

Meridian Brick/Michigan Plant

Abatement and Equipment Monitoring Program

Preventive Maintenance Program

Inspection Logsheets

Abatement And Equipment Monitoring Program
Meridian Brick
Corunna, Michigan

Equipment	Operating Variables Monitored	Normal Operating Range	Method of Monitoring	Frequency of Monitoring	Person Monitoring	Corrective Procedure of Operational Change in the Event of a Malfunction or Failure to Achieve Compliance
Volumetric Feeder Controller	Lime Injection Volume	Up to 2.5 times SO ₂ Stoichiometry	Control Panel	Continuous (Chart Recorder)	Kiln Operator	Repairs will be performed as soon as possible. If the malfunction which results in emissions that exceed the emission limitations is not repaired within two hours, see Note 3
Baghouse	Exhaust Air	Up to 20%	Visual	Daily	Kiln Operator	* If the opacity reaches 10% a bag change will be scheduled at that time for the affected baghouse.
	Inlet Temperature	15 Degrees below bag degradation.	Guage Hi-Lo Alarm	Daily	Kiln Operator	* If the malfunction includes the entire baghouse, the air cleaning system will be shutdown until repairs are performed on the baghouse. A manual counterweighted pressure relief damper will be opened at the kiln to release the hot exhaust gases.
	Differential Pressure	6" W.G. Max.	Guage	Daily	Kiln Operator	* In the event of a high pressure drop across the baghouse or high inlet temperature, a manual counterweighted pressure relief damper will be opened at the kiln to release the hot exhaust gases.
						* If the malfunction which results in emissions that exceed the emission limitations is not repaired within two hours, See Note 3
System Blower	Vibration	N/A	Visual	Daily	Kiln Operator	* In the event of a malfunction, the air cleaning system will be shut down. Repairs will be performed as soon as possible. * If the malfunction which results in emissions that exceed the emission limitations is not repaired within two hours, See Note 3
Cooling Tower	Build up on floor of tower.	N/A	Visual	Weekly	Kiln Operator	* If the malfunction which results in emissions that exceed the emission limitations is not repaired within two hours, See Note 3

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Corunna, Michigan

Equipment	Operating Variables Monitored	Normal Operating Range	Method of Monitoring	Frequency of Monitoring	Person Monitoring	Corrective Procedure of Operational Change in the Event of a Malfunction or Failure to Achieve Compliance
Lime Feed System	Eductor Feed	N/A	Visual	Daily	Kiln Operator	* In the event of a malfunction, the lime feed system will be shut down. Repairs will be performed as soon as possible. * If the malfunction which results in emissions that exceed the emission limitations is not repaired within two hours, see Note 3
	Blower Filter	N/A	Visual	Daily	Kiln Operator	
	Lime Injection Point in Duct	N/A	Visual at Eductor	Daily	Kiln Operator	

Notes:

- All repairs must be logged, whether they are associated with the daily/weekly/bi-annual or semi-annual inspections. This includes repairs or other activities necessary for any of the equipment to be logged as "okay".
- A repair logsheet will be maintained. The logsheet will include: Equipment ID, Date, Time Malfunction Detected, Time Repair Completed, Repair Procedures (see attached Repair Logsheets)
- The person monitoring the equipment will notify his or her supervisor promptly of any abnormal operating variables that cannot be corrected through normal adjustments and procedures.
- Pursuant to the Michigan Air Pollution Control Commission Rules, Part 9, Rule 912, emissions that exceed the applicable emission limitations due to abnormal conditions in, or breakdown of, process or control equipment which continue for MORE THAN TWO HOURS will be reported as soon as possible to the Commission or the Air Quality Division. Within ten days of this occurrence, a detailed report will be submitted to the Commission. The report will include the probable causes, duration of violation, remedial action taken, and the steps that are being undertaken to prevent a recurrence. The preventive steps will become a part of the Malfunction Abatement Plan.

Preventive Maintenance Program

Meridian Brick Corunna, Michigan

	Items Inspected	Frequency	Responsibility	Replacement Parts Kept In Inventory
Storage Silo	Compartment Cleanliness and Condition	Daily	Kiln Operator	
Bin Activator	Air Vibrators	Daily	Kiln Operator	air vibrator
	Vibrating Bin Activator	Quarterly	Maintenance	adapter sleeve
	Vibrator Motor	Semi-annual	Electrician	
Volumetric Feeder	Cleanliness and Operation	Quarterly	Maintenance	auger screw bearings
	Feeder Motor	Semi-annual	Electrician	teflon packing seals
	Feeder Drive	Quarterly	Maintenance	
	Feeder Controller	Semi-annual	Electrician	
Pneumatic Conveying System	Blower Filter	Weekly	Maintenance	blower filter
	Blower	Daily	Kiln Operator	
	Blower Motor	Daily	Kiln Operator	
	Lime feed at duct insertion point	Weekly	Maintenance	

Preventive Maintenance Program

Meridian Brick Corunna, Michigan

	Items Inspected	Frequency	Responsibility	Replacement Parts Kept In Inventory
Baghouse	Compartment Cleanliness and Condition	Bi-Annual	Maintenance	bags, fan belts, pulse control timer, differential pressure indicator, pilot valves, diaphragm valve, repair kits, fan shaft bearings, one (1) bare rotary airlock, filters
	Bag Conditions	Bi-Annual	Maintenance	
	Housing Hopper Leaks	Quarterly	Maintenance	
	Pulse Jet Cleaning Mechanism	Quarterly	Maintenance	
	Controls	Semi-annual	Electrician	
	Rotary Airlock	Daily	Kiln Operator	
	Blower Filter	Weekly	Maintenance	
	Blower	Daily	Kiln Operator	
	Blower Motor	Daily	Kiln Operator	
	Exhaust Fan Bearings	Weekly	Maintenance	
Cooling Tower	Floor	Weekly	Kiln Operator	Pump, Nozzle, Motor

Preventive Maintenance Program

Meridian Brick Corunna, Michigan

	Items Inspected	Frequency	Responsibility	Replacement Parts Kept In Inventory
Controls	Control Panel	Semi-annual	Electrician	push buttons, selector switches,
	Control Transformer	Semi-annual	Electrician	relays, charts, pens,
	Baghouse Hi-Lo Temperature Alarm	Semi-annual	Electrician	thermocouples, differential
	Baghouse Thermocouple	Semi-annual	Electrician	pressure guage, flow controller,
	Baghouse Differential Pressure Gauge	Semi-annual	Electrician	fuses, high pressure alarm, hi-lo
	Virgin Lime and Spent Lime Flow Controller	Semi-annual	Electrician	temperature alarm
	Chart Recorder	Semi-annual	Electrician	
Insulation Integrity		Daily	Kiln Operator	Insulation Material
Piping Leaks		Daily	Kiln Operator	Piping

Notes:

1. Inspection procedures will be based on vendors recommendations.
2. Equipment inspection and amintenance date, equipment name, equipment identification number, repairs resulting from inspection will be recorded in a logsheet. (See attached Logsheets)

**Daily
Inspection Logsheet
Meridian Brick
Corunna, Michigan**

Equipment Name	Items Inspected	Equipment I.D.	Inspection Date	Condition	Comment (see note 1)	Initials
Storage Silo	Compartment Cleanliness & Condition					
	Housing and Hopper Leak					
	Eductor Feed					
	Blower Filter					
	Lime Injection Point in Duct					
Bin Activator	Air Vibrators					
Baghouse	Exhaust Air					
	Inlet Temperature					
	Differential Pressure					
	Rotary Airlock					
	Blower Motor					
Piping Leaks						
Insulation Integrity						

Notes:

1. If repairs other other activities are required, fill out the repair logsheet and reference it in the comment column (above).

**Weekly
Inspection Logsheet
Meridian Brick
Corunna, Michigan**

Equipment Name	Items Inspected	Equipment I.D.	Inspection Date	Condition	Comment (see note 1)	Initials
Pneumatic Conveying System	Blower Filter					
	Lime Feed at Duct Insertion Point					
Baghouse	Blower Filter					
	Exhaust Fan Bearings					
Cooling Tower	Build up on Floor					

Notes:

1. If repairs or other activities are required, fill out the repair logsheet and reference it in the comment column (above).

**Quarterly
Inspection Logsheet
Meridian Brick
Corunna, Michigan**

Equipment Name	Items Inspected	Equipment I.D.	Inspection Date	Condition	Comment (see note 1)	Initials
Bin Activator	Vibrating Bin Activator					
Volumetric Feeder	Cleanliness & Operation					
	Feeder Drive					
Baghouse	Housing Hopper and Leaks					
	Pulse Jet Cleaning Mechanism					

Notes:

1. If repairs or other activities are required, fill out the repair logsheet and reference it in the comment column (above).

**Semi-Annual
Inspection Logsheet
Meridian Brick
Corunna, Michigan**

Equipment Name	Items Inspected	Equipment I.D.	Inspection Date	Condition	Comment (see note 1)	Initials
Bin Activator	Vibrator					
Volumetric Feeder	Feeder Motor					
	Feeder Controller					
Baghouse						
Controls	Control Panel					
	Control Transformer					
	Baghouse Hi-Lo Temp. Alarm					
	Baghouse Thermocouple					
	Baghouse Diff. Pressure Gauge					
	Lime Flow Controller					
	Chart Recorder					
Other	Compartment Cleanliness & Condition					
	Bag Condition					
	Check Couplings on Purge Tubes for Tightness					
Cooling Tower	Overall performance					

Notes: 1. If repairs or other activities are required, fill out the repair logsheet and reference it in the comment column (above).

**Vacuum Collector-Dehacker
Semi-Annual Maintenance Check/Repairs
Meridian Brick
Corunna, Michigan**

Equipment Name	Items Inspected	Date	Comments/Repairs	Initials
Tank	Side Wall Integrity			
	Condition of Duct Pipes			
	Door(s) Operation			
Secondary Seperator	Side Wall Integrity			
	Condition of Bags			
	Condition of Hangers			
	Condition of Shaker & Connecting Links			
	Door(s) Operation			

Additional Comments:

**Baghouse Collector-90 Pug Mill
Semi-Annual Maintenance Check/Repairs
Hanson Brick
Corunna, Michigan**

Equipment Name	Items Inspected	Date	Comments/Repairs	Initials
Fan	Motor			
Baghouse	Condition of Bags			
	Condition of Hangers			
	Side Wall Integrity			
	Condition of Ductwork			
Drum Cover Assembly	Condition of Cone(s)			
	Condition of Flexible Hose(s)			
	Condition of Hose Clamp(s)			

Additional Comments: