indicative of safe conditions.

Acute Toxicity Values: Silica: LD50 oral rat >22,500 mg/kg.

SECTION 12: ECOLOGICAL INFORMATION

Silica: LC50 carp >10,000 mg/L/72 hr. This product is not expected to present an environmental hazard.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Silica is not classified as a hazardous waste under US EPA RCRA regulations. If uncontaminated, dispose as an inert, non-metallic mineral. If contaminated, dispose in accordance with all applicable local, state/provincial and federal regulations in light of the contamination present. Local regulations may be more stringent than regional and national requirements. It is the responsibility of the waste generator to determine the toxicity and physical characteristics of the material to determine the proper waste identification and disposal in compliance with applicable regulations.

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SECTION 14: TRANSPORT INFORMATION**U.S. DOT HAZARD CLASSIFICATION**

Proper Shipping Name: Not Regulated

Technical Name: N/A

UN Number: N/A

Hazard Class/Packing Group: N/A

Labels Required: None

DOT Packaging Requirements: N/A

Exceptions: N/A

SECTION 15: REGULATORY INFORMATION

SARA 311/312: Hazard Categories for SARA Section 311/312 Reporting: Chronic Health

SARA 313: This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under the SARA Section 313 (40 CFR 372): None

CERCLA Section 103 Reportable Quantity: None

California Proposition 65: This product contains crystalline silica (respirable) which is known to the State of California to cause cancer.

Toxic Substances Control Act: All of the components of this product are listed on the EPA TSCA Inventory or exempt from premanufacture notification requirements.

European Inventory of Commercial Chemical Substances: All of the components of this product are listed on the EINECS Inventory or exempt from notification requirements. (The EINECS number for Quartz: 238-878-4)

European Community Labeling: Harmful Xn

Contains crystalline silica, quartz (238-878-4)

R48/20 Harmful: Danger of serious damage to health by prolonged exposure by inhalation.

S22 Do not breathe dust

S38 In case of insufficient ventilation, wear suitable respiratory equipment.

Canadian Environmental Protection Act: All the components of this product are listed on the Canadian Domestic Substances List or exempt from notification requirements.

Canadian WHMIS Classification: Class D, Division 2, Subdivision A (Very Toxic Material causing other Toxic Effects)

This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

Japan METI: All of the components of this product are existing chemical substances as defined in the Chemical Substance Control Law.

Australian Inventory of Chemical Substances: All of the components of this product are listed on the AICS inventory or exempt from notification requirements.

Korea: All of the components of this product are listed on the ECL inventory or exempt from notification requirements.

Philippines: All of the components of this product are listed on the PICCS inventory or exempt from notification requirements.

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16: OTHER INFORMATIONEU Classes and Risk Phrases for Reference (See Sections 2 and 3)

Xn Harmful

R48/20 Harmful: Danger of serious damage to health by prolonged exposure by inhalation.

S22 Do not breathe dust

S38 In case of insufficient ventilation, wear suitable respiratory equipment.

NFPA Hazard Rating: Health: 1 Fire: 0 Reactivity: 0HMIS Hazard Rating: Health: * Fire: 0 Reactivity: 0

* Warning - Chronic health effect possible - inhalation of silica dust may cause lung injury/disease (silicosis). Take appropriate measures to avoid breathing dust. See Section 3.

References:

Registry for Toxic Effects of Chemical Substances (RTECS), 2002
Patty's Industrial Hygiene and Toxicology
NIOSH Hazard Review - Health Effects of Occupational Exposure to Respirable Crystalline Silica, April 2002
NTP Tenth Report on Carcinogens, 2002
IARC Monograph Volume 68, Silica, Some Silicates and Organic Fibres, 1997
Hazardous Substances Data Bank (HSDB), 2002

Revision Summary: Revised NIOSH Information (Section 2), Revised Hazards Identification (Section 3), Handling and Storage (Section 7). Revised Ventilation and Respiratory Protection (Section 8), Revised Health Hazard Data (Section 11), Revised Disposal Information (Section 13), Revised EINECS Number and EU Labeling, Added Korean and Philippine Inventory Status (Section 15).

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. The information set forth herein is based on technical data the Unimin Corporation believes reliable. It is intended for use by persons having technical skill and at their own discretion and risk. Since conditions of use are outside the control of Unimin Corporation, no warranties, expressed or implied, are made and no liability is assumed in connection with any use of this information. Any use of these data and information must be determined by the user to be in accordance with federal, state and local laws and regulations.

**MATERIAL SAFETY DATA SHEET
FOR MANGANESE SINTER**

**PRODUCED BY
OPEN JOINT STOCK COMPANY «ORDGONIKIDZEVSKIY GIRRNUCHO-
ZBAGACHUVALNIY KOMBINAT»**

1. Identification of substance:

1.1. Manganese sinter (AM-2) code TN VED 2602000000.

1.2. Material of darkly grey colour, crashed on lumps with definite size (up to 200 mm),

2. Chemical composition:

Mn	SiO ₂	P
40 % min	21.0 -30.0%	0.2-0.4 %

3. Physical features of cargo

3.1. Specific loading volume: 0.32-0.70 m³/mt;

4. Angle slope:

- slope of the pile more 35°;
- CODE BC - Group C.

4.1. Classification of cargo due to presence of adhesion of CODE BC – material has an adhesion;

5. Hazard identification:

- Not liable to auto-ignition and self-heating;
- Not flammable;
- Can absorb the oxygen from air space of warehouse;
- Not allowed to store AM-2 together with dust-sensitive cargo;
- Not allowed to store and handle together with acids, alkalis, food cargo, fodder;
- Not radioactive;
- Insignificant water absorber.

6. First aid measures: no one.

7. Accidental release measures:

7.1. Person related safety precaution:

- Persons with hypersensitivity to manganese dust are not allowed to work directly with material;
- Persons who work with AM-2 should be provided with anti-dust gear;

8. Measures for environmental protection:

- Provided all handling and storage rules are observed AM-2 does not influence environment;

9. Handling and storage:

- AM-2 handling and storage are allowed in bulk or packed in : "big-bags", steel drums, wood boxes;
- while storing uncovered AM-2 during long period advisable to cover it with tarpaulin or pellicle;

10. Stability and reactivity:

- rust proof;
- not decomposed;
- not oxidise;

11. Other information: no one.

Open Joint Stock Company «Ordgonikidzevskiy girrorucho-zbagachuvalniy kombinat»



West Virginia Department of Environmental Protection
Division of Air Quality

Earl Ray Tomblin
Governor

Randy C. Huffman
Cabinet Secretary

Permit to Operate



Pursuant to
Title V
of the Clean Air Act

Issued to:
Felman Production, Inc.
New Haven, West Virginia
R30-05300004-2013

John A. Benedict
Director

Issued: March 26, 2013 • Effective: April 9, 2013
Expiration: March 26, 2018 • Renewal Application Due: September 26, 2017

Permit Number: **R30-05300004-2013**
Permittee: **Felman Production, Inc.**
Permittee Mailing Address: **4442 Graham Station Road, Letart, WV 25253-8701**

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§ 22-5-1 et seq.) and 45CSR30 — Requirements for Operating Permits. The permittee identified at the above-referenced facility is authorized to operate the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

Facility Location: New Haven, Mason County, West Virginia
Telephone Number: 304-882-1187
Type of Business Entity: Corporation
Facility Description: Manufacturing of Manganese and Silicon Based Ferroalloys
SIC Codes: Primary 3313; Secondary 3341;
UTM Coordinates: 419.73 km Easting • 4312.468 km Northing • Zone 17

Permit Writer: Bobbie Scroggie

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§ 22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §22-5-14.

Issuance of this Title V Operating Permit does not supersede or invalidate any existing permits under 45CSR13, 14 or 19, although all applicable requirements from such permits governing the facility's operation and compliance have been incorporated into the Title V Operating Permit.

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APPENDIX A - Inspection and Maintenance Program

APPENDIX B - Rule 10 Monitoring Plan

1.0 Emission Units and Active R13, R14, and R19 Permits

1.1 Emission Units

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
001-01	001-01	No. 2 Furnace; Elkem	1966	15.26 tons/hr; 48.25 MW	BH2
001-02	001-02	No. 5 Furnace; Lectromelt	1974	7.18 tons/hr; 22.80 MW	BH5
001-03	001-03	No. 7 Furnace; Lectromelt	1975	8.08 tons/hr; 25.65 MW	BH7
002-0B	002-0B	Outdoor Storage Piles	1952	3 acres	None
005-01	005-01	Unpaved Road - Raw Material Delivery	N/A	N/A	None
005-02	005-02	Unpaved Road - Gravel Delivery	N/A	N/A	None
005-03	005-03	Unpaved Road - Wood Chips Delivery	N/A	N/A	None
005-04	005-04	Unpaved Road - Scrap Metal Delivery	N/A	N/A	None
005-05	005-05	Unpaved Road - Product Shipments	N/A	N/A	None
005-06	005-06	Unpaved Road - Raw Materials Transfer	N/A	N/A	None
005-07	005-07	Unpaved Road - Endloaders	N/A	N/A	None
009-01	009-01	Crushing and Screening System #1	N/A	33 tons/hr	Baghouses
009-02	009-02	Crushing and Screening System #2	N/A	33 tons/hr	Baghouses
009-03	009-03	Crushing and Screening System #4	N/A	20 tons/hr	Baghouse
009-04	009-04	Crushing and Screening System #5	N/A	20 tons/hr	Baghouse
009-06	009-06	Transfer Points	N/A	28 tons/hr	None
00A-01	00A-01	Product Casting Operations	N/A	20 tons/hr	Baghouses
00C-01	00C-01	Ladle Burners (No. 2 oil)	N/A	140 MMBtu/hr, 40 gal/hr	None
SC-1C	SC-1CE	Grizzly Feeder	2010	400 tons/hr	Baghouse
BC-1C	T3C	Screen Reject Belt Conveyor	2010	400 tons/hr	WS
CR-1C	009-03	Jaw Crusher	2010	400 tons/hr	Baghouse
BC-2C	T6C	Belt Conveyor	2010	400 tons/hr	WS
OS-1C	OS-1CE	Unsize Stockpile	2010	5,000 sq. ft.	WS
OS-2C	OS-2CE	Sized Stockpile	2010	5,000 sq. ft.	WS
EX-1	EX-1E	Extruder Unit	2010	20 tons/hr	FE
OS-1X	OS-1XE	Briquette Stockpile	2010	5,000 sq. ft.	None
PT-1	PT-1E	Pelletizing Unit	2010	6 tons/hr	FE

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
OS-1P	OS-1PE	Pellet Stockpile	2010	5,000 sq. ft.	None
SC-01A	SC-01A	Barge Loadout Screen/Diesel Engine	2012	250 TPH	FE
SC-01B	SC-01B	Water Jig Screen	2012	200 TPH	FE/WS
RBSC-01	RBSC-01	Rebel Screen #1	2012	150 TPH	FE
RBSC-02	RBSC-02	Rebel Screen #2	2012	150 TPH	FE
BTSC-01	BTSC-01	Bivitech Screen/Diesel Engine	2009	150 TPH	FE
CR-01B	CR-01B	Water Jig Crusher	2012	200 TPH	FE/WS
RBCR-01	RBCR-01	Rebel Crusher	2012	150 TPH	FE
BC1A	BC1A	Belt Conveyor	2012	250 TPH	PE
BC2A	BC2A	Belt Conveyor	2012	250 TPH	PE
BC1B	BC1B	Belt Conveyor	2012	200 TPH	PE
BC2B	BC2B	Belt Conveyor	2012	200 TPH	PE
BC1C	BC1C	Belt Conveyor	2009	150 TPH	None
BC2C	BC2C	Belt Conveyor	2009	150 TPH	None
BC1D	BC1D	Belt Conveyor	2012	150 TPH	PE
BC2D	BC2D	Belt Conveyor	2012	150 TPH	PE
OCS1	OCS1	Concentrate Stockpile	2012	5,000 Ton	PE
OCS2	OCS2	Middlings Stockpile	2012	5,000 Ton	PE
OCS3	OCS3	Slag Stockpile	2012	5,000 Ton	PE
H1	H1	Hopper	2011	150 tph	PE
PF	2E	Pan Feeder	2011	150 tph	FE+BH
CS1	2E	Screen No. 1	2011	150 tph	FE+BH
CC1	CC1	Crusher No. 1	2011	120 tph	FE
BC1	1E	Conveyor No. 1	2011	120 tph	FE+BH
BC2	BC2	Conveyor No. 2	2011	120 tph	FE
BC3	BC3	Conveyor No. 3	2011	120 tph	FE
CS2	1E	Screen No. 2	2011	120 tph	PE+BH
BC4	BC4	Conveyor No. 4	2011	60 tph	FE
CC2	CC2	Crusher No. 2	2011	60 tph	FE

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
Equipment permitted under R13-3217					
H1-M	H1-M	Crusher Hopper	2014	400 tpy	PE
F1-M	F1-M	Grizzly Feeder	2014	400 tpy	PE+WS
BC1-M	BC1-M	Belt Conveyor	2014	400 tpy	PE
CR1-M	CR1-M	Horizontal Impact Crusher; 271 hp, <10L displacement engine	2014	400 tpy	FE+WS
BC2-M	BC2-M	Belt Conveyor	2014	400 tpy	PE
MP-BC3-M	BC3-M	Belt Conveyor	2014	400 tpy	PE+WS
S1-M	S1-M	Sizing Screen; 129 hp, <10L displacement engine	2014	400 tpy	PE
Equipment permitted under R13-3244T					
H1	H1	Hopper	2015	3.75 tons/hr	PE
BC-1	BC-1	Belt Conveyor	2015	3.75 tons/hr	PE
H2	H2	Charge Hopper	2015	3.75 tons/hr	PE
F1	EP1	Induction Furnace	2015	3.75 tons/hr	BH-1

FE = Full Enclosure, WS = Water Spray, PE = Partial Enclosure, BH = Baghouse

1.2. Active R13, R14, and R19 Permits

The underlying authority for any conditions from R13, R14, and/or R19 permits contained in this operating permit is cited using the original permit number (e.g. R13-1234). The current applicable version of such permit(s) is listed below.

Permit Number	Date of Issuance
R13-2857B	August 9, 2013
R13-3217	April 29, 2015
R13-3244T	June 10, 2015

2.0. General Conditions

2.1. Definitions

- 2.1.1. All references to the "West Virginia Air Pollution Control Act" or the "Air Pollution Control Act" mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.
- 2.1.2. The "Clean Air Act" means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.
- 2.1.3. "Secretary" means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45CSR§30-2.12.). The Director of the Division of Air Quality is the Secretary's designated representative for the purposes of this permit.
- 2.1.4. Unless otherwise specified in a permit condition or underlying rule or regulation, all references to a "rolling yearly total" shall mean the sum of the monthly data, values or parameters being measured, monitored, or recorded, at any given time for the previous twelve (12) consecutive calendar months

2.2. Acronyms

CAAA	Clean Air Act Amendments	NESHAPS	National Emissions Standards for Hazardous Air Pollutants
CBI	Confidential Business Information	NO_x	Nitrogen Oxides
CEM	Continuous Emission Monitor	NSPS	New Source Performance Standards
CES	Certified Emission Statement	PM	Particulate Matter
C.F.R. or CFR	Code of Federal Regulations	PM₁₀	Particulate Matter less than 10µm in diameter
CO	Carbon Monoxide	pph	Pounds per Hour
C.S.R. or CSR	Codes of State Rules	ppm	Parts per Million
DAQ	Division of Air Quality	PSD	Prevention of Significant Deterioration
DEP	Department of Environmental Protection	psi	Pounds per Square Inch
FOIA	Freedom of Information Act	SIC	Standard Industrial Classification
HAP	Hazardous Air Pollutant	SIP	State Implementation Plan
HON	Hazardous Organic NESHAP	SO₂	Sulfur Dioxide
HP	Horsepower	TAP	Toxic Air Pollutant
lbs/hr	Pounds per Hour	TPY	Tons per Year
LDAR	Leak Detection and Repair	TRS	Total Reduced Sulfur
m	Thousand	TSP	Total Suspended Particulate
MACT	Maximum Achievable Control Technology	USEPA	United States Environmental Protection Agency
mm	Million	UTM	Universal Transverse Mercator
mmBtu/hr	Million British Thermal Units per Hour	VEE	Visual Emissions Evaluation
mmft³/hr	Million Cubic Feet Burned per Hour	VOC	Volatile Organic Compounds
NA or N/A	Not Applicable		
NAAQS	National Ambient Air Quality Standards		

2.3. Permit Expiration and Renewal

- 2.3.1. Permit duration. This permit is issued for a fixed term of five (5) years and shall expire on the date specified on the cover of this permit, except as provided in 45CSR§30-6.3.b. and 45CSR§30-6.3.c.
[45CSR§30-5.1.b.]
- 2.3.2. A permit renewal application is timely if it is submitted at least six (6) months prior to the date of permit expiration.
[45CSR§30-4.1.a.3.]
- 2.3.3. Permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted consistent with 45CSR§30-6.2. and 45CSR§30-4.1.a.3.
[45CSR§30-6.3.b.]
- 2.3.4. If the Secretary fails to take final action to deny or approve a timely and complete permit application before the end of the term of the previous permit, the permit shall not expire until the renewal permit has been issued or denied, and any permit shield granted for the permit shall continue in effect during that time.
[45CSR§30-6.3.c.]

2.4. Permit Actions

- 2.4.1. This permit may be modified, revoked, reopened and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
[45CSR§30-5.1.f.3.]

2.5. Reopening for Cause

- 2.5.1. This permit shall be reopened and revised under any of the following circumstances:
 - a. Additional applicable requirements under the Clean Air Act or the Secretary's legislative rules become applicable to a major source with a remaining permit term of three (3) or more years. Such a reopening shall be completed not later than eighteen (18) months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to 45CSR§§30-6.6.a.1.A. or B.
 - b. Additional requirements (including excess emissions requirements) become applicable to an affected source under Title IV of the Clean Air Act (Acid Deposition Control) or other legislative rules of the Secretary. Upon approval by U.S. EPA, excess emissions offset plans shall be incorporated into the permit.
 - c. The Secretary or U.S. EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
 - d. The Secretary or U.S. EPA determines that the permit must be revised or revoked and reissued to assure compliance with the applicable requirements.
[45CSR§30-6.6.a.]

2.6. Administrative Permit Amendments

- 2.6.1. The permittee may request an administrative permit amendment as defined in and according to the procedures specified in 45CSR§30-6.4.
[45CSR§30-6.4.]

2.7. Minor Permit Modifications

- 2.7.1. The permittee may request a minor permit modification as defined in and according to the procedures specified in 45CSR§30-6.5.a.
[45CSR§30-6.5.a.]

2.8. Significant Permit Modification

- 2.8.1. The permittee may request a significant permit modification, in accordance with 45CSR§30-6.5.b., for permit modifications that do not qualify for minor permit modifications or as administrative amendments.
[45CSR§30-6.5.b.]

2.9. Emissions Trading

- 2.9.1. No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for in the permit and that are in accordance with all applicable requirements.
[45CSR§30-5.1.h.]

2.10. Off-Permit Changes

- 2.10.1. Except as provided below, a facility may make any change in its operations or emissions that is not addressed nor prohibited in its permit and which is not considered to be construction nor modification under any rule promulgated by the Secretary without obtaining an amendment or modification of its permit. Such changes shall be subject to the following requirements and restrictions:
- a. The change must meet all applicable requirements and may not violate any existing permit term or condition.
 - b. The permittee must provide a written notice of the change to the Secretary and to U.S. EPA within two (2) business days following the date of the change. Such written notice shall describe each such change, including the date, any change in emissions, pollutants emitted, and any applicable requirement that would apply as a result of the change.
 - c. The change shall not qualify for the permit shield.
 - d. The permittee shall keep records describing all changes made at the source that result in emissions of regulated air pollutants, but not otherwise regulated under the permit, and the emissions resulting from those changes.
 - e. No permittee may make any change subject to any requirement under Title IV of the Clean Air Act (Acid Deposition Control) pursuant to the provisions of 45CSR§30-5.9.

- f. No permittee may make any changes which would require preconstruction review under any provision of Title I of the Clean Air Act (including 45CSR14 and 45CSR19) pursuant to the provisions of 45CSR§30-5.9.

[45CSR§30-5.9]

2.11. Operational Flexibility

- 2.11.1. The permittee may make changes within the facility as provided by § 502(b)(10) of the Clean Air Act. Such operational flexibility shall be provided in the permit in conformance with the permit application and applicable requirements. No such changes shall be a modification under any rule or any provision of Title I of the Clean Air Act (including 45CSR14 and 45CSR19) promulgated by the Secretary in accordance with Title I of the Clean Air Act and the change shall not result in a level of emissions exceeding the emissions allowable under the permit.

[45CSR§30-5.8]

- 2.11.2. Before making a change under 45CSR§30-5.8., the permittee shall provide advance written notice to the Secretary and to U.S. EPA, describing the change to be made, the date on which the change will occur, any changes in emissions, and any permit terms and conditions that are affected. The permittee shall thereafter maintain a copy of the notice with the permit, and the Secretary shall place a copy with the permit in the public file. The written notice shall be provided to the Secretary and U.S. EPA at least seven (7) days prior to the date that the change is to be made, except that this period may be shortened or eliminated as necessary for a change that must be implemented more quickly to address unanticipated conditions posing a significant health, safety, or environmental hazard. If less than seven (7) days notice is provided because of a need to respond more quickly to such unanticipated conditions, the permittee shall provide notice to the Secretary and U.S. EPA as soon as possible after learning of the need to make the change.

[45CSR§30-5.8.a.]

- 2.11.3. The permit shield shall not apply to changes made under 45CSR§30-5.8., except those provided for in 45CSR§30-5.8.d. However, the protection of the permit shield will continue to apply to operations and emissions that are not affected by the change, provided that the permittee complies with the terms and conditions of the permit applicable to such operations and emissions. The permit shield may be reinstated for emissions and operations affected by the change:

- a. If subsequent changes cause the facility's operations and emissions to revert to those authorized in the permit and the permittee resumes compliance with the terms and conditions of the permit, or
- b. If the permittee obtains final approval of a significant modification to the permit to incorporate the change in the permit.

[45CSR§30-5.8.c.]

- 2.11.4. "Section 502(b)(10) changes" are changes that contravene an express permit term. Such changes do not include changes that would violate applicable requirements or contravene enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements.

[45CSR§30-2.39]

2.12. Reasonably Anticipated Operating Scenarios

- 2.12.1. The following are terms and conditions for reasonably anticipated operating scenarios identified in this permit.

- a. Contemporaneously with making a change from one operating scenario to another, the permittee shall record in a log at the permitted facility a record of the scenario under which it is operating and to document the change in reports submitted pursuant to the terms of this permit and 45CSR30.
- b. The permit shield shall extend to all terms and conditions under each such operating scenario; and
- c. The terms and conditions of each such alternative scenario shall meet all applicable requirements and the requirements of 45CSR30.

[45CSR§30-5.1.i.]

2.13. Duty to Comply

- 2.13.1. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

[45CSR§30-5.1.f.1.]

2.14. Inspection and Entry

- 2.14.1. The permittee shall allow any authorized representative of the Secretary, upon the presentation of credentials and other documents as may be required by law, to perform the following:
 - a. At all reasonable times (including all times in which the facility is in operation) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c. Inspect at reasonable times (including all times in which the facility is in operation) any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;
 - d. Sample or monitor at reasonable times substances or parameters to determine compliance with the permit or applicable requirements or ascertain the amounts and types of air pollutants discharged.

[45CSR§30-5.3.b.]

2.15. Schedule of Compliance

- 2.15.1. For sources subject to a compliance schedule, certified progress reports shall be submitted consistent with the applicable schedule of compliance set forth in this permit and 45CSR§30-4.3.h., but at least every six (6) months, and no greater than once a month, and shall include the following:
 - a. Dates for achieving the activities, milestones, or compliance required in the schedule of compliance, and dates when such activities, milestones or compliance were achieved; and

- b. An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventative or corrective measure adopted.

[45CSR§30-5.3.d.]

2.16. Need to Halt or Reduce Activity not a Defense

- 2.16.1. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in determining penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operations.

[45CSR§30-5.1.f.2.]

2.17. Emergency

- 2.17.1. An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

[45CSR§30-5.7.a.]

- 2.17.2. Effect of any emergency. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of 45CSR§30-5.7.c. are met.

[45CSR§30-5.7.b.]

- 2.17.3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

- a. An emergency occurred and that the permittee can identify the cause(s) of the emergency;
- b. The permitted facility was at the time being properly operated;
- c. During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
- d. Subject to the requirements of 45CSR§30-5.1.c.3.C.1, the permittee submitted notice of the emergency to the Secretary within one (1) working day of the time when emission limitations were exceeded due to the emergency and made a request for variance, and as applicable rules provide. This notice, report, and variance request fulfills the requirement of 45CSR§30-5.1.c.3.B. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

[45CSR§30-5.7.c.]

- 2.17.4. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

[45CSR§30-5.7.d.]

- 2.17.5. This provision is in addition to any emergency or upset provision contained in any applicable requirement.
[45CSR§30-5.7.e.]

2.18. Federally-Enforceable Requirements

- 2.18.1. All terms and conditions in this permit, including any provisions designed to limit a source's potential to emit and excepting those provisions that are specifically designated in the permit as "State-enforceable only", are enforceable by the Secretary, USEPA, and citizens under the Clean Air Act.
[45CSR§30-5.2.a.]
- 2.18.2. Those provisions specifically designated in the permit as "State-enforceable only" shall become "Federally-enforceable" requirements upon SIP approval by the USEPA.

2.19. Duty to Provide Information

- 2.19.1. The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records required to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.
[45CSR§30-5.1.f.5.]

2.20. Duty to Supplement and Correct Information

- 2.20.1. Upon becoming aware of a failure to submit any relevant facts or a submittal of incorrect information in any permit application, the permittee shall promptly submit to the Secretary such supplemental facts or corrected information.
[45CSR§30-4.2.]

2.21. Permit Shield

- 2.21.1. Compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance provided that such applicable requirements are included and are specifically identified in this permit or the Secretary has determined that other requirements specifically identified are not applicable to the source and this permit includes such a determination or a concise summary thereof.
[45CSR§30-5.6.a.]
- 2.21.2. Nothing in this permit shall alter or affect the following:
- a. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance; or
 - b. The applicable requirements of the Code of West Virginia and Title IV of the Clean Air Act (Acid Deposition Control), consistent with § 408 (a) of the Clean Air Act.

- c. The authority of the Administrator of U.S. EPA to require information under § 114 of the Clean Air Act or to issue emergency orders under § 303 of the Clean Air Act.

[45CSR§30-5.6.c.]

2.22. Credible Evidence

- 2.22.1. Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defenses otherwise available to the permittee including but not limited to any challenge to the credible evidence rule in the context of any future proceeding.

[45CSR§30-5.3.e.3.B. and 45CSR38]

2.23. Severability

- 2.23.1. The provisions of this permit are severable. If any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid by a court of competent jurisdiction, the remaining permit terms and conditions or their application to other circumstances shall remain in full force and effect.

[45CSR§30-5.1.e.]

2.24. Property Rights

- 2.24.1. This permit does not convey any property rights of any sort or any exclusive privilege.

[45CSR§30-5.1.f.4]

2.25. Acid Deposition Control

- 2.25.1. Emissions shall not exceed any allowances that the source lawfully holds under Title IV of the Clean Air Act (Acid Deposition Control) or rules of the Secretary promulgated thereunder.

- a. No permit revision shall be required for increases in emissions that are authorized by allowances acquired pursuant to the acid deposition control program, provided that such increases do not require a permit revision under any other applicable requirement.

- b. No limit shall be placed on the number of allowances held by the source. The source may not, however, use allowances as a defense to noncompliance with any other applicable requirement.

- c. Any such allowance shall be accounted for according to the procedures established in rules promulgated under Title IV of the Clean Air Act.

[45CSR§30-5.1.d.]

- 2.25.2. Where applicable requirements of the Clean Air Act are more stringent than any applicable requirement of regulations promulgated under Title IV of the Clean Air Act (Acid Deposition Control), both provisions shall be incorporated into the permit and shall be enforceable by the Secretary and U. S. EPA.

[45CSR§30-5.1.a.2.]

3.0. Facility-Wide Requirements

3.1. Limitations and Standards

- 3.1.1. **Open burning.** The open burning of refuse by any person is prohibited except as noted in 45CSR§6-3.1.
[45CSR§6-3.1.]
- 3.1.2. **Open burning exemptions.** The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause or allow any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible.
[45CSR§6-3.2.]
- 3.1.3. **Asbestos.** The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management and the Bureau for Public Health - Environmental Health require a copy of this notice to be sent to them.
[40 C.F.R. 61 and 45CSR34]
- 3.1.4. **Odor.** No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.
[45CSR§4-3.1 State-Enforceable only.]
- 3.1.5. **Standby plan for reducing emissions.** When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45CSR11.
[45CSR§11-5.2]
- 3.1.6. **Emission inventory.** The permittee is responsible for submitting, on an annual basis, an emission inventory in accordance with the submittal requirements of the Division of Air Quality.
[W.Va. Code § 22-5-4(a)(14)]
- 3.1.7. **Ozone-depleting substances.** For those facilities performing maintenance, service, repair or disposal of appliances, the permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 C.F.R. Part 82, Subpart F, except as provided for Motor Vehicle Air Conditioners (MVACs) in Subpart B:
- a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the prohibitions and required practices pursuant to 40 C.F.R. §§ 82.154 and 82.156.
 - b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 C.F.R. § 82.158.
 - c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 C.F.R. § 82.161.
- [40 C.F.R. 82, Subpart F]

- 3.1.8. **Risk Management Plan.** Should this stationary source, as defined in 40 C.F.R. § 68.3, become subject to Part 68, then the owner or operator shall submit a risk management plan (RMP) by the date specified in 40 C.F.R. § 68.10 and shall certify compliance with the requirements of Part 68 as part of the annual compliance certification as required by 40 C.F.R. Part 70 or 71.
[40 C.F.R. 68]
- 3.1.9. No person shall cause, suffer, allow or permit any manufacturing process or storage structure generating fugitive particulate matter to operate that is not equipped with a system, which may include, but not be limited to, process equipment design, control equipment design or operation and maintenance procedures, to minimize the emissions of fugitive particulate matter. To minimize means such system shall be installed, maintained and operated to ensure the lowest fugitive particulate matter emissions reasonably achievable.
[45CSR§7-5.1. and 45CSR13-R13-2857, Condition 4.1.15.]
- 3.1.10. The owner or operator of a plant shall maintain particulate matter control of the plant premises, and plant owned, leased or controlled access roads, by paving, application of asphalt, chemical dust suppressants or other suitable dust control measures. Good operating practices shall be implemented and when necessary particulate matter suppressants shall be applied in relation to stockpiling and general material handling to minimize particulate matter generation and atmospheric entrainment.
[45CSR§7-5.2.]
- 3.1.11. The permittee shall maintain on site and operate a pressurized particulate suppressant spray truck, as often as necessary, to minimize fugitive emissions from plant access roads, lots, or access areas.
[CO-R7-95-13, Condition 7.a.11.C. State-Enforceable only.]
- 3.1.12. **Implementation of a Preventative Maintenance Program**
- a. The permittee shall maintain a computerized spare parts inventory tracking system for inventory, purchases, suppliers and availability of all components and materials necessary for operation of all emission control systems at the facility and the permittee's air pollution control spare parts inventory shall be updated monthly;
- b. The permittee shall use its best efforts to maintain availability of all components and materials identified in the permittee's air pollution control spare parts inventory as being prone to failure or otherwise requiring frequent replacement and shall provide monthly reports to the Secretary;
- c. The permittee shall take all steps necessary to implement the requirements of Sections 3.1.11. through 3.1.14., and 5.1.4. through 5.1.7. of this permit, including the air pollution control spare parts inventory and the Inspection and Maintenance Program submitted by the permittee as Appendix A of Consent Order agreement of April 16, 1993, a copy of which is attached hereto as Appendix A.
[CO-R7-95-13, Condition 7.a.12. State-Enforceable only.]
- 3.1.13. **General Operating Provision.** The permittee shall implement all measures necessary, including, but not limited to reducing furnace power input levels and stoking of furnaces, to abate or minimize, to the greatest extent practicable any fugitive or process emissions released or emitted as the result of the complete failure of the air pollution control equipment serving a source of fugitive or process emissions. This provision applies following the failure of any air pollution control equipment, and, such measures shall include the cessation of material tapping, crushing, sizing, or any other manufacturing, processing, or handling, to the extent emissions from such manufacturing, processing, or handling equipment is directly captured or controlled by the associated air pollution control equipment experiencing failure. Notwithstanding the above, a furnace, following the

failure of that furnace's associated air pollution control equipment, may be tapped once; thereby reducing the level of molten material in the furnace and protecting the immediate health and safety of plant personnel and equipment.

This provision does not limit or waive the permittee's right to pursue a variance request pursuant to 45CSR§7-10. Any decision by the Secretary in regards to such a variance request shall, for purposes of Consent Judgement CO-R7-95-13: Civil Action 94-C-1084, be deemed a final agency action, appealable directly to the Kanawha County Circuit Court pursuant to W.Va.R.C.p.81(a)(1). The permittee shall abide by the above referenced provisions pending review of this matter by the Kanawha County Circuit Court.

[CO-R7-95-13, Condition 7.a.13. State-Enforceable only.]

- 3.1.14. Notwithstanding the provisions of Section 3.1.13. of this permit, the permittee may achieve compliance with this permit and any other applicable requirement through shutdown of a source, group of sources, or the facility. The permittee may restart any source, group of sources, or facility shut down to achieve compliance provided that prior to restarting, the permittee, to the extent applicable, complies with all preceding compliance milestones applicable to the source, group of sources, or facility, as the case may be. To the extent that the permittee and the DAQ cannot agree regarding shutdown, restarting, and applicable preceding compliance milestones, either party may petition the Court for dispute resolution in accordance with Section 3.1.13. of this permit.

[CO-R7-95-13, Condition 7.a.14. State-Enforceable only.]

- 3.1.15. **Operational and work practice standards: Fugitive dust sources.**

- a. Each owner or operator of an affected ferromanganese and silicomanganese production facility must prepare, and at all times operate according to, a fugitive dust control plan that describes in detail the measures that will be put in place to control fugitive dust emissions from the individual fugitive dust sources at the facility.
- b. The owner or operator must submit a copy of the fugitive dust control plan to the designated permitting authority no later than November 21, 2001. The requirement for the owner or operator to operate the facility according to a written fugitive dust control plan is hereby incorporated in the operating permit.
- c. The owner or operator may use existing manuals that describe the measures in place to control fugitive dust sources required as part of a State implementation plan or other federally enforceable requirement for particulate matter to satisfy the requirements of Section 3.1.15.a. above.

[40 CFR §§ 63.1654(a)(1), (2), (3) and 45CSR34]

- 3.1.16. **Maintenance requirements.**

- a. The owner or operator of an affected source must comply with the requirements of 40 CFR §63.6(e).
- b.
 1. The owner or operator must develop and implement a written maintenance plan for each air pollution control device associated with submerged arc furnaces, and crushing and screening operations subject to 40 CFR part 63, subpart XXX. The owner or operator must keep the maintenance plan on record and available for the Administrator's inspection for the life of the air pollution control device or until the affected source is no longer subject to the provisions of 40 CFR Part 63.
 2. To satisfy the requirement to develop maintenance plans, the owner or operator may use the affected source's standard operating procedures (SOP) manual or other plan, provided the alternative plan

meets the requirements of this paragraph and is made available for inspection when requested by the Administrator.

- c. The procedures specified in the maintenance plan must include a preventive maintenance schedule that is consistent with good air pollution control practices for minimizing emissions and, for baghouses, ensure that the requirements specified in Section 3.2.3. of this permit are met.
- d. The owner or operator must perform monthly inspections of the equipment that is important to the performance of the furnace capture system. This inspection must include an examination of the physical condition of the equipment, suitable for detecting holes in ductwork or hoods, flow constrictions in ductwork due to dents or accumulated dust, and operational status of flow rate controllers (pressure sensors, dampers, damper switches, etc.). Any deficiencies must be recorded and proper maintenance and repairs performed.

[40 CFR §63.1655 and 45CSR34]

- 3.1.17. **Compliance demonstration with the operational and work practice standards.** *Fugitive dust sources.* Failure to have a fugitive dust control plan or failure to report deviations from the plan and take necessary corrective action would be a violation of the general duty to ensure that fugitive dust sources are operated and maintained in a manner consistent with good air pollution control practices for minimizing emissions per 40 CFR §63.6(e)(1)(i).

[40 CFR §63.1656(e)(1) and 45CSR34]

3.2. Monitoring Requirements

- 3.2.1. The permittee shall conduct visual emission (VE) observations in accordance with the methodology set forth in 45CSR7A "Compliance Test Procedures for 45CSR7". Emissions from all operating baghouses shall be read at least once per shift during daylight hours for a period of at least six (6) minutes while such source is in operation and venting to the associated baghouse. This requirement does not replace any VE observation requirements under Regulation 16 or any other permit requirements. Compliance with this limit shall demonstrate compliance with the less stringent limitation of 40 CFR§ 63.1657(a)(1).

[40 CFR §63.1657(a)(1) and 45CSR34; CO-R7-95-13, Condition 7.b.1.A. State-Enforceable only.]

- 3.2.2. All VE observation reports shall be conducted and completed by certified VE observers, and verified as true and accurate, and shall contain sufficient documentation to verify that all VE observations were taken in accordance with 45CSR7A. Thereafter, these records shall be maintained on file for five years at the facility as a permanent record of the permittee's VE observations.

[CO-R7-95-13, Conditions 7.b.3. State-Enforceable only.]

- 3.2.3. a. **Baghouses.** The owner or operator must conduct the following activities:
 - 1. Daily monitoring of pressure drop across each baghouse cell, or across the baghouse if it is not possible to monitor each cell individually, to ensure the pressure drop is within the normal operating range identified in the baghouse maintenance plan. (Note: Applies to crushing and screening baghouses. See Section 4.2.2.c. of this permit for furnace baghouses requirements.)
 - 2. Weekly confirmation that dust is being removed from hoppers through visual inspection, or equivalent means of ensuring the proper functioning of removal mechanisms.
 - 3. Daily check of compressed air supply for pulse-jet baghouses.

4. An appropriate methodology for monitoring cleaning cycles to ensure proper operation.
 5. Monthly check of bag cleaning mechanisms for proper functioning through visual inspection or equivalent means.
 6. Quarterly visual check of bag tension on reverse air and shaker-type baghouses to ensure that the bags are not kinked (knead or bent) or laying on their sides. Such checks are not required for shaker-type baghouses using self-tensioning (spring loaded) devices.
 7. Quarterly confirmation of the physical integrity of the baghouse structure through visual inspection of the baghouse interior for air leaks.
 8. Semiannual inspection of fans for wear, material buildup, and corrosion through visual inspection, vibration detectors, or equivalent means.
- b. As part of the maintenance plan required by Section 3.1.16.b. of this permit, the owner or operator must develop and implement corrective action procedures to be followed in the case of the observation of visible emissions from the baghouse, or the indication through the periodic baghouse system inspections that the system is not operating properly. The owner or operator must initiate corrective action as soon as practicable after the occurrence of the observation or event indicating a problem.
- c. The corrective action plan in Section 3.2.3.b. of this permit must include procedures used to determine the cause of a deviation or other indications of problems as well as actions to minimize emissions. These actions may include the following:
1. Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in emissions.
 2. Sealing off defective bags or filter media.
 3. Replacing defective bags or filter media, or otherwise repairing the control device.
 4. Sealing off a defective baghouse compartment.
 5. Shutting down the process producing the particulate matter emissions.
- d. Failure to monitor or failure to take corrective action under the requirements of Section 3.2.3. of this permit would be a violation of the general duty to operate in a manner consistent with good air pollution control practices that minimizes emissions per 60 CFR §63.6(e)(1)(i).
- [40 CFR §§63.1657(a)(2), (a)(4), (a)(5), and (a)(6), and 45CSR34]**

3.3. Testing Requirements

- 3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary exercise his option to conduct such test(s), the operator shall provide all necessary sampling connections and sampling ports to be located in such manner as the Secretary

may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:

- a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63, if applicable, in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable.
- b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit.
- c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.
- d. The permittee shall submit a report of the results of the stack test within 60 days of completion of the test. The test report shall provide the information necessary to document the objectives of the test and to determine whether proper procedures were used to accomplish these objectives. The report shall include the following: the certification described in paragraph 3.5.1; a statement of compliance status, also signed by a responsible official; and, a summary of conditions which form the basis for the compliance status evaluation. The summary of conditions shall include the following:
 1. The permit or rule evaluated, with the citation number and language.
 2. The result of the test for each permit or rule condition.
 3. A statement of compliance or non-compliance with each permit or rule condition.

[WV Code § 22-5-4(a)(14-15) and 45CSR13]

3.3.2. Performance testing, test methods, and compliance demonstrations.

- a. All performance tests must be conducted according to the requirements in 40 CFR §63.7.
- b. Each performance test must consist of three separate and complete runs using the applicable test methods.
- c. Each run must be conducted under conditions that are representative of normal process operations.

- d. Performance tests conducted on air pollution control devices serving submerged arc furnaces must be conducted such that at least one tapping period, or at least 20 minutes of a tapping period, whichever is less, is included in at least two of the three runs. The sampling time for each run must be at least as long as three times the average tapping period of the tested furnace, but no less than 60 minutes.
 - e. The sample volume for each run must be at least 30 dscf.
[40 CFR §63.1656(a) and 45CSR34]
- 3.3.3. **Test methods.** The following test methods in 40 CFR part 60, Appendix A must be used to determine compliance with the emission standards.
- a. Method 1 to select the sampling port location and the number of traverse points.
 - b. Method 2 to determine the volumetric flow rate of the stack gas.
 - c. Method 3 to determine the dry molecular weight of the stack gas.
 - d. Method 4 to determine the moisture content of the stack gas.
 - e. Method 5 to determine the particulate matter concentration of the stack gas for negative pressure baghouses and positive pressure baghouses with stacks.
 - f. Method 5D to determine particulate matter concentration and volumetric flow rate of the stack gas for positive pressure baghouses without stacks.
 - g. Method 9 to determine opacity.
 - h. The owner or operator may use equivalent alternative measurement methods approved by the Administrator following the procedures described in 40 CFR §63.7(f).
[40 CFR §63.1656(b) and 45CSR34]

3.4. Recordkeeping Requirements

- 3.4.1. **Monitoring information.** The permittee shall keep records of monitoring information that include the following:
- a. The date, place as defined in this permit, and time of sampling or measurements;
 - b. The date(s) analyses were performed;
 - c. The company or entity that performed the analyses;
 - d. The analytical techniques or methods used;
 - e. The results of the analyses; and
 - f. The operating conditions existing at the time of sampling or measurement.
[45CSR§30-5.1.c.2.A. and 45CSR13-R13-2857, Condition 4.3.1.]

- 3.4.2. **Retention of records.** The permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of monitoring sample, measurement, report, application, or record creation date. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Where appropriate, records may be maintained in computerized form in lieu of the above records.
[45CSR§30-5.1.c.2.B.]
- 3.4.3. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.
[45CSR§30-5.1.c. State-Enforceable only.]
- 3.4.4. The permittee shall record on a daily basis the hours of operation and gallons of water or other materials used in operation of pressurized particulate suppressant truck.
[CO-R7-95-13, Condition 7.b.2.B. State-Enforceable only.]
- 3.4.5. a. **General recordkeeping requirements.**
1. The owner or operator of a ferromanganese and silicomanganese production facility must comply with all of the recordkeeping requirements under 40 CFR §63.10.
 2. As required by 40 CFR §63.10(b)(2), the owner or operator must maintain records for 5 years from the date of each record of:
 - i. The occurrence and duration of each startup, shutdown, or malfunction of operation (i.e., process equipment and control devices);
 - ii. The occurrence and duration of each malfunction of the source or air pollution control equipment;
 - iii. All maintenance performed on the air pollution control equipment;
 - iv. Actions taken during periods of startup, shutdown, and malfunction (including corrective actions to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation) when such actions are different from the procedures specified in the startup, shutdown, and malfunction plan;
 - v. All information necessary to demonstrate conformance with the startup, shutdown, and malfunction plan when all actions taken during periods of startup, shutdown, and malfunction (including corrective actions) are consistent with the procedures specified in such plan. This information can be recorded in a checklist or similar form (see 40 CFR §63.10(b)(2)(v));
 - vi. All required measurements needed to demonstrate compliance with the standard and to support data that the source is required to report, including, but not limited to, performance test measurements (including initial and any subsequent performance tests) and measurements as may be necessary to determine the conditions of the initial test or subsequent tests;
 - vii. All results of initial or subsequent performance tests;

- viii. If the owner or operator has been granted a waiver from recordkeeping or reporting requirements under 40 CFR §63.10(f), any information demonstrating whether a source is meeting the requirements for a waiver of recordkeeping or reporting requirements;
- ix. If the owner or operator has been granted a waiver from the initial performance test under 40 CFR §63.7(h), a copy of the full request and the Administrator's approval or disapproval;
- x. All documentation supporting initial notifications and notifications of compliance status required by 40 CFR §63.9; and
- xi. As required by 40 CFR §63.10(b)(3), records of any applicability determination, including supporting analyses.

b. Specific recordkeeping requirements.

- 1. In addition to the general records required by Section 3.4.5.a. of this permit, the owner or operator must maintain records for 5 years from the date of each record of:
 - i. Records of manufacturer certification that monitoring devices are accurate to within 5 percent (unless otherwise specified in 40 CFR part 63, subpart XXX) and of calibrations performed at the manufacturer's recommended frequency, or at a frequency consistent with good engineering practice, or as experience dictates.
 - ii. Copy of the written maintenance plan for each air pollution control device.
 - iii. Copy of the fugitive dust control plan.
 - iv. Records of each maintenance inspection and repair, replacement, or other corrective action.
- 2. All records for the most recent 2 years of operation must be maintained on site. Records for the previous 3 years may be maintained off site.

[40 CFR §§63.1660(a), 63.1660(b)(1)(ii), (v), (vi), (vii), 63.1660(b)(2), and 45CSR34]

3.5. Reporting Requirements

- 3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.
[45CSR§30-4.4. and 5.1.c.3.D.]
- 3.5.2. A permittee may request confidential treatment for the submission of reporting required under 45CSR§30-5.1.c.3. pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.
[45CSR§30-5.1.c.3.E.]
- 3.5.3. Except for the electronic submittal of the annual certification to the USEPA as required in 3.5.5 below, all notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, mailed first class, or by private carrier with postage prepaid to the address(es) set forth below

or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

If to the DAQ:

Director
WVDEP
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0475
FAX: 304/926-0478

If to the US EPA:

Associate Director
Office of Air Enforcement and Compliance
Assistance (3AP20)
U. S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

- 3.5.4. **Certified emissions statement.** The permittee shall submit a certified emissions statement and pay fees on an annual basis in accordance with the submittal requirements of the Division of Air Quality.
[45CSR§30-8.]
- 3.5.5. **Compliance certification.** The permittee shall certify compliance with the conditions of this permit on the forms provided by the DAQ. In addition to the annual compliance certification, the permittee may be required to submit certifications more frequently under an applicable requirement of this permit. The annual certification shall be submitted to the DAQ and USEPA on or before March 15 of each year, and shall certify compliance for the period ending December 31. The annual certification to the USEPA shall be submitted in electronic format only. It shall be submitted by e-mail to the following address: R3_APD_Permits@epa.gov. The permittee shall maintain a copy of the certification on site for five (5) years from submittal of the certification.
[45CSR§30-5.3.e.]
- 3.5.6. **Semi-annual monitoring reports.** The permittee shall submit reports of any required monitoring on or before September 15 for the reporting period January 1 to June 30 and on or before March 15 for the reporting period July 1 to December 31. All instances of deviation from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official consistent with 45CSR§30-4.4.
[45CSR§30-5.1.c.3.A.]
- 3.5.7. **Emergencies.** For reporting emergency situations, refer to Section 2.17 of this permit.
- 3.5.8. **Deviations.**
- a. In addition to monitoring reports required by this permit, the permittee shall promptly submit supplemental reports and notices in accordance with the following:
1. Any deviation resulting from an emergency or upset condition, as defined in 45CSR§30-5.7., shall be reported by telephone or telefax within one (1) working day of the date on which the permittee becomes aware of the deviation, if the permittee desires to assert the affirmative defense in accordance with 45CSR§30-5.7. A written report of such deviation, which shall include the probable cause of such deviations, and any corrective actions or preventative measures taken, shall be submitted and certified by a responsible official within ten (10) days of the deviation.
 2. Any deviation that poses an imminent and substantial danger to public health, safety, or the environment shall be reported to the Secretary immediately by telephone or telefax. A written report

of such deviation, which shall include the probable cause of such deviation, and any corrective actions or preventative measures taken, shall be submitted by the responsible official within ten (10) days of the deviation.

3. Deviations for which more frequent reporting is required under this permit shall be reported on the more frequent basis.
4. All reports of deviations shall identify the probable cause of the deviation and any corrective actions or preventative measures taken.

[45CSR§30-5.1.c.3.C.]

- b. The permittee shall, in the reporting of deviations from permit requirements, including those attributable to upset conditions as defined in this permit, report the probable cause of such deviations and any corrective actions or preventive measures taken in accordance with any rules of the Secretary.

[45CSR§30-5.1.c.3.B.]

- 3.5.9. **New applicable requirements.** If any applicable requirement is promulgated during the term of this permit, the permittee will meet such requirements on a timely basis, or in accordance with a more detailed schedule if required by the applicable requirement.

[45CSR§30-4.3.h.1.B.]

- 3.5.10. The permittee shall maintain all VE observation records on site for a period of at least five years and shall provide to the Director on a monthly basis a copy of all visible emissions observations certified by plant management to be an accurate and true report for the previous month.

[CO-R7-95-13, Conditions 7.b.1.C. State-Enforceable only.]

- 3.5.11. For any failure of air pollution control equipment subject to the provisions in Section 3.1.13. of this permit, with a duration in excess of two (2) hours, the permittee is required to: notify the Division of Air Quality regarding the failure of air pollution control equipment within twenty-four (24) hours, excluding weekends and holidays, by telephone; and record the date, time, and duration of the failure of air pollution control equipment, the steps taken to determine the cause of the failure of air pollution control equipment, and the steps taken by the permittee to minimize emissions and their impact. The permittee is required to summarize this information in a written report to be submitted within fourteen (14) days to the Director, Division of Air Quality. The permittee shall retain a copy of this notice letter in its files for a period of five (5) years.

[CO-R7-95-13, Conditions 7.b.7. State-Enforceable only.]

- 3.5.12. Any reports required under the provisions of Section 3.5.10. of this permit shall be provided to the Director within thirty (30) days of the end of the month.

[CO-R7-95-13, Conditions 7.b.8. State-Enforceable only.]

- 3.5.13. As required by 40 CFR §63.9(b), unless otherwise specified, the owner or operator must submit the following written notifications to the Administrator:

- a. As required by 40 CFR §63.9(b)(2), the owner or operator of an affected source that has an initial startup before the effective date of the standard must notify the Administrator that the source is subject to the requirements of the standard. The notification must be submitted no later than 120 calendar days after May 20, 1999 (or within 120 calendar days after the source becomes subject to this standard) and must contain the information specified in 40 CFR §63.9(b)(2)(i) through (b)(2)(v).

- b. As required by 40 CFR §63.9(b)(5), the owner or operator who, after the effective date of this standard, intends to construct a new affected source or reconstruct an affected source subject to this standard, or reconstruct a source such that it becomes an affected source subject to this standard, must notify the Administrator, in writing, of the intended construction or reconstruction.

[40 CFR §§63.1658(a)(1),(2), (5), and 45CSR34]

- 3.5.14. **Notification of compliance status.** The owner or operator of an affected source must submit a notification of compliance status as required by 40 CFR §63.9(h). The notification must be sent in accordance with Sections 3.5.6. and 3.5.15.a.1. of this permit.

[40 CFR §63.1658(f) and 45CSR34]

- 3.5.15. a. **General reporting requirements.** The owner or operator of a ferromanganese and silicomanganese production facility must comply with all of the reporting requirements under 40 CFR §63.10 of subpart A, unless otherwise specified in 40 CFR part 63, subpart XXX.

1. **Frequency of reports.** As provided by 40 CFR §63.10(a)(5), if the owner or operator is required to submit periodic reports to a State on an established time line, he or she may change the dates by which periodic reports submitted under this part may be submitted (without changing the frequency of reporting) to be consistent with the State's schedule by mutual agreement between the owner or operator and the State. This provision may be applied at any point after the source's compliance date.

2. **Reporting results of performance tests.** As required by 40 CFR §63.10(d)(2), the owner or operator of an affected source must report the results of the initial performance test as part of the notification of compliance status required in Section 3.5.14. of this permit.

3. **Periodic startup, shutdown, and malfunction reports.**

- i. As required by 40 CFR §63.10(d)(5)(i), if actions taken by an owner or operator during a startup, shutdown, or malfunction of an affected source (including actions taken to correct a malfunction) are consistent with the procedures specified in the startup, shutdown, and malfunction plan, the owner or operator must state such information in a semiannual report. The report, to be certified by the owner or operator or other responsible official, must be submitted semiannually in accordance with Section 3.5.6. of this permit; and
- ii. Any time an action taken by an owner or operator during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) is not consistent with the procedures in the startup, shutdown, and malfunction plan, the owner or operator must comply with all requirements of 40 CFR §63.10(d)(5)(ii).

- b. **Specific reporting requirements.** In addition to the information required under 40 CFR §63.10, reports required under Section 3.5.15.a. of this permit must include the information specified in paragraphs b.1. through b.4. below. As allowed by 40 CFR §63.10(a)(3), if any State requires a report that contains all of the information required in a report listed in this section, an owner or operator may send the Administrator a copy of the report sent to the State to satisfy the requirements of this section for that report.

1. **Air pollution control devices.** The owner or operator must submit reports that summarize the records maintained as part of the practices described in the maintenance plan for air pollution control devices required under Section 3.1.15.b. of this permit, including an explanation of the periods when the procedures were not followed and the corrective actions taken.

2. **Fugitive dust.** The owner or operator must submit reports that explain the periods when the procedures outlined in the fugitive dust control plan pursuant to Section 3.1.15.a. were not followed and the corrective actions taken.
3. **Capture system.** The owner or operator must submit reports that summarize the monitoring parameter excursions measured pursuant to Section 4.2.4. of this permit and the corrective actions taken.
4. **Frequency of reports.** The owner or operator must submit reports pursuant to 40 CFR §63.10(e)(3) that are associated with excess emissions events. These reports are to be submitted on a quarterly basis, unless the owner or operator can satisfy the requirements in 40 CFR §63.10(e)(3) to reduce the frequency to a semiannual basis. All other reports specified in paragraphs b.1. through b.3. above must be submitted semiannually.

[40 CFR §63.1659 and 45CSR34]

3.6. Compliance Plan

- 3.6.1. None.

3.7. Permit Shield

- 3.7.1. The permittee is hereby granted a permit shield in accordance with 45CSR§30-5.6. The permit shield applies provided the permittee operates in accordance with the information contained within this permit.
- 3.7.2. The following requirements specifically identified are not applicable to the source based on the determinations set forth below. The permit shield shall apply to the following requirements provided the conditions of the determinations are met.
 - a. 40 CFR Part 60, subpart K, Ka, and Kb - The facility has three above ground storage tanks with capacities less than 19,813 gallons.
 - b. 40 CFR Part 60, subpart Z - This NSPS applies to facilities that commence construction or modification after October 21, 1974. Electric Arc Furnaces No. 2 and No. 5, were installed in 1966, and in January, 1974, respectively. Electric Arc Furnace No. 7 commenced construction in March 1974 when the owner or operator entered into contractual obligations.
 - c. 40 CFR 64 - The emissions controls for the new equipment consists of full and partial enclosures. Enclosures do not meet the definition of a control device in accordance with 40 CFR § 64.1, therefore CAM is not applicable to the new equipment. It was determined during the initial permit review and subsequent modifications that CAM was not applicable to the rest of the facility.

4.0. Furnace Requirements [No. 2 (001-01), No. 5 (001-02), and No. 7 (001-03)]

4.1. Limitations and Standards

- 4.1.1. No person shall cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any process source operation which is greater than twenty (20) percent opacity, except for smoke and/or particulate matter emitted from any process source operation which is less than forty (40) percent opacity for any period or periods aggregating no more than five (5) minutes in any sixty (60) minute period. Compliance with this limit shall demonstrate compliance with the less stringent limitation of 40 CFR § 63.1653.
[45CSR§§7-3.1. and 3.2., 40 CFR §63.1653, and 45CSR34]
- 4.1.2. No person shall circumvent the provisions of 45CSR7 by adding additional gas to any exhaust or group of exhausts for the purpose of reducing the stack gas concentration.
[45CSR§7-4.3.]
- 4.1.3. Type 'b' duplicate source operations whose air pollution control equipment efficiency is a minimum of ninety-nine percent (99%) by weight and whose total process weight rate is less than two hundred fifty thousand (250,000) pounds per hour shall be exempted from the requirements of 45CSR§7-4.1 provided that smoke emitted into the open air from any such duplicate source operation is less than twenty percent (20%) opacity.
[45CSR§7-4.7.a.]
- 4.1.4. Any stack serving any process source operation or air pollution control equipment on any process source operation shall contain flow straightening devices or a vertical run of sufficient length to establish flow patterns consistent with acceptable stack sampling procedures.
[45CSR§7-4.12.]
- 4.1.5. Potential Hazardous Material Emissions--Persons responsible for manufacturing process source operations from which hazardous particulate matter material may be emitted such as, but not limited to, lead, arsenic, beryllium and other such materials shall give the utmost care and consideration to the potential harmful effects of the emissions resulting from such activities. Evaluations of these facilities as to adequacy, efficiency and emission potential will be made on an individual basis by the Director working in conjunction with other appropriate governmental agencies.
[45CSR§7-4.13.]
- 4.1.6. No person shall cause, suffer, allow or permit any manufacturing process generating fugitive particulate matter to operate that is not equipped with a system, which may include, but not be limited to, process equipment design, control equipment design or operation and maintenance procedures, to minimize the emissions of fugitive particulate matter. To minimize means such system shall be installed, maintained and operated to ensure the lowest fugitive particulate matter emissions reasonably achievable.
[45CSR§7-5.1.]
- 4.1.7. Sections 4.1.1. and 4.1.6. of this permit shall not apply to particulate matter emitted from the operation of an existing ferroalloy electric submerged arc furnace during blowing taphole events, poling and oxygen lancing operations. Poling emissions shall not exceed five (5) minutes in duration during any poling operation. Compliance with this limit shall demonstrate compliance with the less stringent limitation of 40 CFR § 63.1653(b).
[45CSR§7-5.3., 40 CFR §63.1653(b), and 45CSR34]

- 4.1.8. No person shall cause, suffer, allow or permit the emission into the open air from any source operation an in-stack sulfur dioxide concentration exceeding 2,000 parts per million by volume from existing source operations, except as provided in subdivisions 4.1.a through 4.1.e. of 45CSR10.
[45CSR§10-4.1.]
- 4.1.9. No owner or operator shall cause to be discharged into the atmosphere from any existing open submerged arc furnace exhaust gases (including primary and tapping) containing particulate matter in excess of the following:
1. 21.7 pounds per hour (lb/hr) when producing ferromanganese in an open furnace operating at a furnace power input of 22 MW or less; or
 2. 29.8 lb/hr when producing ferromanganese in an open furnace operating at a furnace power input greater than 22 MW; or
 3. 35.9 lb/hr when producing silicomanganese in an open furnace operating at a furnace power input greater than 25 MW; or
 4. 27.2 lb/hr when producing silicomanganese in an open furnace operating at a furnace power input of 25 MW or less.
- [40 CFR §63.1652(b) and 45CSR34]**

4.2. Monitoring Requirements

- 4.2.1. The permittee shall conduct visual emission (VE) observations in accordance with Sections 3.2.1. and 3.2.2. of this permit.
- a. Visible emissions observations on the No. 5 and No. 7 furnace baghouse are not required during any shift in which proper observer location cannot be achieved;
 - b. For each incident during daylight hours where any furnace by-pass cap is opened, regardless of furnace power input or operations status, VE observations shall be initiated no later than ten (10) minutes from the time such by-pass caps are opened and shall continue for at least four (4) hours, until such time as the by-pass caps are closed, or VE observations of the by-pass cap are 10% or less for at least ten minutes, whichever occurs first;
[40 CFR §63.1652(b) and 45CSR34; CO-R7-95-13, Conditions 7.b.1.A. and B. State-Enforceable only.]
- 4.2.2. The permittee shall continue to calibrate, maintain, and operate instrumentation to continuously monitor and record the following:
- a. Power input to each furnace.
 - b. Current or power input and winding temperature for each furnace baghouse fan motor.
 - c. Pressure drop across each furnace baghouse fan. Compliance with this limit shall demonstrate compliance with the less stringent limitation of 40 CFR §63.1657(a)(2)(i).
[40 CFR §63.1657(a)(2)(i), and 45CSR34; CO-R7-95-13, Condition 7.b.4. State-Enforceable only.]

4.2.3. Compliance demonstration with opacity standards.

- a. 1. The owner or operator must conduct initial opacity observations of the shop building to demonstrate compliance with the applicable opacity standards according to 40 CFR §63.6(h)(5), which addresses the conduct of opacity or visible emission observations.
2. In conducting the opacity observations of the shop building, the observer must limit his or her field of view to the area of the shop building roof monitor that corresponds to the placement of the affected submerged arc furnaces.
3. The owner or operator must conduct the opacity observations according to EPA Method 9 of 40 CFR part 60, appendix A, for a minimum of 60 minutes.
- b. 1. When demonstrating initial compliance with the shop building opacity standard, as required by Section 4.2.3.a.1. of this permit, the owner or operator must simultaneously establish parameter values for one of the following: the control system fan motor amperes and all capture system damper positions, the total volumetric flow rate to the air pollution control device and all capture system damper positions, or volumetric flow rate through each separately ducted hood that comprises the capture system.
2. The owner or operator may petition the Administrator to reestablish these parameters whenever he or she can demonstrate to the Administrator's satisfaction that the submerged arc furnace operating conditions upon which the parameters were previously established are no longer applicable. The values of these parameters determined during the most recent demonstration of compliance must be maintained at the appropriate level for each applicable period.

Fan Amp Operating Range

Furnace	Fan	Range (amps)	Damper Setting (% open)
No. 5 (001-02)	Primary	150 minimum	60-100 % (usually 100% when running)
No. 7 (001-03)	Primary	300 minimum	90-100%
No. 2 (001-01)	E1	295 minimum	30% when running
	E2	295 minimum	30% when running

- c. The owner or operator must demonstrate continuing compliance with the opacity standards by following the monitoring requirements specified in Section 4.2.4. of this permit and the reporting and recordkeeping requirements specified in Sections 3.5.15.b.3., 3.4.5.b., and 4.5.1. of this permit.

[40 CFR §63.1656(d) and 45CSR34]

4.2.4. **Shop opacity.** The owner or operator subject to the opacity standards in 40 CFR §63.1653 must comply with one of the monitoring options in paragraphs a., b., or c. below. The selected option must be consistent with that selected during the initial performance test described in Section 4.2.3.b. of this permit. Alternatively, the owner or operator may use the provisions of 40 CFR §63.8(f) to request approval to use an alternative monitoring method.

- a. The owner or operator must check and record the control system fan motor amperes and capture system damper positions once per shift.

- b. The owner or operator must install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood.
- c. The owner or operator must install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate at the inlet of the air pollution control device and must check and record the capture system damper positions once per shift.
- d. The flow rate monitoring devices must meet the following requirements:
 - 1. Be installed in an appropriate location in the exhaust duct such that reproducible flow rate monitoring will result.
 - 2. Have an accuracy ± 10 percent over its normal operating range and be calibrated according to the manufacturer's instructions.
- e. The Administrator may require the owner or operator to demonstrate the accuracy of the monitoring device(s) relative to Methods 1 and 2 of 40 CFR part 60, appendix A.
- f. Failure to maintain the appropriate capture system parameters (fan motor amperes, flow rate, and/or damper positions) establishes the need to initiate corrective action as soon as practicable after the monitoring excursion in order to minimize excess emissions.
- g. Failure to monitor or failure to take corrective action under the requirements of Section 4.2.4. of this permit is a violation of the general duty to operate in a manner consistent with good air pollution control practices that minimizes emissions per 40 CFR §63.6(e)(1)(i).

[40 CFR §63.1657(c) and 45CSR34]

4.3. Testing Requirements

- 4.3.1. The permittee shall demonstrate compliance with Section 4.1.8. of this permit by periodic testing in accordance with 40 CFR Part 60, Appendix A, Method 6 or other equivalent EPA testing method approved by the Director and the approved monitoring plan (See Appendix B.)
[45CSR§10-8.1.]
- 4.3.2. Stack tests in accordance with 40 CFR Part 63, Subpart XXX shall be performed within ninety (90) days of startup of any furnace. At least sixty (60) days prior to conducting stack tests, a test protocol shall be submitted to DAQ outlining test methodologies, operating conditions, port locations, and any other information deemed necessary by DAQ. Compliance with these limits shall demonstrate compliance with the less stringent limitations of 40 CFR §§63.1658(d) and (e), and 40 CFR § 63.7.
[40 CFR §§63.1658(d) and (e), 40 CFR §63.7, and 45CSR34]
- 4.3.3. *Compliance demonstration with the emission standards.*
 - a. The owner or operator must conduct an initial performance test for air pollution control devices or vent stacks subject to Section 4.1.9. of this permit to demonstrate compliance with the applicable emission standards.

- b. The owner or operator must conduct annual performance tests for the air pollution control devices and vent stacks associated with the submerged arc furnaces, with the exception of any air pollution control devices that serve tapping emissions combined with non-furnace emissions, such as equipment associated with crushing and screening. Also excluded are air pollution control devices that serve dedicated non-furnace emissions, such as equipment associated with crushing and screening. The results of these annual tests will be used to demonstrate compliance with the emission standards in Section 4.1.9. of this permit, as applicable.
- c. Following development, and approval, if required, of the site-specific test plan, the owner or operator must conduct a performance test for each air pollution control device or vent stack to measure particulate matter and determine compliance with the applicable standard.

An owner or operator of sources subject to the particulate mass rate standards in Section 4.1.9. of this permit must determine compliance as follows:

1. Determine the particulate matter concentration and volumetric flow rate using Method 5 or 5D, as applicable.
2. Compute the mass rate (E_M) of particulate matter for each run using the following equation:

$$E_M = \left[\sum_{i=1}^N C_{si} Q_{sdi} \right] / K$$

Where: E_M = mass rate of particulate matter, kg/hr (lb/hr).

N = total number of exhaust streams at which emissions are quantified.

C_{si} = concentration of particulate matter from exhaust stream "i", mg/dscm (gr/dscf).

Q_{sdi} = volumetric flow rate of effluent gas from exhaust stream "i", dscm/hr (dscf/hr)

K = conversion factor, 1×10^6 mg/kg (7,000 gr/lb).

3. Compliance is demonstrated if the average of the mass rates for the three runs comprising the performance test does not exceed the standard.

[40 CFR §§63.1656(c)(1), (2), (3)(ii), and 45CSR34]

4.4. Recordkeeping Requirements

- 4.4.1. Records of the visible emission checks conducted in accordance with Section 4.2.1. of this permit shall be maintained in accordance with Section 3.2.2. of this permit.

[CO-R7-95-13, Conditions 7.b.3. State-Enforceable only.]

- 4.4.2. The permittee shall record on a daily basis:
 - a. During each incident of by-pass cap usage or where any visual emissions are observed from such by-pass cap, the permittee shall record the following information:
 - i. Exact time that the by-pass cap was opened;
 - ii. Exact time that the by-pass cap was closed;

- iii. Cause or causes leading to the by-pass cap usage;
- iv. Actions taken to prevent recurrence of cause or causes leading to by-pass cap usage;
- v. Reports of any citizen complaints filed with or received by the permittee;
- vi. Power input to the furnace.

[CO-R7-95-13, Condition 7.b.2.A. State-Enforceable only.]

- 4.4.3. The permittee shall maintain on file at the facility a permanent record of the fan performance curve or representative fan performance curve prepared for a specific temperature for each furnace baghouse fan.

[CO-R7-95-13, Condition 7.b.5. State-Enforceable only.]

- 4.4.4. The permittee shall maintain a certified log of the time, duration and furnace number of all "blowing tap holes," "poling," and "oxygen lancing" at each furnace. This log must be made available upon request of any representative of the Division of Air Quality and must be retained for five (5) years.

[CO-R7-95-13, Condition 7.b.6. State-Enforceable only.]

4.5. Reporting Requirements

- 4.5.1. The permittee shall report the operating parameters established in Section 4.2.3.b.1. with each semi-annual monitoring report as required in Section 3.5.6. of this permit.

[45CSR§30-5.1.c.]

4.6. Compliance Plan

- 4.6.1. None.

5.0. Manufacturing Processes Requirements [009-01, 009-02, 009-03, 009-04, 009-06, 00A-01, and 00C-01]

5.1. Limitations and Standards

5.1.1. No person shall cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any process source operation which is greater than twenty (20) percent opacity, except for smoke and/or particulate matter emitted from any process source operation which is less than forty (40) percent opacity for any period or periods aggregating no more than five (5) minutes in any sixty (60) minute period.
[45CSR§§7-3.1. and 3.2.]

5.1.2. No person shall cause, suffer, allow, or permit PM to be vented into the open air from any type source operation or duplicate source operation, or from all air pollution control equipment installed on any type source operation or duplicate source operation in excess of the quantities specified in this permit.

Emission Unit ID	Equipment Description	Max. Allowable PM Emission Limit (lb/hr)
009-06	Transfer Points	31.24

[45CSR§7-4.1. (009-06)]

5.1.3. Type 'b' duplicate source operations whose air pollution control equipment efficiency is a minimum of ninety-nine percent (99%) by weight and whose total process weight rate is less than two hundred fifty thousand (250,000) pounds per hour shall be exempted from the requirements of 45CSR§7-4.1 provided that smoke emitted into the open air from any such duplicate source operation is less than twenty percent (20%) opacity.
[45CSR§7-4.7.a. (009-01, 009-02, 009-03, 009-04 and 00A-01)]

5.1.4. The permittee shall maintain instrumentation to continuously monitor water pressures at or near each spray nozzle of the wet suppression systems for slag crushing systems. The permittee shall repair or replace any nozzle failing to provide effective flow characteristics at anytime that the slag crushing is in operation.
[CO-R7-95-13, Condition 7.a.10.A. and CO-R7, 13, 16-93-1, Condition IV.9. State-Enforceable only.]

5.1.5. The permittee shall not employ soderburg paste to provide refractory lining for any ladle.
[CO-R7-95-13, Condition 7.a.11.B. State-Enforceable only.]

5.1.6. All ladle to ladle repouring of molten material shall be conducted with a system to minimize fugitive emissions.
[CO-R7-95-13, Condition 7.a.6.E. State-Enforceable only.]

5.1.7. The permittee shall maintain the product crushing and sizing operations in good operating condition.
[CO-R7-95-13, Condition 7.a.9.A. State-Enforceable only.]

5.1.8. *Crushing and screening equipment.* No owner or operator shall cause to be discharged into the atmosphere from any existing piece of equipment associated with crushing and screening exhaust gases containing particulate matter in excess of 0.03 gr/dscf.
[40 CFR §63.1652(e)(2) and 45CSR34]

5.1.9. The permittee shall operate the Gator triple-deck screen at a feed rate not to exceed 33 tons per hour.
[CO-R13-E-2012-11, Order for Compliance - Condition 4. State-Enforceable only.]

5.2. Monitoring Requirements

- 5.2.1. The permittee shall conduct visual emission (VE) observations in accordance with Sections 3.2.1. and 3.2.2 of this permit.

[CO-R7-95-13, Conditions 7.b.1.A. and B. State-Enforceable only.]

5.3. Testing Requirements

- 5.3.1. *Compliance demonstration with the emission standards.*

- a. The owner or operator must conduct an initial performance test for air pollution control devices or vent stacks subject to Section 5.1.8. of this permit to demonstrate compliance with the applicable emission standards.
- b. Following development, and approval, if required, of the site-specific test plan, the owner or operator must conduct a performance test for each air pollution control device or vent stack to measure particulate matter and determine compliance with the applicable standard.

An owner or operator of sources subject to the particulate matter concentration standards in Section 5.1.8. of this permit must determine the particulate matter concentration using Method 5 or 5D, as applicable. Compliance is demonstrated if the average concentration for the three runs comprising the performance test does not exceed the standard.

[40 CFR §§63.1656(c)(1), (c)(3)(i) and 45CSR34]

5.4. Recordkeeping Requirements

- 5.4.1. Records of the visible emission checks conducted in accordance with Section 5.2.1. of this permit shall be maintained in accordance with Section 3.2.2. of this permit.

[CO-R7-95-13, Conditions 7.b.3. State-Enforceable only.]

- 5.4.2. The permittee shall record on a daily basis the hours of operation and gallons of water used in operation on the slag crushing plant.

[CO-R7-95-13, Conditions 7.b.2.c. State-Enforceable only.]

- 5.4.3. The permittee shall track and record the process feed rate for the Gator triple-deck screen to demonstrate ongoing compliance with the 33 ton per hour throughput limit.

[CO-R13-E-2012-11, Order for Compliance - Condition 5. State-Enforceable only.]

5.5. Reporting Requirements

- 5.5.1. None.

5.6. Compliance Plan

- 5.6.1. None.

6.0. R13-Manufacturing Processes Requirements [SC-1C, BC-1C, CR-1C, BC-2C, OS-1C, OS-2C, EX-1, OS-1X, PT-1, OS-1P, SC-01A, SC-01B, RBSC-01, RBSC-02, BTSC-01, CR-01B, RBCR-01, BC1A, BC2A, BC1B, BC2B, BC1C, BC2C, BC1D, BC2D, OCS1, OCS2, OCS3, H1, PF, CS1, CC1, BC1, BC2, BC3, CS2, BC4, CC2]

6.1. Limitations and Standards

6.1.1. Emissions from the operations covered under this permit shall not exceed the following:

	PM/Mn Compounds		PM ₁₀ /Mn Compounds	
	lb/hr	TPY	lb/hr	TPY
Crushing	21.8	2.45	10.31	1.16
Screening	21.8	2.45	10.31	1.16
Pelletizer	0.01	0.01	0.01	0.01
Extruder	0.39	0.1	0.18	0.05
Transfer Points	29	3.32	13.71	1.57
Stockpiles	3.36	0.61	1.59	0.29
Total	76.36	8.94	36.11	4.24

[45CSR13-R13-2857, Condition 4.1.1.]

6.1.2. Total combined throughput of material into the following equipment shall not exceed:

Crusher CR-1C	400 tons per hour	90,000 tons per year
Screen SC-1C	400 tons per hour	90,000 tons per year
Extruder EX-1	20 tons per hour	10,000 tons per year
Pelletizer PT-1	6 tons per hour	10,000 tons per year

Compliance with these limits shall be based on a 12 month rolling total. For the purposes of this permit a 12 month rolling total means the sum of material throughput at the end of any given month for the previous 12 months.

[45CSR13-R13-2857, Conditions 4.1.2., 4.1.3., 4.1.4., 4.1.5. and 45CSR§30-5.1.c.]

6.1.3. The base area of these stockpiles shall not exceed 5,000 sq. ft. EACH: OS-1C, OS-2C, OS-1X, and OS-1P.
 [45CSR13-R13-2857, Condition 4.1.6., 4.1.7., 4.1.8., 4.1.9.]

6.1.4. Emissions from Crusher CR-1C and Screen SC-1C shall be controlled by use of a baghouse. Said baghouse shall be designed, installed, operated and maintained so as to achieve a minimum overall efficiency of at least 89%.
 [45CSR13-R13-2857, Condition 4.1.10.]

6.1.5. The following transfer points shall be controlled by enclosures: T1C, T2C, T4C, T7C, T1P, T3P, T1X and T3X.
 [45CSR13-R13-2857, Condition 4.1.11.]

- 6.1.6. Transfer points T3C and T6C shall be controlled by water sprays.
[45CSR13-R13-2857, Condition 4.1.12.]
- 6.1.7. Transfer point T5C shall be controlled by both an enclosure and water sprays.
[45CSR13-R13-2857, Condition 4.1.13.]
- 6.1.8. Opacity from any process source operation shall not exceed 20% except for opacity which is less than 40% for a period or periods aggregating no more than 5 minutes in any 60 minute period.
[45CSR§7-3.1, 45CSR§7-3.2, and 45CSR13-R13-2857, Condition 4.1.14.]
- 6.1.9. When processing limestone, the permittee shall comply with all applicable standards of 40 CFR Part 60, Subpart 000 including but not limited to the following:
 - a. The Crusher CR-1C and Screen SC-1C must both meet a PM limit of 0.014 grain/dscf.
 - b. The transfer points associated with belts BC-1C and BC-2C must meet an opacity limit of 7%.
[40 CFR§§60.672(a) and (b), 45CSR13-R13-2857, Condition 4.1.16., and 45CSR16]
- 6.1.10. When **not** processing limestone, the permittee shall comply with all applicable standards of 40 CFR Part 63, Subpart XXX including Sections 3.1.15., 3.1.16., and 3.1.17. of this permit and the following:

No owner or operator shall cause to be discharged into the atmosphere from any new or reconstructed piece of equipment associated with crushing and screening exhaust gases containing particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

[40 CFR§63.1652(e)(1), 45CSR13-R13-2857, Condition 4.1.17., and 45CSR34]

- 6.1.11. Particulate emissions from the listed sources shall not exceed the following:

	PM		PM ₁₀		PM _{2.5}	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Screen SC-01A ¹	25	12.5	11.82	5.92	3.72	1.86
Screen SC-01B	10	3.5	4.73	1.66	1.49	0.53
Screen BTSC-01 ¹	15	12.5	7.09	5.92	2.23	1.86
Screen RBSC-01	15	0.6	7.09	0.28	2.23	0.09
Screen RBSC-02	15	0.6	7.09	0.28	2.23	0.09
Crusher RBCR-01	15	0.6	7.09	0.28	2.23	0.09
Crusher CR-01B	10	3.5	4.73	1.66	1.49	0.53
Total	90	21.3	42.55	10.08	13.39	3.19

¹Screens SC-01A and BTSC-01 will not operate at the same time, will have a combined throughput limit and have a **combined** annual emission limit of 12.5/5.92/1.86 tpy.

[45CSR13-R13-2857, Condition 4.1.18.]

- 6.1.12. Screens SC-01A and BTSC-01 combined shall not process more than 250,000 tons per year of material. Compliance with this limit shall be based on a 12 month rolling total.
[45CSR13-R13-2857, Condition 4.1.19.]

- 6.1.13. Total combined throughput of material into the following equipment shall not exceed:

Screen SC-01B	200 tons per hour	140,000 tons per year
Screen RBSC-01	150 tons per hour	12,000 tons per year
Screen RBSC-02	150 tons per hour	12,000 tons per year
Crusher RBCR-01	150 tons per hour	12,000 tons per year
Crusher CR-01B	200 tons per hour	140,000 tons per year

Compliance with these limits shall be based on a 12 month rolling total. For the purposes of this permit a 12 month rolling total means the sum of material throughput at the end of any given month for the previous 12 months.

[45CSR13-R13-2857, Conditions 4.1.20., 4.1.21., 4.1.22., 4.1.23., 4.1.24., and 45CSR§30-5.1.c.]

- 6.1.14. Gaseous emissions from the listed sources shall not exceed the following:

Engine	SO ₂		NO _x		CO		VOC	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Rebel	0.32	0.11	4.83	1.69	1.04	0.36	0.38	0.13
Bivitec	0.32	0.11	4.83	1.69	1.04	0.36	0.38	0.13
Barge Screen	0.32	0.11	4.83	1.69	1.04	0.36	0.38	0.13
Total	0.96	0.33	14.49	5.07	3.12	1.08	1.14	0.39

[45CSR13-R13-2857, Condition 4.1.25.]

- 6.1.15. Total diesel fuel consumption from the three engines listed in Condition 6.1.14. shall not exceed 16,800 gal/yr.
[45CSR13-R13-2857, Condition 4.1.26.]

- 6.1.16. CO levels in the exhaust of the Bivitec and Barge Screening Engine shall not exceed 230 ppmvd at 15% O₂.
[40 CFR §63.6602, 45CSR13-R13-2857, Condition 4.1.28., and 45CSR34]

- 6.1.17. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment permitted by R13-2857, and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.

[45CSR§13-5.11. and 45CSR13-R13-2857, Condition 4.1.35. (Baghouses to SC-1C & CR-1C; Water sprays to BC-1C, BC-2C, OS-1C, OS-2C, CR-01B; Full enclosures on EX-1, PT-1, SC-01A, SC-01B, RBSC-01, RBSC-02, BTSC-01, CR-01B, & RBCR-01; Partial enclosures on BC1A, BC2A, BC1B, BC2B, BC1D, BC2C, OCS1, OCS2, & OCS3)]

- 6.1.18. a. An owner or operator of any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal constructed, reconstructed, or modified after April 28, 2008, must meet the requirements in Sections 6.1.18.a.1. through 3.
1. Except as provided in Section 6.1.18.a.3., the owner or operator must not cause to be discharged into the atmosphere from the affected facility any gases which exhibit 10 percent opacity or greater.
 2. The owner or operator must not cause to be discharged into the atmosphere from any mechanical vent on an affected facility gases which contain particulate matter in excess of 0.023 g/dscm (0.010 gr/dscf).
 3. Equipment used in the loading, unloading, and conveying operations of open storage piles are not subject to the opacity limitations of Section 6.1.18.a.1.
- b. The owner or operator of an open storage pile, which includes the equipment used in the loading, unloading, and conveying operations of the affected facility, constructed, reconstructed, or modified after May 27, 2009, must prepare and operate in accordance with a submitted fugitive coal dust emissions control plan that is appropriate for the site conditions as specified in Sections 6.1.18.b.1. through 3.
1. The fugitive coal dust emissions control plan must identify and describe the control measures the owner or operator will use to minimize fugitive coal dust emissions from each open storage pile.
 2. For open coal storage piles, the fugitive coal dust emissions control plan must require that one or more of the following control measures be used to minimize to the greatest extent practicable fugitive coal dust: Locating the source inside a partial enclosure, installing and operating a water spray or fogging system, applying appropriate chemical dust suppression agents on the source (when the provisions of 6.1.18.b.3. are met), use of a wind barrier, compaction, or use of a vegetative cover. The owner or operator must select, for inclusion in the fugitive coal dust emissions control plan, the control measure or measures listed in this paragraph that are most appropriate for site conditions. The plan must also explain how the measure or measures selected are applicable and appropriate for site conditions. In addition, the plan must be revised as needed to reflect any changing conditions at the source.
 3. Where appropriate chemical dust suppression agents are selected by the owner or operator as a control measure to minimize fugitive coal dust emissions, only chemical dust suppressants with Occupational Safety and Health Administration (OSHA)-compliant material safety data sheets (MSDS) are to be allowed; the MSDS must be included in the fugitive coal dust emissions control plan; and the owner or operator must consider and document in the fugitive coal dust emissions control plan the site-specific impacts associated with the use of such chemical dust suppressants.
- [40 CFR §§60.254(b) and (c)(1), (2) and (6), and 45CSR16 (Conveyors BC1A, BC2A, BC1C, BC2C, BC1D, and BC2D; Screens SC-01A, BTSC-01, RBSC-01, and RBSC-02; and Crusher CR-01B)]**
- 6.1.19. For the Rebel engine (RBSC-01, RBSC-02, and RBCR-01), owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of less than 10 liters per cylinder shall:
- a. comply with the NO_x emission standard of 6.9 g/hp-hr.
 - b. purchase diesel fuel that meets the requirements of 40 CFR §80.510(b) for non-road diesel fuel.

- c. Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions;
- d. Change only those emission-related settings that are permitted by the manufacturer; and
- e. Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you.
[40 CFR §§60.4204(a), 60.4207(b), 60.4211(a), and Table 1, 45CSR13-R13-2857, Condition 4.1.27., and 45CSR16]

6.1.20. For the Bivitech and barge screener engines (BTSC-01 and SC-01A), the permittee shall comply with the requirements in Table 2c to 40 CFR part 63, subpart ZZZZ by May 3, 2013. In addition, the permittee:

- a. must limit concentration of CO in the stationary RICE exhaust to 230 ppmvd or less at 15 percent O₂.
- b. shall be in compliance with the general requirements of 40 CFR §63.6605.
- c. shall meet the applicable general provisions specified in Table 8 of 40 CFR Part 63, Subpart ZZZZ.
- d. shall demonstrate initial compliance according to 40 CFR §63.6630 and Table 5 of 40 CFR Part 63, Subpart ZZZZ.
- e. shall comply with the continuous compliance requirements of 40 CFR §63.6640(a).
- f. shall comply with the Monitoring, Installation, Collection, Operation and Maintenance Requirements of 40 CFR §63.6625(h).

[40 CFR §§63.6595(a)(1), 63.6602, 63.6605, 63.6625(h), 63.6630, 63.6640, 63.6645(a)(1), 63.6665, Tables 2c, 5, and 8; and 45CSR34]

6.1.21. Emissions from the operations covered under permit application R13-2857B shall not exceed the following:

	PM		PM ₁₀		PM _{2.5}	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Screens	6.75	3.60	3.22	1.71	0.48	0.26
Crushers	18.00	6.40	8.57	3.05	1.29	0.46
Transfer Points	23.17	10.22	11.03	4.87	1.66	0.73
Total	47.92	20.22	22.82	9.63	3.43	1.45

[45CSR13-R13-2857, Condition 4.1.29.]

6.1.22. The total amount of material processed through Hopper H1 shall not exceed 160,000 tons per year. Compliance with this limit shall be based on a 12 month rolling total.

[45CSR13-R13-2857, Condition 4.1.30.]

- 6.1.23. Emissions from Screen CS1 and transfer point CTP1 shall be controlled by use of a baghouse (BH1-C). Said baghouse shall be designed, installed, operated and maintained so as to achieve a minimum overall efficiency of at least 99% from the screen and 90% from the transfer point.
[45CSR13-R13-2857, Condition 4.1.31.]
- 6.1.24. Emissions from Screen CS2 and transfer point CTP6 shall be controlled by use of a baghouse (BH1-B). Said baghouse shall be designed, installed, operated and maintained so as to achieve a minimum overall efficiency of at least 90% from the screen and 99% from the transfer point.
[45CSR13-R13-2857, Condition 4.1.32.]
- 6.1.25. Emissions from transfer points CTP9, CTP11 and CTP13 shall be controlled by use of a baghouse (BH1-A). Said baghouse shall be designed, installed, operated and maintained so as to achieve a minimum overall efficiency of at least 99%.
[45CSR13-R13-2857, Condition 4.1.33.]
- 6.1.26. Pressure drop across each baghouse shall be maintained within manufacturer specifications.
[45CSR13-R13-2857, Condition 4.1.34.]

6.2. Testing Requirements

- 6.2.1. The permittee shall comply with all applicable testing requirements of 40 CFR Part 60, Subpart OOO including but not limited to the following:

The owner or operator shall determine compliance with the PM standards in Section 6.1.9.a. as follows:

- a. Except as specified in 40 CFR §§60.675(e)(3) and (4), Method 5 of Appendix A3 of 40 CFR 60 or Method 17 of Appendix A6 of 40 CFR 60 shall be used to determine the particulate matter concentration. The sample volume shall be at least 1.70 dscm (60 dscf). For Method 5 (40 CFR part 60, Appendix A3), if the gas stream being sampled is at ambient temperature, the sampling probe and filter may be operated without heaters. If the gas stream is above ambient temperature, the sampling probe and filter may be operated at a temperature high enough, but no higher than 121 °C (250 °F), to prevent water condensation on the filter.
- b. Method 9 of Appendix A4 of this part and the procedures in 40 CFR § 60.11 shall be used to determine opacity.

[40CFR§§60.675(b)(1) and (b)(2), 45CSR13-R13-2857, Condition 4.2.1., and 45CSR16]

- 6.2.2. The permittee shall comply with all applicable standards of 40 CFR Part 63, Subpart XXX including but not limited to the following:

The owner or operator must conduct an initial performance test for air pollution control devices or vent stacks subject to Section 6.1.10. of this permit to demonstrate compliance with the applicable emission standards.

[40CFR§63.1656(c)(1), 45CSR13-R13-2857, Condition 4.2.2., and 45CSR34]

- 6.2.3 **Performance Tests and Other Compliance Requirements for Subpart Y - Performance Tests.** An owner or operator of each affected facility that commenced construction, reconstruction, or modification after April 28, 2008, must conduct performance tests according to the requirements of 40 CFR§60.8 and the methods identified in 40 CFR §60.257 to demonstrate compliance with the applicable emission standards in Section 6.1.18. of this permit as specified below.

For each affected facility subject to an opacity standard, an initial performance test must be performed. Thereafter, a new performance test must be conducted according to the requirements in Conditions 6.2.3.a. and b. of this section, as applicable, except as provided for in Condition 6.2.4. of this permit. Performance tests and other compliance requirements for coal truck dump operations are specified in 40 CFR §60.255(h).

- a. If any 6-minute average opacity reading in the most recent performance test exceeds half the applicable opacity limit, a new performance test must be conducted within 90 operating days of the date that the previous performance test was required to be completed.
- b. If all 6-minute average opacity readings in the most recent performance are equal to or less than half the applicable opacity limit, a new performance test must be conducted within 12 calendar months of the date that the previous performance test was required to be completed.

[40 CFR §§60.255(b), (b)(2), (b)(2)(i), and (b)(2)(ii), 45CSR13-R13-2857, Condition 4.2.3., and 45CSR16]

6.2.4 Performance Tests and Other Compliance Requirements for Subpart Y - Monitoring Visible Emissions or Digital Opacity Compliance System. As an alternative to meeting the requirements in Condition 6.2.3.

of this permit, an owner or operator of an affected facility that commenced construction, reconstruction, or modification after April 28, 2008, may elect to comply with the requirements in Condition 6.2.4.a. or b.

- a. Monitor visible emissions from each affected facility according to the requirements in paragraphs i. through iii. below.
 - i. Conduct one daily 15-second observation each operating day for each affected facility (during normal operation) when the coal preparation and processing plant is in operation. Each observation must be recorded as either visible emissions observed or no visible emissions observed. Each observer determining the presence of visible emissions must meet the training requirements specified in Section 2.3 of Method 22 of appendix A-7 of 40 CFR 60. If visible emissions are observed during any 15-second observation, the owner or operator must adjust the operation of the affected facility and demonstrate within 24 hours that no visible emissions are observed from the affected facility. If visible emissions are observed, a Method 9, of appendix A-4 of 40 CFR 60, performance test must be conducted within 45 operating days.
 - ii. Conduct monthly visual observations of all processes and control equipment. If any deficiencies are observed, the necessary maintenance must be performed as expeditiously as possible.
 - iii. Conduct a performance test using Method 9 of Appendix A-4 of 40 CFR 60 at least once every 5 calendar years for each affected facility.
- b. Prepare a written site-specific monitoring plan for a digital opacity compliance system for approval by the Administration or delegated authority. The plan shall require observations of at least one digital image every 15 seconds for 10-minute periods (during normal operation) every operating day. An approvable monitoring plan must include a demonstration that the occurrences of visible emissions are not in excess of 5 percent of the observation period. For reference purposes in preparing the monitoring plan, *see* OAQPS "Determination of Visible Emission Opacity from Stationary Sources Using Computer-Based Photographic Analysis Systems." This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality and Planning Standards; Sector Policies and Programs Division; Measurement Group (D243-02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emission Measurement Center Preliminary Methods. The

monitoring plan approved by the Administrator delegated authority shall be implemented by the owner or operator.

[40 CFR §§60.255(f),(f)(1) and (f)(2), 45CSR13-R13-2857, Condition 4.2.4., and 45CSR16]

6.2.5 For the Bivitec and barge screening engines, the permittee shall comply with the testing requirements established in 40 CFR §§63.6612, 63.6620, and Tables 4 and 5 to 40 CFR Part 63, Subpart ZZZZ.

[40 CFR §§63.6612, 63.6620 and Tables 4, and 5, 45CSR13-R13-2857, Condition 4.2.5., and 45CSR34]

6.3. Monitoring and Recordkeeping Requirements

6.3.1. **Record of Maintenance of Air Pollution Control Equipment.** For all pollution control equipment permitted by R13-2857, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures.

[45CSR13-R13-2857, Condition 4.3.2.]

6.3.2. **Record of Malfunctions of Air Pollution Control Equipment.** For all air pollution control equipment permitted by R13-2857, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:

- a. The equipment involved.
- b. Steps taken to minimize emissions during the event.
- c. The duration of the event.
- d. The estimated increase in emissions during the event.

For each such case associated with an equipment malfunction, the additional information shall also be recorded:

- e. The cause of the malfunction.
- f. Steps taken to correct the malfunction.
- g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.

[45CSR13-R13-2857, Condition 4.3.3.]

6.3.3. The permittee shall comply with all applicable monitoring and recordkeeping requirements of 40 CFR Part 60, Subpart OOO including but not limited to the following:

The owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses wet suppression to control emissions from the affected facility must perform monthly periodic inspections to check that water is flowing to discharge spray nozzles in the wet suppression system. The owner or operator must initiate corrective action within 24 hours and complete corrective action as expeditiously as practical if the owner or operator finds that water is not flowing properly during an inspection of the water spray nozzles. The owner or operator must record each inspection of the water

spray nozzles, including the date of each inspection and any corrective actions taken, in the logbook required under Section 6.4.1.

Except as specified in 40 CFR §§60.674(d) or (e), the owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses a baghouse to control emissions must conduct quarterly 30-minute visible emissions inspections using EPA Method 22 (40 CFR part 60, Appendix A7). The Method 22 (40 CFR part 60, Appendix A7) test shall be conducted while the baghouse is operating. The test is successful if no visible emissions are observed. If any visible emissions are observed, the owner or operator of the affected facility must initiate corrective action within 24 hours to return the baghouse to normal operation. The owner or operator must record each Method 22 (40 CFR part 60, Appendix A7) test, including the date and any corrective actions taken, in the logbook required under Section 6.4.1. The owner or operator of the affected facility may establish a different baghouse-specific success level for the visible emissions test (other than no visible emissions) by conducting a PM performance test according to 40 CFR § 60.675(b) simultaneously with a Method 22 (40 CFR part 60, Appendix A7) to determine what constitutes normal visible emissions from that affected facility's baghouse when it is in compliance with the applicable PM concentration limit in Table 2 of this subpart. The revised visible emissions success level must be incorporated into the permit for the affected facility.

[40CFR §§60.674(b) and (c), 45CSR13-R13-2857, Condition 4.3.4., and 45CSR16]

6.3.4 The permittee shall comply with all applicable monitoring and recordkeeping requirements of 40 CFR Part 63, Subpart XXX including Sections 3.2.1., 3.2.3., 3.4.5. and the following: for the baghouses serving the submerged arc furnaces, the metal oxygen refining process, and crushing and screening operations, the owner or operator must observe on a daily basis for the presence of any visible emissions.

[40 CFR §63.1657(a)(1), 45CSR13-R13-2857, Condition 4.3.5., and 45CSR34]

6.3.5 In order to determine compliance with Sections 6.1.2., 6.1.12., and 6.1.13. of this permit the permittee shall monitor and record the amount of material processed through each of the following equipment on a monthly basis: Screen SC-1C, Extruder EX-1, Pelletizer PT-1, Screens SC-01A and BTSC-01, Screen SC-01B, Screen RBSC-01, Screen RBSC-02, Crusher RBCR-01, and Crusher CR-01B.

[45CSR13-R13-2857, Conditions 4.3.6. through 4.3.14.]

6.3.6 In order to determine compliance with sections 6.1.14. and 6.1.15. of this permit the permittee shall monitor and record the amount of fuel oil consumed by the listed engines.

[45CSR13-R13-2857, Condition 4.3.15.]

6.3.7 If you are an owner or operator of a pre-2007 model year stationary CI internal combustion engine and must comply with the emission standards specified in Section 6.1.19. of this permit, you must demonstrate compliance according to one of the methods specified in 40 CFR §60.4211(b)(1) through (5).

Purchasing an engine certified according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.

[40 CFR §60.4211(b)(1) and 45CSR16 (*Rebel Engine*)]

6.3.8 For the Bivitec and barge screening engines, the permittee shall comply with the recordkeeping requirements of 40 CFR §§63.6655 except paragraphs (c), (e), and (f)

[40 CFR §63.6655 and 45CSR34]

- 6.3.9. In order to determine compliance with sections 6.1.22. of this permit the permittee shall monitor and record the amount of material processed through the hopper H1 on a monthly basis.
[45CSR13-R13-2857, Condition 4.3.16.]
- 6.3.10. In order to determine compliance with sections 6.1.26. of this permit the permittee shall monitor and record the pressure drop across each baghouse at least once per operating day.
[45CSR13-R13-2857, Condition 4.3.17.]

6.4. Reporting Requirements

- 6.4.1. The permittee shall comply with all applicable reporting requirements of 40 CFR Part 60 Subpart OOO.
- Owners or operators of affected facilities for which construction, modification, or reconstruction commenced on or after April 22, 2008, must record each periodic inspection required under Section 6.3.3., including dates and any corrective actions taken, in a logbook (in written or electronic format). The owner or operator must keep the logbook onsite and make hard or electronic copies (whichever is requested) of the logbook available to the Administrator upon request.
[40 CFR §60.676(b)(1), 45CSR13-R13-2857, Condition 4.4.1., and 45CSR16]
- 6.4.2. The permittee shall comply with all applicable reporting requirements of 40 CFR Part 63 Subpart XXX including Sections 3.5.13., 3.5.14., and 3.5.15. of this permit.
[45CSR13-R13-2857, Condition 4.4.2. and 45CSR34]
- 6.4.3. The permittee shall comply with all applicable reporting requirements of 40 CFR 60 Subpart Y including but not limited to the reporting requirements of 40 CFR §60.258. The permittee must submit the fugitive coal dust emissions control plan to the Administrator or delegated authority as specified in Section 6.4.3.1.i. and ii.
- i. The plan must be submitted to the Administrator or delegated authority prior to startup of the new, reconstructed, or modified affected facility, or 30 days after the effective date of this rule, whichever is later.
- ii. The plan must be revised as needed to reflect any changing conditions at the source. Such revisions must be dated and submitted to the Administrator or delegated authority before a source can operate pursuant to these revisions. The Administrator or delegated authority may also object to such revisions as specified in paragraph (c)(5) of 40 CFR §60.254.
[45CSR13-R13-2857, Condition 4.4.3., 40 CFR §60.254(c)(4) and 45CSR16]
- 6.4.4. The permittee shall comply with all applicable reporting requirements of 40 CFR 63 Subpart ZZZZ. For the Bivitec and barge screening engines, the permittee must submit all of the notifications specified in 40 CFR §§63.6640(b) and (e), §63.6645, and §63.6650.
[45CSR13-R13-2857, Condition 4.4.4., 40 CFR §§63.6640(b) and (e), §63.6645, §63.6650, and 45CSR34]

6.5. Compliance Plan

- 6.5.1. None.

7.0. R13-3217 Permit Requirements [H1-M, F1-M, BC1-M, CR1-M, BC2-M, BC3-M, S1-M]

7.1. Limitations and Standards

7.1.1. Emissions from the operations covered under permit application R13-3217 shall not exceed the following:

	PM		PM ₁₀		PM _{2.5}	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Screen	20.00	3.58	9.46	1.69	2.98	0.54
Crusher	20.00	3.58	9.46	1.69	2.98	0.54
Transfer Points	0.82	0.15	0.39	0.07	0.12	0.02
Total	40.82	7.31	19.31	3.45	6.08	1.1

[45CSR13 - R13-3217, 4.1.1.]

7.1.2. Total combined throughput of material into the Crusher CR1-M shall not exceed 400 tons per hour nor 143,000 tons per year. Compliance with this limit shall be based on a 12 month rolling total. For the purposes of this permit a 12 month rolling total means the sum of material throughput at the end of any given month for the previous 12 months.

[45CSR13 - R13-3217, 4.1.2.]

7.1.3. Total combined throughput of material into the Screen S1-M shall not exceed 400 tons per hour nor 143,000 tons per year. Compliance with this limit shall be based on a 12 month rolling total.

[45CSR13 - R13-3217, 4.1.3.]

7.1.4. Of the annual throughput limits in 7.1.2 and 7.1.3, Silicomanganese shall account for no more than 23,000 tpy. Compliance with this limit shall be based on a 12 month rolling total.

[45CSR13 - R13-3217, 4.1.4.]

7.1.5. Emissions from Crusher CR1-M shall be controlled by use of water sprays.

[45CSR13 - R13-3217, 4.1.5.]

7.1.6. Only those emission units/sources as identified in Table 1.1 - Equipment permitted under R13-3217, with the exception of any *de minimis* sources as identified under Table 45-13B of 45CSR13, are authorized by this permit. In accordance with the information filed in Permit Application R13-3217, the emission units/sources identified under Table 1.1 - Equipment Permitted under R13-3217 shall be installed, maintained, and operated so as to minimize any fugitive escape of pollutants, shall not exceed the listed maximum design capacities, and shall use the specified control devices.

[45CSR13 - R13-3217, 4.1.6.]

7.1.7. Opacity from any process source operation shall not exceed 20% except for opacity which is less than 40% for a period or periods aggregating no more than 5 minutes in any 60 minute period.

[45CSR§§7-3.1 & 3.2, 45CSR13 - R13-3217, 4.1.7.]

- 7.1.8. No person shall cause, suffer, allow or permit any manufacturing process or storage structure generating fugitive particulate matter to operate that is not equipped with a system, which may include, but not be limited to, process equipment design, control equipment design or operation and maintenance procedures, to minimize the emissions of fugitive particulate matter. To minimize means such system shall be installed, maintained and operated to ensure the lowest fugitive particulate matter emissions reasonably achievable.

[45CSR§7-5.1, 45CSR13 - R13-3217, 4.1.8.]

- 7.1.9. The permittee shall comply with all applicable standards of 40 CFR 63 Subpart XXX including but not limited to Conditions 3.1.15. through 3.1.17. of this permit and the following:

No owner or operator shall cause to be discharged into the atmosphere from any new or reconstructed piece of equipment associated with crushing and screening exhaust gases containing particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

[45CSR13 - R13-3217, 4.1.9., 40CFR§63.1652(e)(1), 45CSR34, 45CSR§30-5.1.c.]

- 7.1.10. Emissions from the screen and crusher engines shall not exceed the following (in g/kW-hr):

	NO _x	NMHC+NO _x	CO	PM	NMHC
Screen Engine	--	4.0	5.0	0.3	--
Crusher Engine	0.40	--	3.5	0.02	0.19

[40CFR§60.4204(b), 45CSR16, and 45CSR§30-5.1.c.]

- 7.1.11. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment listed in Section 1.0, Equipment permitted under R13-3217, and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.

[45CSR§13-5.11, 45CSR13 - R13- 3217, 4.1.10.]

- 7.1.12. The permittee shall use diesel fuel that meets the requirements of 40 CFR § 80.510(b).

[40CFR§60.4207(b) and 45CSR16]

7.2. Testing Requirements

- 7.2.1. The permittee shall comply with all applicable standards of 40 CFR 63 Subpart XXX including but not limited to Conditions 3.3.2. and 3.3.3. of this permit, and the following:

The owner or operator must conduct an initial performance test for air pollution control devices or vent stacks subject to 40 CFR §63.1652(e) to demonstrate compliance with the applicable emission standards.

[45CSR13 - R13- 3217, 4.2.1., 40CFR§63.1656(c)(1), 45CSR34, and 45CSR§30-5.1.c.]

- 7.2.2 For the purposes of demonstrating compliance with visible emissions limitations set forth in 7.1.7, the permittee shall:

- a. Conduct an initial Method 22 visual emission observation on all applicable process source operations to determine the compliance with the visible emission provisions. The permittee shall take a minimum of two (2) hours of visual emissions observations on all applicable process source operations.
- b. Conduct Method 22 visible emission observations on all applicable process source operations every 6 months to ensure proper operation for a minimum of ten (10) minutes per observation.
- c. In the event visible emissions are observed in excess of the limitations given under 7.1.7, the permittee shall take immediate corrective action.
[45CSR13 - R13- 3217, 4.2.2.]

7.3. Monitoring and Recordkeeping Requirements

- 7.3.1. **Record of Monitoring.** The permittee shall keep records of monitoring information that include the following:
 - a. The date, place as defined in this permit and time of sampling or measurements;
 - b. The date(s) analyses were performed;
 - c. The company or entity that performed the analyses;
 - d. The analytical techniques or methods used;
 - e. The results of the analyses; and
 - f. The operating conditions existing at the time of sampling or measurement.
[45CSR13 - R13- 3217, 4.3.1.]
- 7.3.2. **Record of Maintenance of Air Pollution Control Equipment.** For all pollution control equipment listed in Section 1.0, Equipment permitted under R13-3217, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures.
[45CSR13 - R13- 3217, 4.3.2.]
- 7.3.3. **Record of Malfunctions of Air Pollution Control Equipment.** For all air pollution control equipment listed in Section 1.0, Equipment permitted under R13-3217, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:
 - a. The equipment involved.
 - b. Steps taken to minimize emissions during the event.
 - c. The duration of the event.
 - d. The estimated increase in emissions during the event.

For each such case associated with an equipment malfunction, the additional information shall also be recorded:

- e. The cause of the malfunction.
 - f. Steps taken to correct the malfunction.
 - g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.
[45CSR13 - R13- 3217, 4.3.3.]
- 7.3.4. The permittee shall comply with all applicable monitoring and recordkeeping requirements of 40 CFR 63 Subpart XXX, including Condition 3.4.5. of this permit.
[45CSR13 - R13- 3217, 4.3.4. and 45CSR§30-5.1.c.]
- 7.3.5. In order to determine compliance with sections 7.1.1, 7.1.2, 7.1.3 and 7.1.4 of this permit the permittee shall monitor and record the amount of total material and the amount of silicomanganese processed through the Crusher CR1-M on a monthly basis.
[45CSR13 - R13- 3217, 4.3.5.]
- 7.3.6. The permittee shall maintain records of all visual emission observations pursuant to the monitoring required under 7.2.2 including any corrective action taken.
[45CSR13 - R13- 3217, 4.3.6..]
- 7.3.7. If you are an owner or operator of a stationary CI internal combustion engine equipped with a diesel particulate filter to comply with the emission standards in § 60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached.
[40 CFR §60.4209(b) and 45CSR16]
- 7.3.8. a. If you are an owner or operator and must comply with the emission standards specified in this subpart, you must do all of the following, except as permitted under paragraph (g) of this section:
- 1. Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions;
 - 2. Change only those emission-related settings that are permitted by the manufacturer; and
 - 3. Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you.
- b. If you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in Section 7.1.10., you must comply by purchasing an engine certified to the emission standards in Section 7.1.10. for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in 40 CFR § 60.4211(g).
[40 CFR §§60.4211(a), (c) and 45CSR16]

7.4. Reporting Requirements

- 7.4.1. The permittee shall comply with all applicable reporting requirements of 40 CFR 63 Subpart XXX including but not limited to the reporting requirements of Sections 3.5.13. through 3.5.15. of this permit.

[45CSR13 - R13- 3217, 4.4.1., 40CFR§63.1659, 45CSR34, and 45CSR§30-5.1.c.]

- 7.4.2. The permittee shall comply with all applicable reporting requirements of 40 CFR 60 Subpart IIII including but not limited to the following reporting requirements:

If the stationary CI internal combustion engine is equipped with a diesel particulate filter, the owner or operator must keep records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached.

[40 CFR §60.4214(c), 45CSR16]

- 7.4.3. Any deviation(s) from the allowable visible emission requirement for any emission source discovered during observations using 40CFR Part 60, Appendix A, Method 9 or 22 shall be reported in writing to the Director of the Division of Air Quality as soon as practicable, but in any case within ten (10) calendar days of the occurrence and shall include at least the following information: the results of the visible determination of opacity of emissions, the cause or suspected cause of the violation(s), and any corrective measures taken or planned.

[45CSR13 - R13- 3217, 4.4.2.]

8.0. R13-3244T Temporary Permit Requirements [F1, H1, H2, BC-1]

8.1. Limitations and Standards

8.1.1. Emissions from the operations covered under permit application R13-3244T shall not exceed the following:

	PM		PM10		PM2.5	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Furnace	0.06	0.26	0.03	0.12	0.01	0.04
Transfer Points	2.27	9.93	1.07	4.70	0.34	1.48
Total	2.33	10.19	1.10	4.82	0.35	1.52

[45CSR13 - R13-3244T, 4.1.1.]

8.1.2. Total throughput of material into the Furnace (F1) shall not exceed 3.75 tons per hour nor 32,850 tons per year. Compliance with this limit shall be based on a 12 month rolling total. For the purposes of this permit a 12 month rolling total means the sum of material throughput at the end of any given month for the previous 12 months.

[45CSR13 - R13-3244T, 4.1.2.]

8.1.3. Emissions from Furnace F1 shall be controlled by use of a baghouse.

[45CSR13 - R13-3244T, 4.1.3.]

8.1.4. Emissions from all transfer points shall be controlled by use of a partial enclosure.

[45CSR13 - R13-3244T, 4.1.4.]

8.1.5. Opacity from any process source operation shall not exceed 20% except for opacity which is less than 40% for a period or periods aggregating no more than 5 minutes in any 60 minute period.

[45CSR§7-3.1 & 45CSR§7-3.2., 45CSR13 - R13-3244T, 4.1.5.]

8.1.6. No person shall cause, suffer, allow, or permit particulate matter to be vented into the open air from any type source operation or duplicate source operation, or from all air pollution control equipment installed on any type source operation or duplicate source operation in excess of the quantity specified under the appropriate source operation type in Table 45-7A found at the end of this rule.

[45CSR§7-4.1., 45CSR13 - R13-3244T, 4.1.6.]

8.1.7. No person shall cause, suffer, allow or permit any manufacturing process or storage structure generating fugitive particulate matter to operate that is not equipped with a system, which may include, but not be limited to, process equipment design, control equipment design or operation and maintenance procedures, to minimize the emissions of fugitive particulate matter. To minimize means such system shall be installed, maintained and operated to ensure the lowest fugitive particulate matter emissions reasonably achievable.

[45CSR§7-5.1., 45CSR13 - R13-3244T, 4.1.7.]

8.1.8. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment listed in Section 1.1., Equipment permitted under R13-3244T, and associated monitoring equipment in a manner consistent with safety and good

air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.

[45CSR§13-5.11., 45CSR13 - R13-3244T, 4.1.8.]

8.2. Testing Requirements

- 8.2.1. For the purposes of demonstrating compliance with visible emissions limitations set forth in 8.1.5, the permittee shall:
- a. Conduct an initial Method 22 visual emission observation on all applicable process source operations to determine the compliance with the visible emission provisions. The permittee shall take a minimum of two (2) hours of visual emissions observations on all applicable process source operations.
 - b. Conduct Method 22 visible emission observations on all applicable process source operations every 6 months to ensure proper operation for a minimum of ten (10) minutes per observation.
 - c. In the event visible emissions are observed in excess of the limitations given under 8.1.5, the permittee shall take immediate corrective action.

[45CSR13 - R13-3244T, 4.2.1.]

8.3. Monitoring and Recordkeeping Requirements

- 8.3.1. **Record of Monitoring.** The permittee shall keep records of monitoring information that include the following:
- a. The date, place as defined in this permit and time of sampling or measurements;
 - b. The date(s) analyses were performed;
 - c. The company or entity that performed the analyses;
 - d. The analytical techniques or methods used;
 - e. The results of the analyses; and
 - f. The operating conditions existing at the time of sampling or measurement.

[45CSR13 - R13-3244T, 4.3.1.]

- 8.3.2. **Record of Maintenance of Air Pollution Control Equipment.** For all pollution control equipment listed in Section 1.1, Equipment permitted under R13-3244T, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures.

[45CSR13 - R13-3244T, 4.3.2.]

- 8.3.3. **Record of Malfunctions of Air Pollution Control Equipment.** For all air pollution control equipment listed in Section 1.1, Equipment permitted under R13-3244T, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:

- a. The equipment involved.
- b. Steps taken to minimize emissions during the event.
- c. The duration of the event.
- d. The estimated increase in emissions during the event.

For each such case associated with an equipment malfunction, the additional information shall also be recorded:

- e. The cause of the malfunction.
 - f. Steps taken to correct the malfunction.
 - g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.
- 8.3.4. In order to determine compliance with sections 8.1.1 and 8.1.2 of this permit the permittee shall monitor and record the amount of total material processed through the furnace F1 on a monthly basis.
[45CSR13 - R13-3244T, 4.3.4.]
- 8.3.5 The permittee shall maintain records of all visual emission observations pursuant to the monitoring required under 8.2.1 including any corrective action taken.
[45CSR13 - R13-3244T, 4.3.5.]

8.4. Reporting Requirements

- 8.4.1. Any deviation(s) from the allowable visible emission requirement for any emission source discovered during observations using 40CFR Part 60, Appendix A, Method 9 or 22 shall be reported in writing to the Director of the Division of Air Quality as soon as practicable, but in any case within ten (10) calendar days of the occurrence and shall include at least the following information: the results of the visible determination of opacity of emissions, the cause or suspected cause of the violation(s), and any corrective measures taken or planned.
[45CSR13 - R13-3244T, 4.4.1.]

APPENDIX A
Inspection and Maintenance Program

Felman Production, Inc.
Emission Control System ("ECS")
Inspection and Maintenance Program

Item	Inspection Frequency	Condition	Comments
I. <u>Submerged Arc Furnaces ("SAF")</u>			
a) Furnace Doors	1/week		
b) Furnace Hoods			
i) Electrode Fume Seals	1/day		
ii) Mix Chutes	1/day		
iii) ECS "Draw"	1/day		
c) Tapping Hoods			
i) Alignment	1/day		
ii) Hydraulic Operation	1/month		
iii) Fan & Damper Operation	1/month		
iv) ECS "Draw"	1/week		
II. <u>ECS Ductwork</u>			
a) Flexible Duct Seals	1/week		
b) Stack Cap Seals	1/week		
c) Expansion Joints & Ductwork	1/Q		
d) Multiclones	1/Q		
e) Heat Exchangers	1/Q		
f) Tempering Air Dampers	1/month		
III. <u>Pouring Hoods</u>			
a) Alignment	1/day		
b) Hydraulic Operation	1/month		
c) Fan & Damper Operation	1/month		
d) ECS "Draw"	1/week		
IV. <u>Baghouses (2, 5, 7)</u>			
a) Filter Bags & their attachments	1/day		
b) Compartment Hoppers			
i) Door Seals	1/day		
ii) Steel Plating	1/week		

Item	Inspection Frequency	Condition	Comments
iii) Screw Conveyors & their drives	1/week		
c) Primary Fan & Motors			
i) Bearings (Lubrication & Vibration)	1/day		
ii) Pre-Spin Dampers	1/week		
iii) Flexible Connections to Duct	1/week		
d) Instrumentation			
i) Magnahelic Gages and/or Manometers	1/shift		
ii) Vibration Monitors	1/month		
iii) Damper Controller	1/month		
iv) Temperature Monitoring Inst.	1/month		
v) Pneumatic Damper Operators & Solenoids	1/month		
vi) Annunciation	1/week		
e) Bullseye Dampers			
i) Isolation Damper Seals	1/week		
ii) Reverse Air Damper Seals	1/week		
f) Miscellaneous Steelwork			
i) Baffleplates	1/week		
ii) Dirty Air Ductwork	1/day		
g) Bag Cleaning Apparatus			
i) Reverse Air Fan (2,5,7,)	1/week		
h) Fume Removal Systems			
i) Rotary Gate Valves	1/week		
ii) Vibrators	1/week		
iii) Pneumatic Blowers	1/month		
iv) Pneumatic Piping	1/Q		
v) Fume Storage Silos	1/week		
vi) Pelletizer	1/day		
i) Miscellaneous			
i) General Clean Up	1/day		
ii) Compressed Air System	1/Q		

APPENDIX B - Rule 10 Monitoring Plan

Electric Arc Furnace SO₂ Monitoring Plan

45CSR10 Control Limits of Sulfur Dioxide from Furnaces

Felman Production, Inc. (Felman) operates electric arc furnaces (EAF) for the production of ferroalloy metal. Sulfur dioxide emissions are generated in the EAFs Nos. 2, 5, and 7 from the use of sulfur bearing raw materials. Initial emission testing for SO₂ will be conducted as required. An EPA study related to emission testing from five EAFs stated no significant SO₂ concentrations were found in the exhaust gas. The SO₂ loss from furnaces equipped with air pollution control devices did not exceed 7 PPH. SO₂ concentrations ranged from 1 to 17 ppm. EPA stated that for this reason, SO₂ is rarely included in an emission test program (EPA-450/2-74-008, EPA-450/2-74-018A, and EPA-450/3-80-041). Based on a similar process, SO₂ testing data from West Virginia Alloy, Inc. on EAF No. 15 in 1998 that showed the average SO₂ concentration was 18 ppm. The calculated worst case SO₂ concentration for Felman is 48 ppm, which is well within the 2,000-ppm_v requirement of 45CSR§10-4.1. This is based on the following:

- Raw material sulfur content ranges from 0.6 to 2.0 percent
- Maximum design exhaust flow rate
- Worst case coal/coke usage rate (FeSi production)
- Final product sulfur analysis (SiMn production)
- Slag sulfur analysis (SiMn production)
- Baghouse dust/particulate sulfur analysis (SiMn production)

Applicable Standard:

No person shall cause, suffer, allow, or permit the emission into the open air from any source operation an in-stack sulfur dioxide concentration exceeding 2,000 parts per million by volume from existing source operations. 45 CSR 10§4.

Initial Compliance Testing:

45 CSR 10A §5.2.a. provides for an initial compliance test conducted in accordance with 40 CFR Part 60, Appendix A, Method 6 or other equivalent EPA testing method, and the results of this initial testing will be utilized to demonstrate compliance with this monitoring plan. Initial testing per Felman's Consent Order will be performed as soon as possible. As stated above it is expected that the SO₂ concentration will be only a fraction of the 45 CSR 10 §4 regulatory standard of 2,000 ppm. Based on these results Felman Production will be requesting an exemption from any further SO₂ testing.

Monitoring:

CEMS are required only if there is both the potential to emit 100 tons per year (TPY) of sulfur dioxide and the potential to emit sulfur dioxide at a rate greater than or equal to 90% of the applicable emission standard, which is 2,000 ppm. 45 CSR 10A, §6.2.b. Therefore, Felman does not anticipate the need for the installation of stack gas monitoring devices. Coal or coke will be the only raw material utilized in the ferroalloy furnaces with any significant sulfur content. The average sulfur content of these materials is expected not to exceed 2.0%. Prior to stack testing Felman will monitor the following:

- Sulfur content of each coal/coke shipment received.
- Sulfur content of coal/coke consumed per furnace.
- Daily coal/coke usage per furnace.
- Daily operating hours per furnace.

Felman will maintain historical supplier sulfur content data for a period of five (5) years. If the coal/coke supplier fails to provide certificates of analysis, the following procedures will be utilized:

- a. The owner or operator of a ferroalloy furnace shall meet the following minimum sampling requirements:
 1. The sample acquisition point shall be at a location where representative samples of the total raw material flow to the furnace may be obtained.
 2. The sulfur bearing material shall be sampled at least once per day
 3. Minimum sample size shall be five hundred (500) grams.
 4. Samples shall be composited and analyzed at the end of each calendar month
- b. The samples shall be prepared for analysis in accordance with procedures specified in ASTM D2013-86. "Standard Method of Preparing Coal Samples for Analysis."

- c. The sulfur content of the samples will be determined in accordance with procedures specified in ASTM D3177-84, "Standard Test Methods for Total Sulfur in the Analysis Sample of Coal and Coke", or ASTM D4239-85, "Standard Test Methods for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods."

Based on the worst-case sulfur content, the theoretical SO₂ concentration is 48 ppm (see attached calculation). Even at this worst-case sulfur content, compliance with the 2,000-ppm stack concentration limit is easily achieved. It is expected that stack testing will demonstrate that the SO₂ is only a fraction of the allowable limit. Based upon this margin of compliance with the 2,000-ppm limit, Felman does not believe that on-going monitoring of the sulfur content will be necessary. Felman therefore requests that these requirements be waived once the initial SO₂ stack test demonstrates compliance with this standard. Felman realizes this is contingent upon no operational or raw material changes.

An approved monitoring plan shall contain a response plan to be implemented during excursions (45 CSR 10A, 6.4.g.). As stated above, the worst -case sulfur content of 2.0% equates to an SO₂ concentration of 48 ppm. Therefore, it is not possible to exceed the 2,000-ppm SO₂ limit and no response plan will be required.

Reporting:

7.2.b. Non-CEMS Based Monitoring.

Each owner or operator employing monitoring pursuant to subsection 6.4 shall submit a "Monitoring Summary Report" and an "Excursion and Monitoring Plan Performance Report" to the Secretary on a quarterly basis, to the extent required under paragraphs 7.2.b.1 through 7.2.b.4; the Secretary may, on a case-by-case basis, require more frequent reporting if the Secretary deems it necessary to accurately assess the compliance status of the fuel burning unit(s). All reports shall be postmarked by the thirtieth (30th) day following the end of each calendar quarter. The Monitoring Summary Report shall contain the information and be in a format approved by the Secretary.

Since it is not possible that the 45 CSR 10 §4 standard of 2,000 ppm can be violated by the electric arc furnaces, it is requested the reporting requirement be waived for these units.

The owner or operator of a ferroalloy furnace shall calculate the SO₂ emissions based on operating hours, daily coal/coke usage, and the results of the analysis for sulfur according to the following equations:

EQUATIONS	
Mass Emission	
SO ₂ (lb/hr) = (Q _f / OpHrs) x (C _i / 100) x (64 / 32) x 2000	
Where: SO ₂ (lb/hr) = hourly mass sulfur dioxide emissions, lb/hr Q _f = coal/coke usage, tons/day OpHrs = Furnace operating hours, hr/day C _i = sulfur concentration of pollutant, percent 64 = Molecular weight of sulfur dioxide, lb/lb-mole 32 = Molecular weight of sulfur, lb/lb-mole	SiMn Sulfur Breakdown as of 2/20/07 Sulfur in slag = 53% Sulfur in final product = 1% Sulfur to baghouse = 46%
Emission Concentration	
SO ₂ (ppmv) = SO ₂ (lb/hr) x (385/64) x (1/Q _s) x (1/60) x 10 ⁶	
Where: SO ₂ (ppmv) = Sulfur dioxide concentration by volume SO ₂ (lb/hr) = Sulfur dioxide hourly mass emission 385 = Molar volume, scf/lb-mole (ideal gas law) 64 = Molecular weight of sulfur dioxide, lb/lb-mole Q _s = Exhaust fan volumetric exhaust flow rate, scfm 60 = Minutes per hour	Design Exhaust Flow Rates Furnace #2 = 450,000 acfm @ 500°F Furnace #5 = 250,000 acfm @ 500°F Furnace #7 = 350,000 acfm @ 550°F

SULFUR CALCULATIONS: MASS BALANCE / MATERIAL ANALYSIS

Mass Emission

SO₂ (lb/hr) = (Q_f / OpHrs) x (C_i / 100) x (64 / 32) x 2000
 SO₂ (lb/hr) = hourly mass sulfur dioxide emissions, lb/hr

Concentration

SO₂ (ppmv) = SO₂ (lb/hr) x (385/64) x (1/Q_s) x (1/60) x 10⁶
 SO₂ (ppmv) = Sulfur dioxide concentration by volume

Q_f = coal/coke usage, tons/day
 OpHrs = Furnace operating hours, hr/day
 C_i = sulfur concentration of pollutant, percent
 64 = Molecular weight of sulfur dioxide, lb/lb-mole
 32 = Molecular weight of sulfur, lb/lb-mole

385 = Molar volume, scf/lb-mole (ideal gas law)
 64 = Molecular weight of sulfur dioxide, lb/lb-mole
 Q_s = Exhaust fan volumetric exhaust flow rate, scfm
 60 = Minutes per hour

	<u>Furnace #2</u>	<u>Furnace #5</u>	<u>Furnace #7</u>	
OpHrs	24	24	24	hrs/day
Q_f	77	42	42	tons/day maximum projected coal/coke usage
	3.2	1.8	1.8	TPH*** based on FeSi Alloy
	6417	3500	3500	lb/hr
C_i	2	2	2	% maximum sulfur (coal/coke) -as received basis
MW_p	64	64	64	lb/lb-mole sulfur dioxide
EW_f	32	32	32	lb/lb-mole sulfur
Potential Furnace SO₂ Manufactured	256.67	140	140	lb/hr sulfur dioxide
Portion of Sulfur in Slag/ Waste*	53%	53%	53%	based on SiMn Alloy
Portion of Sulfur in Final Product	1%	1%	1%	based on SiMn Alloy
Portion of Sulfur in Exhaust Gas	46%	46%	46%	based on SiMn Alloy
SO₂ Emitted to Baghouse**	118.1	64.4	64.4	lb/hr
	517.1	282.1	282.1	TPY
Exhaust Temperature	500	500	550	°F
Exhaust Pressure	29.6	29.6	29.6	inHg@ 670 ft. elev. above sea level & +5 static pressure
Design Exhaust Flow Rate	450000	250000	350000	ACFM
	244999	136111	181121	SCFM
SO₂ Emitted to Baghouse**	48	47	36	ppmv

Notes:

- * The raw material mix includes lime/limestone, which adsorbs sulfur released by the coal/coke. This is reflected by the portion of sulfur in the slag.
- ** SO₂ emitted to the baghouse. It is expected that some of the sulfur is converted to particulate sulfates which would be collected by the baghouse and reduce the sulfur emissions further. An EPA study stated no significant SO₂ concentrations were found in the exhaust gas for five furnaces tested. The SO₂ loss from furnaces equipped with control devices did not exceed 7 PPH. SO₂ concentrations ranged from 1 to 17 ppm. EPA stated that for this reason, SO₂ is rarely included in an emission test program (EPA-450/2-74-008, EPA-450/2-74-018A, and EPA-450/3-80-041).
- *** Metric tons

Felman Production, Inc. New Haven Plant	Month / Year
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Furnace # _____

DAILY RECORD SHEET

Day	Time		Hours Operated	Coal/Coke Usage (tons)	Initials	Comments and/or Excursion Incidents (ATTACH ADDITIONAL INFO. AS NEEDED)
	Startup	Shutdown				
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						
Totals						

This Record must be kept for 5 years from the above ending date.

**Felman Production, Inc.
New Haven Plant**

Furnace # _____
Year _____

SO₂ MONITORING SUMMARY REPORT

Time Period	Hours Operated	Coal/Coke Usage (Tons)	Coal/Coke Analysis Sulfur (A/R)	Comments and/or Excursion Incidents
1st Quarter				
January				
February				
March				
Quarterly Totals				
2nd Quarter				
April				
May				
June				
Quarterly Totals				
3rd Quarter				
July				
August				
September				
Quarterly Totals				
4th Quarter				
October				
November				
December				
Quarterly Totals				
Grand Total				

This Record must be kept for 5 years from the above ending date.

APPENDIX C-SCHEDULE FOR COMPLIANCE