MonPower™
A FirstEnergy Company

CERTIFIED MAIL
7012 3460 0002 0162 8528

February 3, 2016

Mr. William F. Durham, Director
Division of Air Quality
West Virginia Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304-2345

Re: Monongahela Power Company
Fort Martin Power Station
Class II Administrative Update: #R13-2711A
Title V Minor Modification: #R30-06100001-2015
Installation of a Refined Coal Facility

Dear Mr. Durham:

Enclosed please find one hard copy and two electronic copies of an Application for NSR Permit (Class II Administrative Update) and Title V Permit Revision (Minor Modification) for the planned installation of a Refined Coal System at Fort Martin Power Station located in Maidsville, West Virginia. The refined coal facility will be located in an area adjacent to Fort Martin's existing cooling tower as shown in the enclosed application diagrams. As described in Title 26, Section 45 of the United States Code, the refined coal to be produced by this facility is designed to meet the Internal Revenue Service criteria for an environmentally-beneficial project, and thus qualify for a tax credit. Similar refined coal systems are currently being utilized at other generating stations around the United States, including stations in Pennsylvania, West Virginia and Ohio.

The refined coal facility will consist of a mixer and the associated application equipment needed to apply the sorbents to the coal supply from the existing crusher house conveyors. The installed equipment will also consist of storage silos, storage tanks, conveyors and pumps. As detailed in the enclosed application, the conveyors will be fully-enclosed, as well as two of the storage tanks. The silos will be equipped with bin vents to significantly reduce potential particulate emissions to de minimus levels. As a result, the only emissions increase of any pollutant will be the particulate emissions resulting from the increased delivery truck traffic on the existing paved facility roadways. These estimated maximum potential emissions increases are well below 6 pounds/hour and 10 tons/year; consequently, this installation meets the criteria for a minor modification and Class II Administrative Update under 45 CSR 13. Therefore, it is requested that this administrative update be incorporated into existing permit #R13-2711A, issued for the material handling of Gypsum and Limestone on November 14, 2007. The Affidavit of Publication for the required Legal Ad will be sent under separate cover letter once it is received.

If you have any questions or need additional information, please contact me at telephone (724)838-6057 or via email at tdowns@firstenergycorp.com.

Sincerely,

Tonia A. Downs

Tonia A. Downs
Engineer V, Air Permitting and Performance

L-1730.20

Monongahela Power Company
Fort Martin Power Station
Maidsville, West Virginia

Class II Administrative Update and Title V Minor Modification Application

Installation of a Refined Coal Facility

February 3, 2016

Table of Contents

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF AIR QUALITY

601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.dep.wv.gov/daq

APPLICATION FOR NSR PERMIT AND TITLE V PERMIT REVISION (OPTIONAL)

PLEASE CHECK ALL THAT APPLY TO **NSR (45CSR13)** (IF KNOWN):

☐ **CONSTRUCTION** ☐ **MODIFICATION** ☐ **RELOCATION**
☐ **CLASS I ADMINISTRATIVE UPDATE** ☐ **TEMPORARY**
☒ **CLASS II ADMINISTRATIVE UPDATE** ☐ **AFTER-THE-FACT**

PLEASE CHECK TYPE OF **45CSR30 (TITLE V)** REVISION (IF ANY):

☐ **ADMINISTRATIVE AMENDMENT** ☒ **MINOR MODIFICATION**
☐ **SIGNIFICANT MODIFICATION**

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS **ATTACHMENT S** TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant *(as registered with the WV Secretary of State's Office):*
Monongahela Power Company

2. Federal Employer ID No. ***(FEIN):***
23302048 1

3. Name of facility *(if different from above):*
Fort Martin Power Station

4. The applicant is the:
☐ **OWNER** ☐ **OPERATOR** ☒ **BOTH**

5A. Applicant's mailing address:
800 Cabin Hill Drive
Greensburg, PA 15601

5B. Facility's present physical address:
Fort Martin Road
Maidsville, WV 26541-0247

6. **West Virginia Business Registration.** Is the applicant a resident of the State of West Virginia? ☒ **YES** ☐ **NO**
- If **YES,** provide a copy of the **Certificate of Incorporation/Organization/Limited Partnership** (one page) including any name change amendments or other Business Registration Certificate as **Attachment A.**
- If **NO,** provide a copy of the **Certificate of Authority/Authority of L.L.C./Registration** (one page) including any name change amendments or other Business Certificate as **Attachment A.**

7. If applicant is a subsidiary corporation, please provide the name of parent corporation: FirstEnergy Corp

8. Does the applicant own, lease, have an option to buy or otherwise have control of the *proposed site?* ☒ **YES** ☐ **NO**
- If **YES,** please explain: **Applicant is owner/operator of the Title V facility.**
- If **NO,** you are not eligible for a permit for this source.

9. Type of plant or facility (stationary source) to be **constructed, modified, relocated, administratively updated** or **temporarily permitted** (e.g., coal preparation plant, primary crusher, etc.)**: A Refined Coal System is to be installed for the application of sorbent chemicals to coal for pollution control.**

10. North American Industry Classification System **(NAICS)** code for the facility:
221112

11A. DAQ Plant ID No. (for existing facilities only):
0 61 – 0 0 0 0 1

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
Title V R30-06100001-2015, R13-2711A

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

12A.

- For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- For **Construction** or **Relocation permits,** please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP** as **Attachment B**.

State Route 119 South from Uniontown to Point Marion, then take State Route 88 North to left on Fort Martin Road.

12B. New site address (if applicable):	12C. Nearest city or town:	12D. County:
N/A	**Maidsville, WV**	**Monongalia**
12.E. UTM Northing (KM): **4396.180**	12F. UTM Easting (KM): **591.920**	12G. UTM Zone: **30**

13. Briefly describe the proposed change(s) at the facility:
A Refined Coal System is to be installed for the application of sorbent chemicals to coal for pollution control. Sorbents will be delivered by truck to storage silos and a storage tank, then mixed and applied to the coal at conveyors. See Attachment G for detailed process description.

14A. Provide the date of anticipated installation or change: **3/01/2016** – If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: / /	14B. Date of anticipated Start-Up if a permit is granted: **6/15/2016**

14C. Provide a **Schedule** of the planned **Installation** of/**Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:
Hours Per Day **24** Days Per Week **7** Weeks Per Year **52 (truck deliveries 8 hours/7 days/52 weeks)**

16. Is demolition or physical renovation at an existing facility involved? ☒ **YES** ☐ **NO**

17. **Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see www.epa.gov/ceppo), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18. **Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process *(if known)*. A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance *(if known)*. Provide this information as **Attachment D.**

Section II. Additional attachments and supporting documents.

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan,** e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to ***Plot Plan Guidance***) .
– Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F.**

23. Provide a **Process Description** as **Attachment G.**
– Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H.**

– For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I.**

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J.**

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K.**

28. Check all applicable **Emissions Unit Data Sheets** listed below:

☐ Bulk Liquid Transfer Operations	☒ Haul Road Emissions	☐ Quarry
☐ Chemical Processes	☐ Hot Mix Asphalt Plant	☐ Solid Materials Sizing, Handling and Storage Facilities
☐ Concrete Batch Plant	☐ Incinerator	
☐ Grey Iron and Steel Foundry	☐ Indirect Heat Exchanger	☐ Storage Tanks
☐ General Emission Unit, specify		

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L.**

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

☐ Absorption Systems	☐ Baghouse	☐ Flare
☐ Adsorption Systems	☐ Condenser	☐ Mechanical Collector
☐ Afterburner	☐ Electrostatic Precipitator	☐ Wet Collecting System

☒ Other Collectors, specify: **Bin Vents**

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M.**

30. Provide all **Supporting Emissions Calculations** as **Attachment N,** or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O.**

➢ Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and ***Example Legal Advertisement*** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **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 found in the ***General Instructions*** as **Attachment Q.**

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

☐ Authority of Corporation or Other Business Entity	☐ Authority of Partnership
☐ Authority of Governmental Agency	☐ Authority of Limited Partnership

Submit completed and signed **Authority Form** as **Attachment R.**

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

Certification of Truth, Accuracy, and Completeness

I, the undersigned ☒ **Responsible Official** / ☐ **Authorized Representative,** hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

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.

SIGNATURE Daniel L. Coldren *(Please use blue ink)* DATE: 01/26/2016 *(Please use blue ink)*

35B. Printed name of signee: **Daniel L. Coldren**		35C. Title: **Director, Fort Martin Power Station**
35D. E-mail: **dcoldre@firstenergycorp.com**	36E. Phone: **304-598-5250**	36F. FAX:
36A. Printed name of contact person (if different from above): **Tonia A. Downs**		36B. Title: **Engineer V**
36C. E-mail: tdowns@firstenergycorp.com	36D. Phone: **(724) 838-6057**	36E. FAX: **(234) 678-2385**

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

- ☒ **Attachment A: Business Certificate**
- ☐ **Attachment B: Map(s)**
- ☐ **Attachment C: Installation and Start Up Schedule**
- ☐ **Attachment D: Regulatory Discussion**
- ☒ **Attachment E: Plot Plan**
- ☒ **Attachment F: Detailed Process Flow Diagram(s)**
- ☒ **Attachment G: Process Description**
- ☒ **Attachment H: Material Safety Data Sheets (MSDS)**
- ☒ **Attachment I: Emission Units Table**
- ☒ **Attachment J: Emission Points Data Summary Sheet**
- ☒ **Attachment K: Fugitive Emissions Data Summary Sheet**
- ☒ **Attachment L: Emissions Unit Data Sheet(s)**
- ☒ **Attachment M: Air Pollution Control Device Sheet(s)**
- ☐ **Attachment N: Supporting Emissions Calculations**
- ☐ **Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans**
- ☒ **Attachment P: Public Notice**
- ☐ **Attachment Q: Business Confidential Claims**
- ☐ **Attachment R: Authority Forms**
- ☒ **Attachment S: Title V Permit Revision Information**
- ☒ **Application Fee**

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:

- ☐ ***Forward 1 copy of the application to the Title V Permitting Group and:***
- ☐ ***For Title V Administrative Amendments:***
  - ☐ ***NSR permit writer should notify Title V permit writer of draft permit,***
- ☐ ***For Title V Minor Modifications:***
  - ☐ ***Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,***
  - ☐ ***NSR permit writer should notify Title V permit writer of draft permit.***
- ☐ ***For Title V Significant Modifications processed in parallel with NSR Permit revision:***
  - ☐ ***NSR permit writer should notify a Title V permit writer of draft permit,***
  - ☐ ***Public notice should reference both 45CSR13 and Title V permits,***
  - ☐ ***EPA has 45 day review period of a draft permit.***

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

FirstEnergy

2620492

VOID IF NOT CASHED WITHIN 90 DAYS

50-937
213

Check No. 2620492

CHECK DATE	AMOUNT
01 25 2016	******1,000.00

PAY TO THE ORDER OF
WV DEPT OF ENVIRONMENTAL PROTECTION
AIR POLUTION CONTROL FUND
601 57TH STREET SE
CHARLESTON, WV 25304

EXACTLY ******1,000 DOLLARS 00 CENTS

Steven R. Staub
Treasurer
FirstEnergy Corp.

JPMorgan Chase Bank, Syracuse, NY 13206

⑈2620492⑈ ⑆021309379⑆ 6018647888⑈

VENDOR NO. 0010032914 DOC NO. 2000025156

PO NO	INVOICE / RCPT #	DATE	DOCUMENT #	VENDOR INV AMT	DISCOUNT	NET AMOUNT
	FM45CSR13	01/22/2016	1902000652	1,000.00	0.00	1,000.00
	FORT MARTIN PERMIT FEE					

FOR WORKERS COMPENSATION INQUIRY, CONTACT ASSOCIATED COMPENSATION RESOURCES AT 216-731-8215.
ALL OTHER CHECK INQUIRY, CONTACT FIRSTENERGY ACCOUNTS PAYABLE HELP DESK AT 814-539-3200.

Attachment A
Business Certificate

WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION CERTIFICATE

ISSUED TO:
MONONGAHELA POWER COMPANY
DBA FORT MARTIN POWER STATION

MAIDSVILLE, WV 26541-0000

BUSINESS REGISTRATION ACCOUNT NUMBER: **1007-8199**

This certificate is issued on: 06/22/2011

This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with Chapter 11, Article 12, of the West Virginia Code

The person or organization identified on this certificate is registered to conduct business in the State of West Virginia at the location above.

This certificate is not transferrable and must be displayed at the location for which issued.

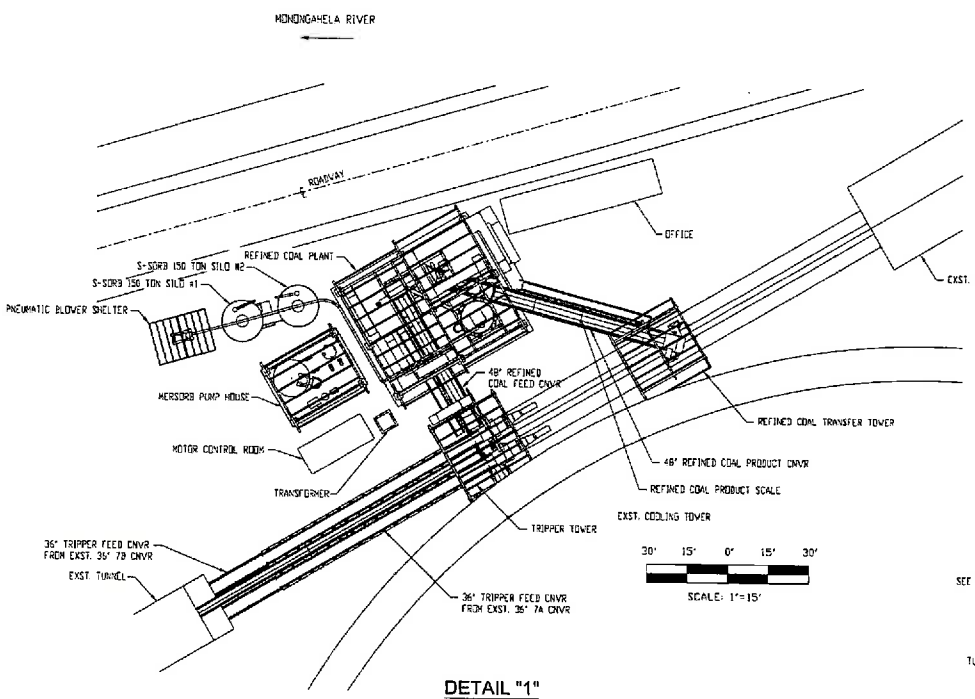
This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

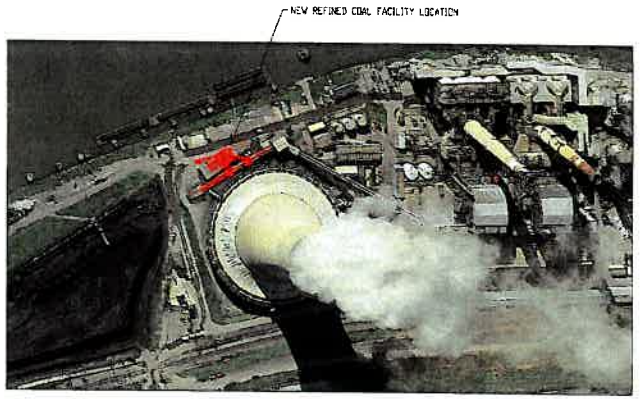
TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them. CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

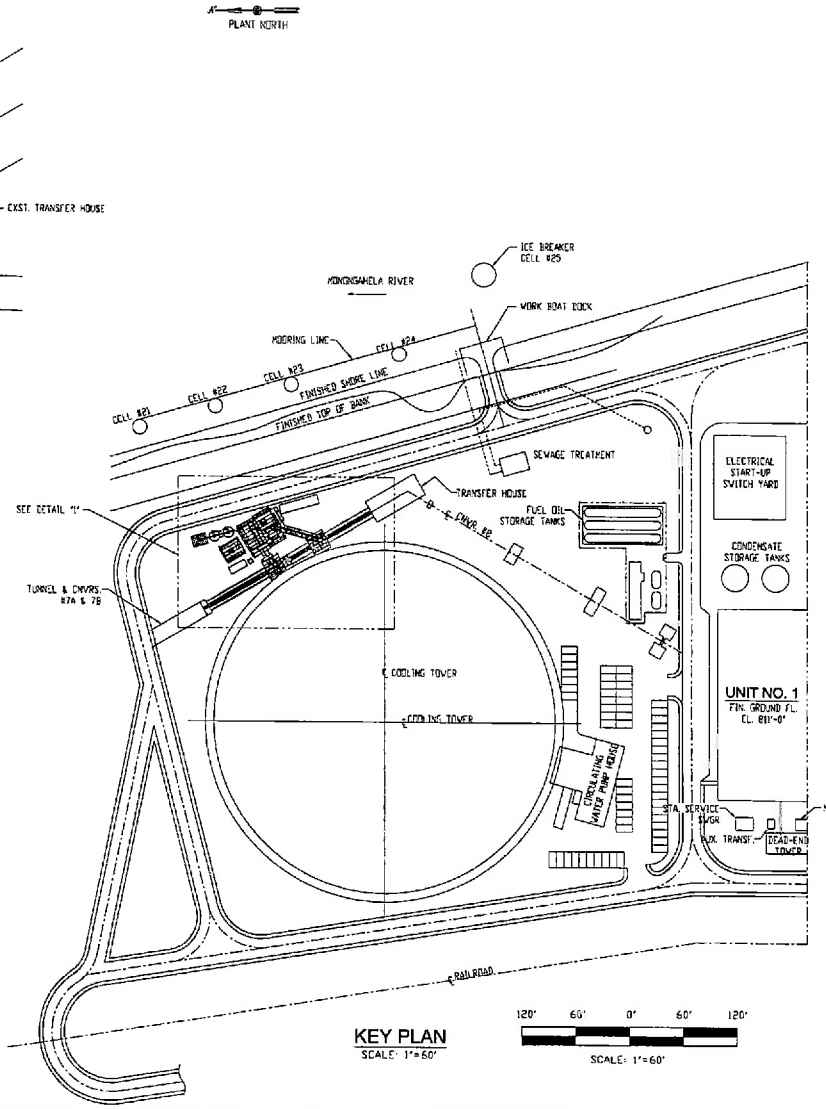
atL006 v.4
L1920515200

Attachment E
Plot Plan



DETAIL "1"
SCALE: 1"=15'





KEY PLAN
SCALE: 1"=60'

REV	ISSUED FOR	DATE	MADE BY
D			
C			
B	REVISED LOCATION OF BLDG OFFICE/PUMP HOUSE, AND MCC ROOM	10/29/15	MDM
A	PERMIT	10/19/15	MDM

REV	REVISION DESCRIPTION	MADE BY	CHECKED BY	DATE
4				
3				
2				
1				

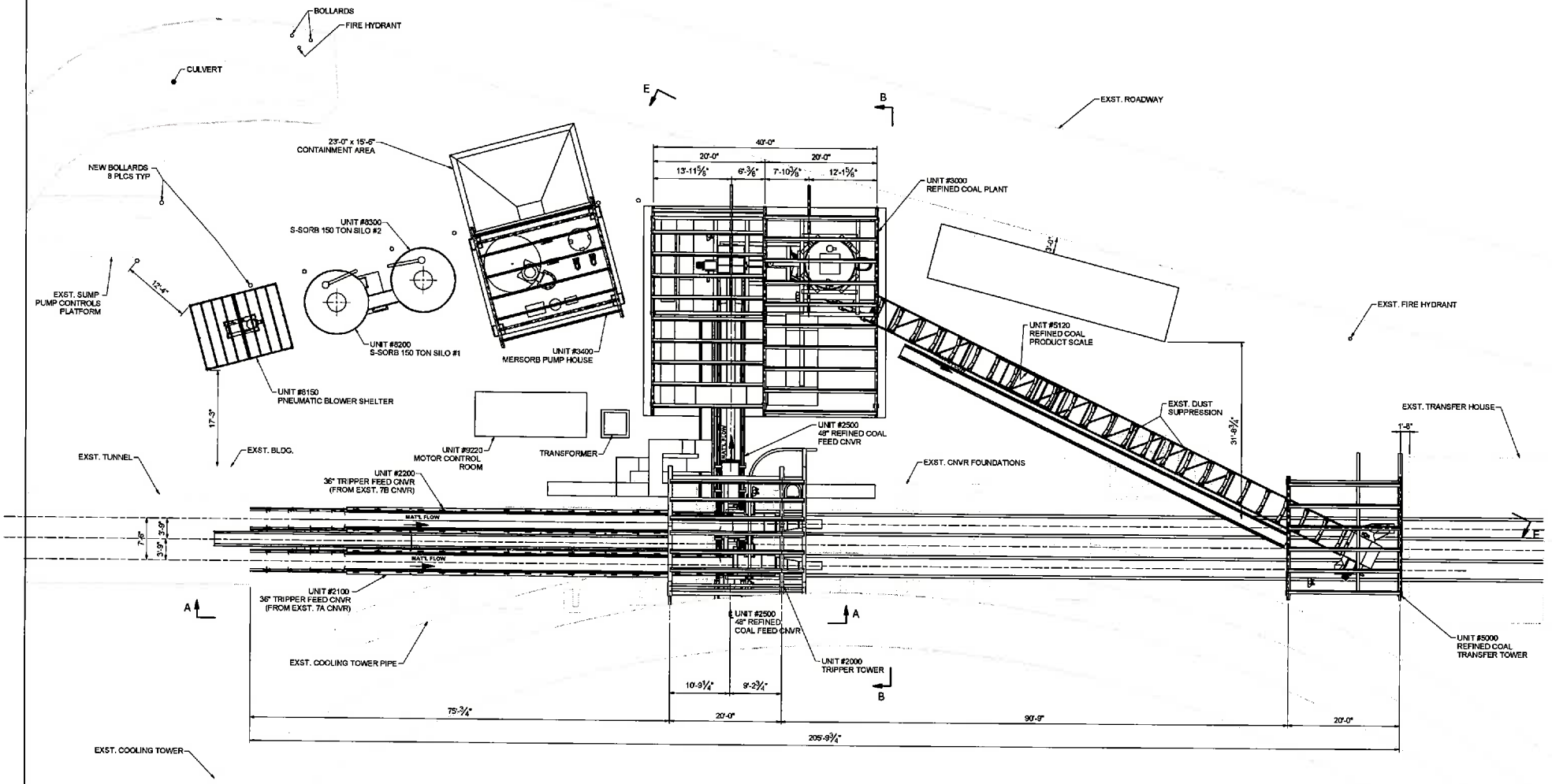
DRAWN BY	MDM	DATE 10/19/15
DESIGNED BY	MDM	DATE 10/19/15
CHECKED BY	TJP	DATE 10/19/15
APPROVED BY		DATE

AJG COAL INC.
REFINED COAL FACILITY
FORT MARTIN POWER STATION
PLOT PLAN

SCALE 1"=50'
DRAWING NO PP-001
PROJECT NO 549
REV B
SHEET 1 OF 1

Plot Date: Thursday, October 29, 2015 9:35:01 AM Dwg: S:\549 Fort Martin Refined Coal Processing Plant\AutoCad\549-PP-001 Ft. Martin Power Station Plot Plan.dwg

REFERENCE DWG.



FT. MARTIN REFINED COAL FACILITY GENERAL ARRANGEMENT

REV.	ISSUED FOR	DATE	MADE BY
E	RVS'D LOCATION OF RETURN TRANSFER BLDG	12/16/15	MDM
D	RVS'D CONCRETE CONTAINMENT	12/01/15	MDM
C	RELOCATED PUMP HOUSE & SILOS, ADDED CONTAINMENT	11/16/15	MDM
B	RELOCATED SILOS & MERSORB BLDG.	10/20/15	MDM
A	FOR APPROVAL	10/09/15	MDM

REV.	REVISION DESCRIPTION	MADE BY	CHECKED BY	DATE
4				
3				
2				
1				

DRAWN BY:	MDM	DATE: 10/09/15
DESIGNED BY:	MDM	DATE: 10/09/15
CHECKED BY:	TJP	DATE: 10/09/15
APPROVED BY:		DATE:

AJG COAL INC.	
REFINED COAL FACILITY	
FORT MARTIN POWER STATION	
GENERAL ARANGEMENT	

SCALE	1/8" = 1'-0"
PROJECT NO.	549
DRAWING NO.	G-001
REV.	E
SHEET	1 OF 4

Attachment F
Process Flow Diagram

TRIPPER BUILDING DETAILS (UNIT 2000):

SLOPED ROOF WITH SHEET METAL SIDINGS.

NON-HEATED.

LOUVERS ONLY FOR VENTILATION.

ELECTRICAL AREA CLASSIFICATION: CLASS II, DIVISION 1,GROUP F.

REFINED COAL PLANT BUILDING DETAILS (UNIT3000):

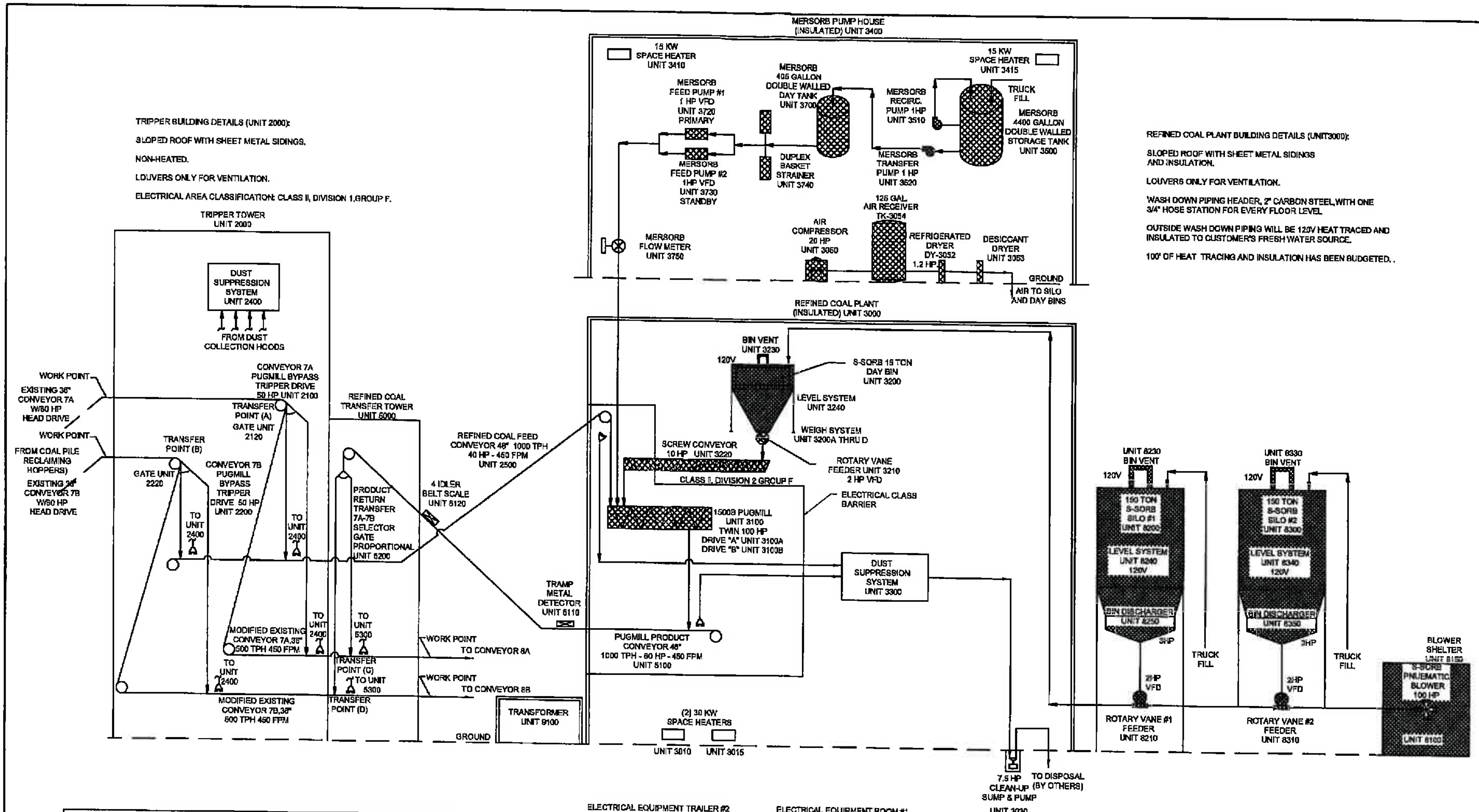
SLOPED ROOF WITH SHEET METAL SIDINGS AND INSULATION.

LOUVERS ONLY FOR VENTILATION.

WASH DOWN PIPING HEADER, 2" CARBON STEEL,WITH ONE 3/4" HOSE STATION FOR EVERY FLOOR LEVEL.

OUTSIDE WASH DOWN PIPING WILL BE 120V HEAT TRACED AND INSULATED TO CUSTOMER'S FRESH WATER SOURCE.

100' OF HEAT TRACING AND INSULATION HAS BEEN BUDGETED..



MERSORB PUMP HOUSE (INSULATED) UNIT 3400
15 KW SPACE HEATER UNIT 3410
15 KW SPACE HEATER UNIT 3415
MERSORB FEED PUMP #1 1 HP VFD UNIT 3720 PRIMARY
MERSORB FEED PUMP #2 1HP VFD UNIT 3730 STANDBY
MERSORB 405 GALLON DOUBLE WALLED DAY TANK UNIT 3700
DUPLEX BASKET STRAINER UNIT 3740
MERSORB RECIRC. PUMP 1HP UNIT 3510
MERSORB TRANSFER PUMP 1 HP UNIT 3520
TRUCK FILL
MERSORB 4400 GALLON DOUBLE WALLED STORAGE TANK UNIT 3500
MERSORB FLOW METER UNIT 3750
AIR COMPRESSOR 20 HP UNIT 3050
125 GAL. AIR RECEIVER TK-3054
REFRIGERATED DRYER DY-3052 1.2 HP
DESICCANT DRYER UNIT 3053
GROUND
AIR TO SILO AND DAY BINS
TRIPPER TOWER UNIT 2000
DUST SUPPRESSION SYSTEM UNIT 2400
FROM DUST COLLECTION HOODS
REFINED COAL PLANT (INSULATED) UNIT 3000
BIN VENT UNIT 3230
120V
S-SORB 15 TON DAY BIN UNIT 3200
LEVEL SYSTEM UNIT 3240
WEIGH SYSTEM UNIT 3200A THRU D
ROTARY VANE FEEDER UNIT 3210 2 HP VFD
SCREW CONVEYOR 10 HP UNIT 3220
CLASS II, DIVISION 2 GROUP F
ELECTRICAL CLASS BARRIER
1500B PUGMILL UNIT 3100 TWIN 100 HP DRIVE "A" UNIT 3100A DRIVE "B" UNIT 3100B
DUST SUPPRESSION SYSTEM UNIT 3300
WORK POINT
EXISTING 36" CONVEYOR 7A W/50 HP HEAD DRIVE
WORK POINT
FROM COAL PILE RECLAIMING HOPPERS)
EXISTING 36" CONVEYOR 7B W/50 HP HEAD DRIVE
CONVEYOR 7A PUGMILL BYPASS TRIPPER DRIVE 50 HP UNIT 2100
TRANSFER POINT (A)
GATE UNIT 2120
TRANSFER POINT (B)
GATE UNIT 2220
CONVEYOR 7B PUGMILL BYPASS TRIPPER DRIVE 50 HP UNIT 2200
TO UNIT 2400
REFINED COAL TRANSFER TOWER UNIT 6000
PRODUCT RETURN TRANSFER 7A-7B SELECTOR GATE PROPORTIONAL UNIT 6200
REFINED COAL FEED CONVEYOR 48" 1000 TPH 40 HP - 450 FPM UNIT 2500
4 IDLER BELT SCALE UNIT 5120
TRAMP METAL DETECTOR UNIT 6110
PUGMILL PRODUCT CONVEYOR 48" 1000 TPH - 60 HP - 450 FPM UNIT 5100
MODIFIED EXISTING CONVEYOR 7A,36" 500 TPH 450 FPM
MODIFIED EXISTING CONVEYOR 7B,36" 500 TPH 450 FPM
TO UNIT 5300
TRANSFER POINT (C)
TRANSFER POINT (D)
WORK POINT TO CONVEYOR 8A
WORK POINT TO CONVEYOR 8B
TRANSFORMER UNIT 9100
GROUND
(2) 30 KW SPACE HEATERS
UNIT 3010
UNIT 3015
UNIT 8230 BIN VENT
UNIT 8330 BIN VENT
150 TON S-SORB SILO #1 UNIT 8200
150 TON S-SORB SILO #2 UNIT 8300
LEVEL SYSTEM UNIT 8240 120V
LEVEL SYSTEM UNIT 8340 120V
BIN DISCHARGER UNIT 8250
BIN DISCHARGER UNIT 8350
3HP
2HP VFD
TRUCK FILL
ROTARY VANE #1 FEEDER UNIT 8210
ROTARY VANE #2 FEEDER UNIT 8310
BLOWER SHELTER UNIT 8150
S-SORB PNUEMATIC BLOWER 100 HP
UNIT 8100
7.5 HP CLEAN-UP SUMP & PUMP UNIT 3030
TO DISPOSAL (BY OTHERS)
ELECTRICAL EQUIPMENT TRAILER #2 (10' X 44') 9400
CR SECTION HVAC UNIT 9450
CONTROL ROOM UNIT 9420
ELECTRICAL EQUIPMENT ROOM #1 (20' L x 8' W x 8.75' H) UNIT 9200
MCC SECTION HVAC UNIT 9250
EER LIGHTING TRANSFORMER UNIT 9260
MOTOR CONTROL CENTER UNIT 9220
= RELOCATED EQUIPMENT

PLANT FEED RATES (TPH)		ANNUAL MAX BURN (TONS)	TONS/WEEK	HOURS/WEEK BASED ON MAX RECLAIM RATE
1000	CONVEYORS 7A & 7B COMBINED MAX RECLAIM	2,800,000	53,846	54

	STORAGE CAPACITY - 5 DAYS					
	B- SORB			MERSORB		
MAX BURN RATE TONS PER DAY	TPD	STORAGE (TONS)	SILO (TONS)	GPD	STORAGE (GAL)	TANKS (GAL)
10,000	35	175	(2) - 150	169	845	(1) - 4400

	PERCENT BY WEIGHT			CHEMICAL FLOW (TPH)			CHEMICAL FLOW (GPH)		
	LOW	DESIGN	HIGH	LOW	DESIGN	HIGH	LOW	DESIGN	HIGH
MERSORB	0.01%	0.012%	0.03%	0.10	0.12	0.30	14.08	16.90	42.25
S-SORB	0.20%	0.35%	0.50%	2.00	3.50	5.00			

REV	DATE	BY	DESCRIPTION
J	12/17/15	ML	REVISED PUGMILL PRODUCT CONVEYOR HORSE POWER
H	11/09/15	ML	REMOVED TRUCK FILL FROM PNUEMATIC BLOWER
G	11/06/15	ML	ADDED TRAMP METAL DETECTOR & RESIZED PUGMILL PRODUCT CONVEYOR
F	10/15/15	ML	RELOCATE & SIZE MERSORB STORAGE TANKS & PUMPS
E	10/08/15	ML	REVISED TITLE BLOCK
D	10/06/15	ML	REVISED EQUIPMENT & CHART

FARNHAM & PFILE ENGINEERING INC.

AJG COAL INC. REFINED COAL FACILITY
FORT MARTIN POWER STATION
FLOW SHEET

DRAWN BY: ML | DATE: 09/22/15 | DWG No: 549-FS-001 | REV: J

CHECKED BY: TJP | SCALE: N.T.S.

Attachment G
Process Description

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Production of Refined Coal

using the

Chem-Mod Process

Purpose

The facility and process described in this report is designed to produce a Refined Coal fuel as described in Title 26, Section 45 of the United States Code. This code requires that for a fuel to qualify as a Refined Coal, it must exhibit reduced emission of Nitrogen Oxides (NO_X) combined with reduced emission of either Sulfur Dioxide (SO_2) or Mercury (Hg) when burnt in the production of steam.

Most Refined Coal production facilities will be constructed at the facility which will burn the fuel (host facility). This eliminates the need to protect the Refined Coal from weathering as it can be produced and supplied on a just in time basis. Likewise it allows for reliable compliance with the regulatory requirement that the Refined Coal be burned in the production of steam. This report is written to describe such an installation.

Process

The Chem-Mod Process uses proprietary chemical sorbent additives to reduce the formation of NO_X and for the capture of Hg when coal is burned to produce steam for commercial use, industrial processes, or the generation of electricity.

The Chem-Mod solution is a dual-reagent coal pretreatment method which uses a halogen for mercury oxidation and a dry-powder sorbent for capture of mercury and other oxidized metals. The halogen is added to the coal as a salt solution, in this case 52% $CaBr_2$ in water. The Chem-Mod trade name for this additive is MerSorb. The dry powder sorbent is made from raw feed, product and by-product materials from the cement industry. The Chem-Mod trade name for this additive is S-Sorb. The S-Sorb properties are specified for different rank coals to avoid unwanted balance-of-plant (BoP) or emissions issues. The component materials in the S-Sorb are dictated by the applicable specification. These two reagents are typically added to the coal when the coal is bunkered for firing in the steam generator. The product of the coal and additives is called Refined Coal.

When coal is burned Mercury (Hg) is released from the mineral matrix in elemental form (Hg^0). Mercury in coal is mainly associated with sulfide minerals such as pyrite. The Hg^0 is gaseous at all temperatures throughout the boiler and air quality control (AQC) system, and as it is comparatively non-reactive, most all is released up the stack. When refined coal is burned the MerSorb is thermally decomposed in the furnace and the Bromine (Br) reacts with Hg^0 to produce the oxidized form (Hg^{2+}). The Hg^{2+} form is very reactive and can be removed from the flue gases in a number of ways. It can react with solid particles such as the S-Sorb. It also can be absorbed on powdered activated carbon (PAC) or in wet scrubber liquor. The metals captured by the S-Sorb, including Hg are bound in a zeolite-type structure, which are not leachable to the environment. TCLP data show that Chem-Mod refined coal ash has lower levels of most constituents compared to untreated coal. TCLP levels are consistently less than RCRA limits and in most all cases are below Drinking Water limits. In the Chem-Mod solution, NO_X

emissions are reduced by reaction with the S-Sorb. NO_X is reduced by simple base-acid chemical reactions with elements in the S-Sorb.

Chem-Mod in cooperation with B&W also offers an alternative TriSorb (three-sorbent) solution, which includes the use of Mitagent™ in conjunction with the original solution (MerSorb plus S-Sorb). Mitagent reduces the amount of Br required for Hg oxidation, and also reacts with non-metal gas-phase species such as Selenium (Se), Phosphorus (P) and Arsenic (As). The latter two elements are known to cause SCR catalyst deactivation. Phosphorus occurs in higher concentrations in some Powder River Basin coals, and As is common in high-sulfur Eastern coals. It should be added that the S-Sorb also is known to react with gas-phase As and consequently improve catalyst lifetimes.

Facility

Sorbents are delivered to the facility in various ways, depending upon the production capacity of the facility. S-Sorb and Mitagent are delivered as a dry bulk product usually supplied in pneumatic tank trucks or rail cars. MerSorb is provided as an aqueous solution delivered in tank trucks, rail cars, or chemical totes.

Upon receipt, the sorbents are conveyed or pumped to appropriate on site storage facilities; tanks or tote storage areas for the liquid MerSorb and silos for the dry S-Sorb. Again, the size of the on site storage containers are determined by the production capacity of the facility to provide a reasonable on site volume for production. Containment structures will be constructed to comply with applicable regulations.

Coal is diverted from the existing host plant feed system to the Refined Coal facility for the purpose of adding the sorbents to produce a Refined Coal. The conveyors and mixers of the Refined Coal facility are of sufficient capacity to process all coal used by the host facility at the maximum rate the host facility reclaims the coal from its storage yard. The coal is conveyed to the mixer were it is combined with the S-Sorb, MerSorb, and possibly Mitagent. The MerSorb is pumped from the storage tank(s) to the mixer using a metering pump which can be controlled to provide the proper mass of sorbent to the coal stream. The S-Sorb and Mitagent are conveyed to the mixer using proportional feeders which can be controlled to provide the required mass of sorbent to the coal stream. The coal and sorbents are then thoroughly mixed in a mechanical device sized to provide even distribution of the sorbents with the coal. The Refined Coal is then conveyed back to the host facility's coal reclaim system for use in the furnaces.

Scales, flow meters, volumetric controls, pressure, temperature, and other instrumentation is provided as necessary to properly control the process. Inputs from the measuring devices are fed to a process control system which controls all components to properly proportion and blend the components to produce a consistent product.

The facility is designed such that all coal flow can bypass the facility at any time so as not to adversely impact operation of the host facility in the unlikely event that the Refined Coal facility is inoperable.

Effects on Host Facility

The primary effect on the host facility is the reduction of NO_X and Hg air emissions from the facility. NO_X is reduced by adsorption in the boiler. Hg is reduced by the oxidation of elemental mercury and the subsequent capture of mercuric compounds in ceramicized matrices in the ash which is captured as fly ash or bottom ash in the host facility's collection systems.

The Refined Coal facility may add three to five transfer points to the fuel handling system, depending on the configuration of the existing reclaim system. These transfer points will be controlled for fugitive dust in the same manner as existing systems or as required by regulation.

The sorbent additives essentially increase the "ash" component of the fuel and report to the ash collection equipment of the host facility. The sorbents will typically increase the ash percentage of the fuel 0.3%. The host facility must be capable of handling this increased ash loading in the flue gas particulate removal and handling systems.

In some facilities burning subbituminous coals, boiler deposits and corrosion of downstream flue gas components have been observed. These detrimental effects have been resolved by changes in plant operating procedures and in some cases material retrofits.

Stations have benefitted from increased SCR catalyst life due to S-Sorb and Mitagent reacting with gas phase Arsenic and Phosphorous.

Stations equipped with wet flue gas desulfurization equipment may utilize the Tri-Sorb version of refined coal to allow use of halogen oxidizers for Hg control by counteracting the effect halogens have on Selenium species which may cause water quality issues in scrubbed units.

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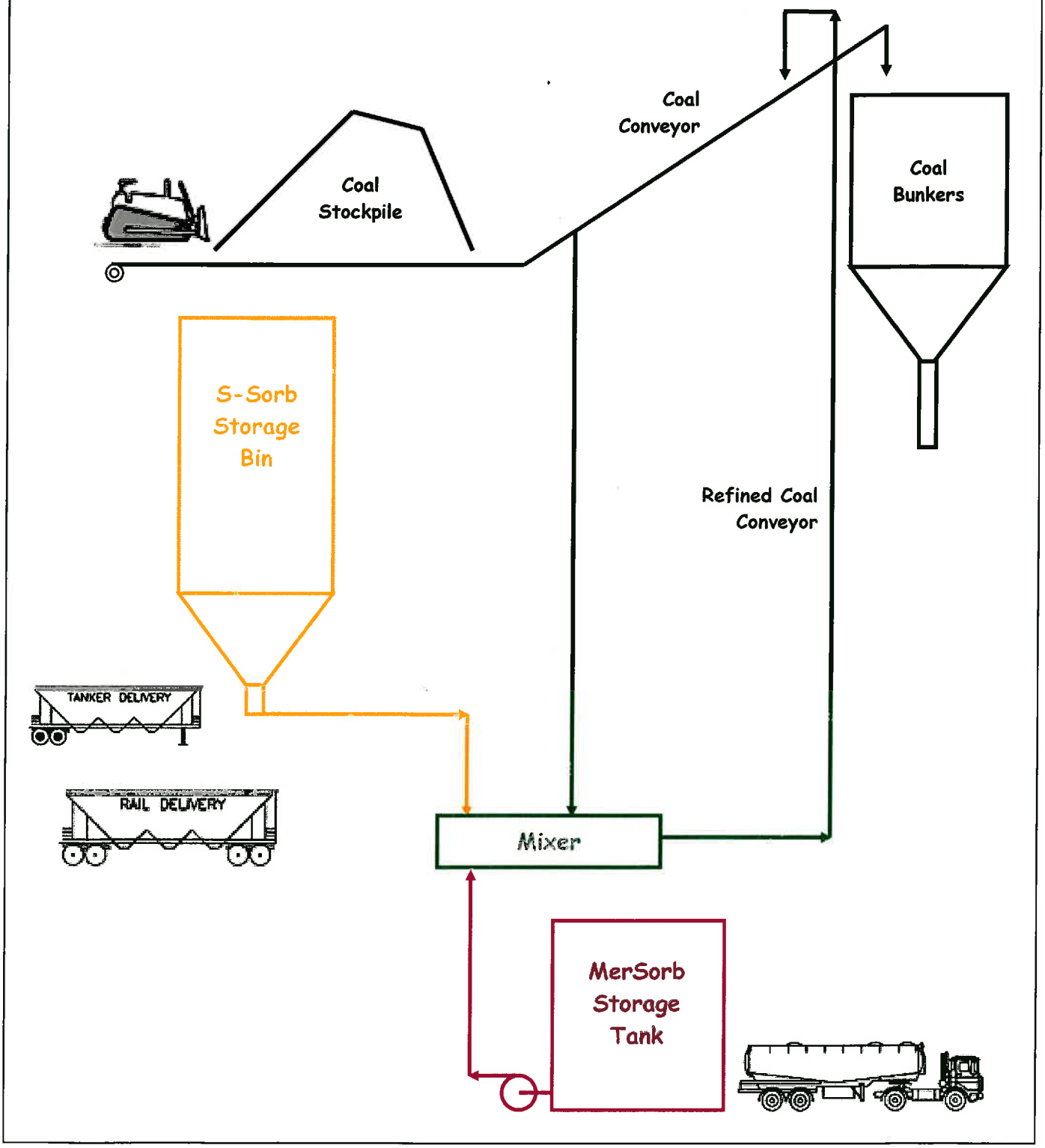
Typical Facility Layout



Introduction

This document provides a detailed description of the layout and operation of the proposed Refined Coal System that will be installed at the Fort Martin Plant. For a general introduction to the Refined Coal program please refer to "Production of Refined Coal utilizing the Chem-Mod Process". That document provides a description of the Refined Coal Program (IRS Section 45), information on the sorbents used in the process, how the sorbents reduce emissions, and description of a typical installation.

System Overview

The Refined Coal System at Fort Martin will consist of a mixer and the associated chemical application equipment necessary to add the required Chem-Mod sorbents to the coal necessary to produce refined coal. The unit numbers called out in this document reference the equipment unit number designated in the process flow diagram (Farnham & Pfile drawing 549-FS-0001) which provides a graphic presentation of the system.

Pug Mill Mixer

The mixer (UNIT 3100) will be installed in a new process building which receives coal from Conveyors 7A/B via a new pugmill feed conveyor (UNIT 2500). Conveyors 7A/B will be tripped via flop gates that allow the coal to either be fed to the mixer to produce refined coal or to bypass the mixer so that the boiler can be operated on coal directly reclaimed from the yard to minimize detrimental impact on the power station availability. The mixer will be a twin screw pug mill which has a capacity of processing 1500+ tons of coal per hour. The sorbents (MerSorb and S-Sorb) will be added to mixer along with the coal at the feed end of the mixer.

MerSorb System

The MerSorb application system will be located in a new pumphouse adjacent to the refined coal process building. The primary components of this system will be a 405 gallon day storage tank (UNIT 3700), application pumps (UNITS 3720, 3730), and a flow meter (UNIT 3750).

S-Sorb System

The S-Sorb application system will be installed inside the refined coal process building. The primary components will be a 15 ton day bin (UNIT 3200), rotary vane feeder (UNIT 3210) to control the application rate, and a screw conveyor (UNIT 3220) to move the S-Sorb to the mixer.

Bulk Storage

In addition to the application systems there will be bulk storage systems for MerSorb and S-Sorb. For S-Sorb there will be two 150 ton capacity silos (UNITS 8200/8300) and a transfer blower (UNIT 8100). For MerSorb there will be a 4400 gallon storage tank (UNIT 3500) and transfer pumps (UNITS

3510/3520). These systems provide for bulk storage of sorbents on site to ensure availability. They also provide the means to transfer from the bulk storage containers to the day bin/tank for application.

Power and Control

The facility has a new Motor Control Center to provide power to all components. The MCC will be fed from the station bus via a new transformer. The facility has a PLC based control system. The PLC receives input from process instrumentation and provides output control signals to all components in the system. The PLC will be installed along with the MCC in a new electrical building.

Process

The coal being fed to the boiler house will be diverted from the discharge of Conveyors 7A and 7B at a trip installed in a new transfer tower. Coal will be transported from the trip via a new conveyor (UNIT 2500) into the mixer. Scales installed in the new pugmill discharge conveyor (UNIT 5100) senses the coal flow rate through the system and transmits that information to the PLC. The facility PLC calculates the required flow rates of MerSorb and S-Sorb for the given coal flow.

MerSorb will be pumped from the day tank by an application pump, through a flow meter and into a distribution manifold in the mixer where it will be applied to the coal. The application pumps will be fitted with variable frequency drives that will be controlled by the PLC. The measured flow rate will be communicated to the PLC which continuously adjusts the pump speed to match the flow of MerSorb to the coal flow.

S-Sorb will be fluidized in the day bin and discharged via a rotary vane feeder. The vane feeder will be fitted with a variable frequency drive that will be controlled by the PLC. The day bin sits on load cells which supply net weight indication to the PLC. As S-Sorb is discharged from the bin the change in weight will be used by the PLC to calculate the application rate of the S-Sorb. The PLC continuously adjusts the vane feeder to match flow of S-Sorb to the coal flow. The S-Sorb will be discharged from the vane feeder into a transfer screw conveyor which discharges the S-Sorb to the mixer where it will be applied to the coal.

The mixer discharges the now refined coal to the pugmill discharge conveyor (UNIT 5100). The pugmill discharge conveyor discharges the refined coal back to Conveyors 7A/B downstream of the extraction point in another new transfer structure via a proportional gate (UNIT 5200) where the coal can be sent to 7A, 7B, or split between the two conveyors.

Application Rates

The required sorbent application rates are established to comply with the NOx and Hg emission reduction requirements of the Section 45 Refined Coal program. The required rate per unit of coal is determined in testing at the University of North Dakota's Energy and Environmental Research Center.

These rates are quantified as a percentage of sorbent by weight to the coal. Over time these rates may vary as there are changes in the coal being burned and improvements to the sorbents are made. Additionally rates may change with changes to the boiler and associated pollution control devices.

Since the completion of the original test program and permitting process, Chem-Mod has worked with the various utilities burning refined coal to reduce the sorbent applications necessary to qualify the coal as refined coal. In the case of the Fort Martin installation the current application rates for the sorbents have been significantly reduced due to enhancements to the sorbents and the emission control equipment installed at Fort Martin. For Fort Martin, the application rates that will be used are given in the table below.

	Lo		Hi				
Coal Reclaim Rate	400	TPH	1000	TPH	**Coal Full Burn Rate**	440 TPH	10,560 TPD
MerSorb Rate	0.012%						
	6.76	GPH	16.9	GPH	220 GPD at Full Burn		65,145 GPY at Full Burn
S-Sorb Rate	0.350%						
	1.40	TPH	3.50	TPH	37 TPD at Full Burn		13,490 TPY at Full Burn

It is anticipated that these rates will remain in effect for the life of the project; however they may be changed in order to keep the refined coal in compliance with the IRS regulation.

Attachment H
Safety Data Sheets (SDS)

Chem•Mod
Making Power Cleaner.

S-SORB® III
SAFETY DATA SHEET

Revision Date: 12/23/2015 Supersedes: 05/11/2015 Version 6

SECTION 1: IDENTIFICATION OF SUBSTANCE/MIXTURE AND COMPANY

Product Identifier

Product Form: Mixture

Product Name: S-Sorb® III

CAS No. 7789-41-5

Chemical Family: A mineral composite of calcium aluminosilicate compounds and other calcium compounds containing iron, magnesium, and sulfur

Synonyms: Calcium Aluminosilicate, Cement Kiln Dust

Intended Use of Product

Coal additive for Mercury Emission Reduction

Name, Address, and Telephone Number of Responsible Party

Chem-Mod LLC
2 Pierce Place
20th Floor
Itasca, IL 44224
Telephone: 866-846-4789

Emergency Telephone Number:

1- 412-889-7718

SECTION 2: HAZARDS IDENTIFICATION

Classification of Substance (GHS-US)

Serious Eye Irritant, Category 2A
Skin Irritant, Category 2

Label Elements (GHS-US)

Hazard Pictogram(s)

Signal Word

Warning

Hazard Statements

H319 Causes serious eye irritation.
H315 Causes skin irritation.
H303 May be harmful if swallowed.
H333 May be harmful if inhaled.

Precautionary Statements

P280 Wear eye protection, long sleeves and pants, protective gloves.
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
P337+313 IF EYE IRRITATION PERSISTS: Seek medical advice/attention.
P302+352 IF ON SKIN: Wash thoroughly with soap and water.
P332+313 IF SKIN IRRITATION OCCURS: Seek medical advice/attention.
P264 Wash hands, forearms, and exposed areas thoroughly after handling.
P363 Wash contaminated clothing before reuse.
P301+330+331 IF SWALLOWED: Rinse mouth - Do NOT induce vomiting - Drink plenty of water.
P261 Avoid breathing dust
P284 In case of inadequate ventilation wear respiratory protection

Other Hazards

No additional information available.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

SUBSTANCE NAME	FORMULA	CAS No.	%	GHS-US Classification
Calcium carbonate	$CaCO_3$	1217-65-3	10 - 70	Eye Irritant, Category 2B
Calcium hydroxide	CaOH(2)	1305-62-0	3 – 10	Serious Eye Irritant, Category 2A Skin Irritant, Category 2
Calcium oxide	CaO	1305-78-8	2 – 10	Serious Eye Irritant, Category 2A Skin Irritant, Category 2
Aluminum oxide	Al_2O_3	1344-28-1	4 – 30	Eye Irritant, Category 2B
Iron oxide	Fe_2O_3	1309-37-1	1 – 5	Eye Irritant, Category 2B
Magnesium oxide	MgO	1309-48-4	0 – 2	Eye Irritant, Category 2B
Calcium sulfate	$CaSO_4$	7778-18-9	0 – 7	Eye Irritant, Category 2B Skin Irritant, Category 2
Nuisance dusts (various)		13397-24-5	< 1	Eye Irritant, Category 2B

SECTION 4: FIRST AID MEASURES

First Aid Measures

General:

Never give anything by mouth to an unconscious person.
If you feel unwell, seek medical advice.

Eye Contact:

Rinse thoroughly with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF irritation continues, seek immediate medical assistance.

Skin Contact:

Remove contaminated clothing. Wash thoroughly with soap and water. IF irritation occurs, seek medical assistance.

Ingestion:

Rinse mouth, do not induce vomiting. Drink plenty of water.

Inhalation:

When symptoms occur: go to open air and ventilate suspected area. Remove person to fresh air and rest in position for comfortable breathing. If you feel unwell, seek medical advice.

Symptoms (most important both acute and delayed)

After eye contact, may cause eye irritation

After skin contact, may cause irritation

After ingestion, may cause discomfort in

After inhalation, may cause irritation of upper respiratory tract.

Indication immediate medical attention and special treatment is needed

Discomfort or distress in affected individual

SECTION 5: FIRFIGHTING MEASURES

Extinguishing Media:

S-Sorb III is a nonflammable dry powder.

For fires involving materials surrounding or containing this product, all conventional media correct for the material involved are acceptable.

Special Hazards:

None

Special Protective Equipment / Precautions for Firefighters:

Firefighters should use SCBA in enclosed structures.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions / Protective Equipment:

Wear appropriate PPE, including:
- Safety glasses or goggles
- Long sleeves and pants
- Gloves

Ventilate area to clear dust.

Emergency Procedures:

Stop leak if possible and safe to do so.

For large spills, dike the area and collect the material for re-use or later disposal. Pick up material with shovels or other similar equipment.

Collect remaining / small spill amounts with the aid of vacuum. Place material into containers for later disposal. Move containers from spilled area.

Environmental Precautions:

S-Sorb III is not identified as a hazardous material.

Methods and Material for Containment and Disposal:

Use mechanical means such as shovels and power equipment to pick up material. Material should be recovered for re-use whenever possible. Use vacuums to greatest extent possible to recover spilled material into drums, tanks, or other containers.

Scrape up any wetted material and place in appropriate container. Allow material to "dry" before disposal. Do not attempt to wash S-Sorb III down drains.

Dispose of waste material in accordance with federal, state, and local requirements.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling:

Wear appropriate PPE, including:
- Safety glasses or goggles
- Long sleeves and pants
- Gloves

Avoid contact with skin or eyes.

Remove clothing that is contaminated with S-Sorb III. Launder clothing before reuse.

Supply trucks are offloaded by pressurizing tank truck to low pressure (max 14 psig [1 bar]). A leak during transfer may create a dust cloud. Avoid entering such clouds without respirator equipped with a NIOSH/MSHA approved dust cartridge.

Receiving silos or bins must be fitted with appropriate vent filter systems to control fugitive emission.

Conditions for Safe Storage:

Keep S-Sorb III dry. Normal temperatures and pressures do not affect the material. Material should be stored in silos or bins constructed from mild steel. Silos or bins must be kept closed to keep water out of the material.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters (Occupational Exposure Limits or Biological Limits)
S-Sorb III Not Evaluated (NE). Control parameters for major ingredients are listed below.

Calcium carbonate		
USA ACGIH	TLV (TWA, STEL, CEIL)	10mg/m^3(T), 20mg/m^3, NE
USA OSHA	PEL (TWA, STEL, CEIL)	15mg/m$^{3(}$T)-5mg/m^3 (R), NE, NE
Calcium hydroxide		
USA ACGIH	TLV (TWA, STEL, CEIL)	5mg/m^3(T), NE, NE
USA OSHA	PEL (TWA, STEL, CEIL)	5mg/m^3(T), NE, NE
Calcium oxide		
USA ACGIH	TLV (TWA, STEL, CEIL)	2mg/m^3(T), NE, NE
USA OSHA	PEL (TWA, STEL, CEIL)	5mg/m^3(T), NE, NE
Aluminum oxide		
USA ACGIH	TLV (TWA, STEL, CEIL)	10mg/m^3(T), NE , NE
USA OSHA	PEL (TWA, STEL, CEIL)	15mg/m$^{3(}$T)-5mg/m^3 (R), NE, NE
Iron oxide		
USA ACGIH	TLV (TWA, STEL, CEIL)	5mg/m^3(T), NE, NE
USA OSHA	PEL (TWA, STEL, CEIL)	5mg/m^3(T), NE, NE
Magnesium oxide		
USA ACGIH	TLV (TWA, STEL, CEIL)	10mg/m^3(T), NE, NE
USA OSHA	PEL (TWA, STEL, CEIL)	10mg/m^3(T), NE, NE

Control Parameters (cont.)

Calcium sulfate		
USA ACGIH	TLV (TWA, STEL, CEIL)	10mg/m^3(T), NE, NE
USA OSHA	PEL (TWA, STEL, CEIL)	10mg/m^3(T)-5mg/m^3(R), NE, NE
Nuisance dust (various)		
USA ACGIH	TLV (TWA, STEL, CEIL)	10mg/m^3(T), NE, NE
USA OSHA	PEL (TWA, STEL, CEIL)	10mg/m^3(T), NE, NE

Engineering Controls:

If fugitive release areas are enclosed, provide local exhaust ventilation for those areas. Where there is possibility of exposure, eyewash station should be provided close to the work area.

Individual Protection Measures

Eye/Face Protection: For normal operations, safety glasses with side shields are required. When performing operations on pressurized vessels (offloading delivery trucks) or when performing maintenance where significant dust generation is possible, wear unvented or indirectly vented goggles. In extremely dusty or unpredictable environments, wear unvented or indirectly vented goggles to avoid eye irritation or injury. Contact lenses should not be worn when working with S-Sorb III.

Skin Protection: Prevention is essential to avoiding potentially severe skin injury. Avoid contact with wet S-Sorb III. If contact occurs, promptly wash affected area with soap and water. Where prolonged exposures to S-Sorb III might occur, wear impervious clothing and gloves to prevent skin contact. Where required, wear sturdy boots that are impervious to water to eliminate foot and ankle exposure. Do not rely on barrier creams; barrier creams should not be used in place of impervious gloves and clothing.

Respiratory: A respirator is not indicated under normal handling. In conditions where user may be exposed to splashes or puffs of dust, wear a dust mask. In extremely dusty environments where dense dust clouds are likely, a respirator fitted with MSHA/NIOSH approved dust cartridge should be worn.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Gray to white powder.
Odor:	Normally odorless but may have faint "earth" odor
Odor threshold:	Not Available
pH (in water):	10 to 12.5
Melting/freezing point:	Not Applicable
Boiling point:	> 1000°C

Flash point:	Not Applicable
Evaporation rate:	Not Available
Flammability:	Non-flammable
Flammability limits:	Not Applicable
Explosive limits:	Not Applicable
Vapor pressure:	Not Available
Vapor density:	Not Available
Relative density:	2.6 – 2.8 (water = 1.0)
Solubility:	2 – 20% (in water)
Partition coefficient:	Not Available
Auto-ignition temp:	Not Applicable
Decomposition temp:	> 1000°C
Viscosity:	Varies with temperature

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	Reacts with water to form calcium hydroxide producing a slight release in heat. Heat release is dependent upon the amount of calcium oxide present in the S-Sorb III. Dissolving S-Sorb III in hydrofluoric acid will produce silicon tetrafluoride gas which is corrosive. S-Sorb III is primarily a byproduct of production of Portland cement; as such it has weak cementitious properties. It will form a weak solid mass if the correct amount of water is added.
Chemical stability:	Stable under normal pressure and temperature
Possibility of Hazardous Reactions:	None known
Conditions to Avoid (Stability):	Avoid contact with incompatible materials
Incompatible Materials:	S-Sorb III is alkaline and is incompatible with acids, ammonium salts, and aluminum metal.
Hazardous Decomposition Products:	None known

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity:

Not Available for S-Sorb III. Toxicity for major constituents is as follows:

Calcium carbonate	
LD50 Acute Oral Toxicity – rat	6,450 mg/kg
LD50 Acute Dermal Toxicity	Not available
LC50 Inhalation Toxicity	Not available
Calcium hydroxide	
LD50 Acute Oral Toxicity – mouse	7,300 mg/kg
LD50 Acute Dermal Toxicity	Not available
LC50 Inhalation Toxicity	Not available
Calcium oxide	
LD50 Acute Oral / Dermal Toxicity	Not available
LC50 Inhalation Toxicity	Not available
Aluminum oxide	
LD50 Acute Oral / Dermal Toxicity	Not available
LC50 Inhalation Toxicity	Not available
Iron oxide	
LD50 Acute Oral Toxicity – rat	4,068 mg/kg
LD50 Acute Dermal Toxicity – rabbit	2008 mg/kg
LC50 Inhalation Toxicity – rat	>203 mg/l
Magnesium oxide	
LD50 Acute Oral Toxicity – rat	4,068 mg/kg
LD50 Acute Dermal Toxicity – rabbit	2008 mg/kg
LC50 Inhalation Toxicity – rat	>203 mg/l
Calcium sulfate	
LD50 Acute Oral / Dermal	Not available
LC50 Inhalation Toxicity	Not available

Serious Eye Damage / Irritation:

Causes serious eye irritation.
Prolonged exposure to S-Sorb III dust is corrosive to the eyes and may cause burns or external ulcers.
Prolonged contact may cause conjunctivitis.

Skin Corrosion / Irritation:

Causes slight skin irritation.
Prolonged exposure to wet S-Sorb III is corrosive to the skin. The extent of damage depends on duration of contact. Chronic dermatitis may follow repeated contact at elevated concentrations.

Respiratory or Skin Sensitization:

Not classified

Germ Cell Mutagenicity:

Not classified

Carcinogenicity:

No component of this product is present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by the following programs:

NTP: US. National Toxicology Program (NTP) Report on Carcinogens
IARC: US. IARC Monographs on Occupational Exposures to Chemical Agents
OSHASP: US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
ACGIH: US. ACGIH Threshold Limit Values

Crystalline Silica: S-Sorb III is a manufactured product which is made up of a mixture of calcium compounds which have been processed by calcining, therefore the silica contained in the mixture is contained in oxide compounds with other constituents. Some S-Sorb III is produced with mined minerals to supplement the processed minerals. This mined material may contain trace amounts of crystalline silica.

Reproductive Toxicity:

Not classified

Specific Target Organ Toxicity (single exposure):

Not classified

Specific Target Organ Toxicity (repeated exposure):

Not classified

Symptoms/Injuries after Inhalation:

Inhalation of this material may be corrosive to the respiratory system. Inhalation of low concentrations may cause sore throat, coughing, choking, difficulty in breathing, and symptoms of headache. Chronic exposure may lead to bronchial irritation with chronic cough.

Symptoms/Injuries after Eye Contact:

Causes eye irritation.

Symptoms/Injuries after Ingestion:

Prolonged exposure to elevated concentrations of this material may be corrosive to the digestive tract.

Conditions Aggravated By Exposure:
Respiratory Disorders; Dermatitis or other skin disorders

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity
No data available

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Mobility in the Soil
No data available

Other Adverse Effects
No ecological information or effects are known at this time.

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose in accordance with local, state and federal requirements.

RCRA Information: This material, if discarded as produced, is not a RCRA "listed" hazardous waste. Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. It is the responsibility of the generator to fully characterize for toxicity and other RCRA parameters prior to disposal (40 CFR 261).

SECTION 14: TRANSPORTATION INFORMATION

UN No.:	Not a UN listed material
UN Proper Shipping Name:	Not Applicable
DOT No.:	Not a DOT controlled material (United States)
Hazard Class:	Not Applicable
Hazard Labels:	Not Applicable
Packaging Group:	Not Applicable
DOT Special Provisions:	Not Applicable

DOT Packaging Exceptions: Not Applicable

DOT Packaging Non Bulk: Not Applicable

DOT Packaging Bulk: Not Applicable

Additional Information

Emergency Response Guide (ERG): Not Applicable

Other Information: None

Transport by Sea

DOT Vessel Stowage Location: Not Applicable

MFAG-No.: Not Applicable

Transport by Air

DOT Quantity Limit – Passenger Aircraft: Not Applicable

DOT Quantity Limit – Cargo Only Aircraft: Not Applicable

SECTION 15: REGULATORY INFORMATION

U.S. Regulatory Information:

Stratospheric Ozone Depletion Statement:

This product neither contains nor is directly manufactured with any controlled ozone depleting substances, Class 1 and 11.

SARA Hazard Classes:

SARA Title III Section 313 Toxic Release reporting: This product is not listed or subject to the release reporting requirements of Section 313.

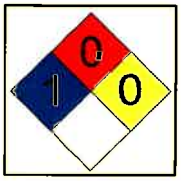
RCRA Information:

This material, if discarded as produced, is not a RCRA "listed" hazardous waste. Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. It is the responsibility of the generator to fully characterize for toxicity and other RCRA parameters prior to disposal (40 CFR 261).

Canadian Regulatory Information:

Not controlled under WHMIS (Canada)

NFPA



WHMIS

HEALTH	1
FLAMMABILITY	0
REACTIVITY	0
PERSONAL PROTECTION	

SECTION 16: OTHER INFORMATION

This revision is written for administrative purposes. No technical changes are made by this revision.

General Disclaimer:

The information provided in this SDS is correct to the best of our knowledge, information, and belief at the date of publication. The information given is designed as a guide for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

Commercial Disclaimer

SELLER MAKES NO WARRANTY. EXPRESSED OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY CHEM-MOD LLC.

Chem•Mod
Making Power Cleaner

MERSORB ®
SAFETY DATA SHEET

Revision Date: 12/23/2015 Supersedes: 15/11/2015 Version 6

SECTION 1: IDENTIFICATION OF SUBSTANCE/MIXTURE AND COMPANY

Product Identifier

Product Form: Mixture

Product Name: MerSorb®

CAS No. 7789-41-5

Formula: $CaBr_2 + H_2O$

Chemical Family: Halide Salt Solution

Synonyms: Calcium Bromide Solution, Brine Solution

Intended Use of Product

Coal additive for Mercury Emission Reduction

Name, Address, and Telephone Number of Responsible Party

Chem-Mod LLC
2 Pierce Place
20th Floor
Itasca, IL 44224
Telephone: 866-846-4789

Emergency Telephone Number:

1-412-889-7718

SECTION 2: HAZARDS IDENTIFICATION

Classification of Substance (GHS-US)

Serious Eye Irritant, Category 2A
Skin Irritant, Category 3

Label Elements (GHS-US)

Hazard Pictogram(s)

Signal Word

Warning

Hazard Statements

H319 Causes serious eye irritation.
H316 Causes mild skin irritation.
H303 May be harmful if swallowed.
H333 May be harmful if inhaled.

Precautionary Statements

P280 Wear eye protection, long sleeves and pants, protective gloves.
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P337+313 IF EYE IRRITATION PERSISTS: Seek medical advice/attention.
P264 Wash hands, forearms, and exposed areas thoroughly after handling.
P363 Wash contaminated clothing before reuse.
P301+330+331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Drink plenty of water.
P261 Avoid breathing mist, spray, or vapors.
P284 In case of inadequate ventilation wear respiratory protection.

Other Hazards

No additional information available.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

SUBSTANCE NAME	FORMULA	CAS No.	%	GHS-US Classification
Calcium Bromide	$CaBr_2$	7789-41-5	≥ 51.5	Serious Eye Irritant, Category 2A Skin Irritant, Category 3
Water	H_2O	7732-18-5	≤ 48.5	None

SECTION 4: FIRST AID MEASURES

First Aid Measures

General:

Never give anything by mouth to an unconscious person.
If you feel unwell, seek medical advice.

Eye Contact:

Rinse thoroughly with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF irritation continues, seek immediate medical assistance.

Skin Contact:

Wash thoroughly with soap and water. Remove contaminated clothing.

Ingestion:

Rinse mouth, do not induce vomiting. Drink plenty of water.

Inhalation:

When symptoms occur: go to open air and ventilate suspected area. Remove person to fresh air and rest in position for comfortable breathing. If you feel unwell, seek medical advice.

Symptoms (most important both acute and delayed)

After eye contact, may cause eye irritation

After skin contact, may cause irritation

After ingestion, may cause nausea

After inhalation, may cause irritation of upper respiratory tract, drowsiness, or dizziness

Indication immediate medical attention and special treatment is needed

Discomfort or distress in affected individual

SECTION 5: FIRFIGHTING MEASURES

Extinguishing Media:

MerSorb is a nonflammable solution.

For fires involving materials surrounding or containing this product, all conventional media correct for the material involved are acceptable.

Special Hazards:

Exposure to elevated temperature (>700°C/1300°F) may cause thermal decomposition resulting in release of bromine, hydrogen bromide, and/or calcium oxides.

Special Protective Equipment / Precautions for Firefighters:

Firefighters should use SCBA in enclosed structures.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions / Protective Equipment:

Wear appropriate PPE, including:
- Safety glasses or goggles
- Long sleeves and pants
- Rubberized gloves

Ventilate area to clear mist or vapors

Emergency Procedures:

Stop leak if possible and safe to do so.

For large spills, dike the area and collect the material for re-use or later disposal.

Collect remaining/small spill amounts with the aid of wet vacuum and water absorbent material. Place sorbents into containers for later disposal. Move containers from spilled area.

Environmental Precautions:

Calcium Bromide is not identified as a hazardous material.

Methods and Material for Containment and Disposal:

Use water proof diking materials to contain large leaks.

Use pumps or wet vacuums to greatest extent possible to recover spilled material into drums, tanks, or other containers.

While there is no discharge limit for Calcium Bromide solutions, good practice includes avoiding discharge to the environment. Dispose of collected absorbed material in accordance with federal, state, and local regulations.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling:

Wear appropriate PPE, including:
- Safety glasses or goggles
- Long sleeves and pants
- Rubberized gloves

Avoid contact with eyes or skin.

Supply trucks are offloaded by pressurizing tank truck to low pressure (max 14 psig [1 bar]). A leak during transfer may create a mist or vapor cloud. Avoid entering such clouds without a NIOSH/MSHA approved organic/acid gas cartridge.

Conditions for Safe Storage:

Storage containers (tanks, drums, etc.) should be constructed of corrosion resistant materials or coated with corrosion resistant material. Recommended materials of construction for containers are polyethylene, stainless steel, carbon steel with all internal surfaces coated with epoxy.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters (Occupational Exposure Limits or Biological Limits)

Calcium Bromide		
USA ACGIH	TLV (TWA, STEL, CEIL)	Not established
USA OSHA	PEL (TWA, STEL, CEIL)	Not established

Engineering Controls:

If fugitive release areas are enclosed, provide local exhaust ventilation for those areas. Where there is possibility of exposure, eyewash station should be provided close to the work area.

Individual Protection Measures

Eye/Face Protection: For normal operations, safety glasses with side shields are required. When performing operations on pressurized vessels (offloading delivery trucks) or when performing maintenance where spray of material is possible, wear tight fitting chemical goggles.

Skin Protection: Use rubberized work gloves. Long sleeved shirts and long pants should be worn. Protective barrier creams may be used on exposed skin surfaces.

Respiratory: A respirator is not indicated under normal handling. Should a leak result in misting or vapor cloud, allow the cloud to dissipate before entering the area. If a vapor cloud must be entered, use NIOSH/MSHA approved organic/acid gas cartridge respirator.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear liquid.
Odor:	Normally odorless but may have faint "earth" odor
Odor threshold:	Not Available
pH:	6 to 8
Melting/freezing point:	Not Available
Boiling point:	264°F
Flash point:	Not Applicable
Evaporation rate:	Not Available
Flammability:	Non-flammable
Flammability limits:	Not Applicable
Explosive limits:	Not Applicable

Vapor pressure:	Not Available
Vapor density:	Not Available
Relative density:	> 1.68 (water = 1.0)
Solubility:	Miscible
Partition coefficient:	Not Available
Auto-ignition temp:	Not Applicable
Decomposition temp:	> 1300°F
Viscosity:	Varies with temperature

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	Not reactive under normal pressure and temperature
Chemical stability:	Stable under normal pressure and temperature
Possibility of Hazardous Reactions:	None
Conditions to Avoid (Stability):	None known
Incompatible Materials:	Strong oxidizing agents or water reactive materials.
Hazardous Decomposition Products:	Thermal decomposition may produce hydrogen bromide, bromine, or oxides of calcium.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity Not Classified

Calcium Bromide	
LD50 Acute Oral Toxicity – rat	4,068 mg/kg
LD50 Acute Dermal Toxicity – rabbit	2,008 mg/kg
LC50 Inhalation Toxicity – rat	>203 mg/l

Serious Eye Damage / Irritation:

Causes serious eye irritation.

Prolonged exposure to elevated concentrations of this material is corrosive to the eyes and may cause burns or external ulcers. Direct contact with the aqueous solutions may cause conjunctival edema and corneal damage. Prolonged contact to concentrated solutions may cause conjunctivitis.

Skin Corrosion / Irritation:

Causes slight skin irritation.

Prolonged exposure to elevated concentrations of this material is corrosive to the skin. During prolonged skin contact, this material can penetrate the unprotected skin slowly. The extent of damage depends on duration of contact. Chronic dermatitis may follow repeated contact at elevated concentrations

Respiratory or Skin Sensitization:

The results of a test on guinea pigs showed this substance to be a weak skin sensitizer. No results for respiratory sensitization.

Germ Cell Mutagenicity:

Not classified

Carcinogenicity:

No component of this product is present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by the following programs:

NTP: US. National Toxicology Program (NTP) Report on Carcinogens
IARC: US. IARC Monographs on Occupational Exposures to Chemical Agents
OSHASP: US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
ACGIH: US. ACGIH Threshold Limit Values

Reproductive Toxicity:

Not classified

Specific Target Organ Toxicity (single exposure):

Not classified

Specific Target Organ Toxicity (repeated exposure):

Not classified

Symptoms/Injuries after Inhalation:

Inhalation of this material may be corrosive to the respiratory system. Inhalation of low concentrations may cause sore throat, coughing, choking, difficulty in breathing, and symptoms of headache. Chronic exposure may lead to bronchial irritation with chronic cough.

Symptoms/Injuries after Eye Contact:

Causes eye irritation.

Symptoms/Injuries after Ingestion:

Prolonged exposure to elevated concentrations of this material may be corrosive to the digestive tract.

Conditions Aggravated By Exposure:

Respiratory Disorders; Dermatitis or other skin disorders

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:
No data available

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Mobility in the Soil
No data available

Other Adverse Effects
No ecological information or effects are known at this time.

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose in accordance with local, state and federal requirements.

RCRA Information: This material, if discarded as produced, is not a RCRA "listed" hazardous waste. Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. It is the responsibility of the generator to fully characterize for toxicity and other RCRA parameters prior to disposal (40 CFR 261).

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Hazard Class:	Not Applicable
Hazard Labels:	Not Applicable
Packaging Group:	Not Applicable
DOT Special Provisions:	Not Applicable
DOT Packaging Exceptions:	Not Applicable
DOT Packaging Non Bulk:	Not Applicable

DOT Packaging Bulk: Not Applicable

Additional Information

Emergency Response Guide (ERG): Not Applicable

Other Information: None

Transport by Sea

DOT Vessel Stowage Location: Not Applicable

MFAG-No.: Not Applicable

Transport by Air

DOT Quantity Limit – Passenger Aircraft: Not Applicable

DOT Quantity Limit – Cargo Only Aircraft: Not Applicable

SECTION 15: REGULATORY INFORMATION

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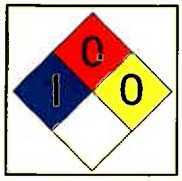
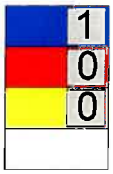


WHMIS



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SELLER MAKES NO WARRANTY. EXPRESSED OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THERE OF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY CHEM-MOD LLC.

Attachment I
Equipment Units Table

Attachment I

Emission Units Table

(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
LUC-1		Limestone Unloading Crane	2007		Existing	PE
LSH-1		Limestone Surge Hopper	2007		Existing	WS
LBF-1		Weigh Belt Feeder 1	2007		Existing	WS
LBF-2		Weigh Belt Feeder 2	2007		Existing	WS
L-1		Limestone Receiving and Stacker Conveyor	2007		Existing	FE
TC-1		Limestone Pile Telescopic Chute	2007		Existing	WS
LSP		Limestone Storage Pile	2007		Existing	
RPF-1A		Limestone Reclaim Rotary Plow Feeder	2007		Existing	Underground
RPF-1B		Limestone Reclaim Rotary Plow Feeder	2007		Existing	Underground
L-2		Limestone Reclaim Conveyor	2007		Existing	Underground
L-3A		Limestone Transfer Conveyor	2007		Existing	Underground
GTT-2		Gypsum/Limestone Transfer Tower (shared)	2007		Existing	WS/FE
L-3B		Limestone Transfer Conveyor	2007		Existing	WS/FE
LTT-1		Limestone Transfer Tower	2007		Existing	WS/FE
L-4		Limestone Transfer Conveyor	2007		Existing	WS/FE
LDG-1		Limestone Diverter Gate	2007		Existing	PE
DC-1		Limestone Day Silo 1	2007		Existing	Bin Vent Filter
DC-2		Limestone Day Silo 2	2007		Existing	Bin Vent Filter
BM-1		Ball Mill 1	2007		Existing	WS
BM-2		Ball Mill 2	2007		Existing	WS
VBF-1		Gypsum Vacuum Belt Filter 1	2007		Existing	PE
VBF-2		Gypsum Vacuum Belt Filter 2	2007		Existing	PE
VBF-3		Gypsum Vacuum Belt Filter 3	2007		Existing	PE
G-1A		Gypsum Conveyor	2007		Existing	FE

G-1B		Gypsum Conveyor	2007		Existing	FE
G-2A		Gypsum Conveyor	2007		Existing	FE
G-2B		Gypsum Conveyor	2007		Existing	FE
G-3		Gypsum Stackout Conveyor	2007		Existing	FE
GPC		Gypsum Pipe Conveyor	2007		Existing	FE
GTT-3		Gypsum Transfer Tower	2007		Existing	FE
G-4		Gypsum Stackout Conveyor	2007		Existing	FE
GSP		Gypsum Storage Pile	2007		Existing	N/A
RC 3100	1E	Pug Mill Mixer	2016	1,000 TPH	New	FE
RC 3200	2E	S-Sorb Day Bin	2016	15 tons	New	Bin Vent Filter/FE
RC 3500	3E	MerSorb Storage Tank	2016	4,400 gallons	New	FE
RC 3700	4E	MerSorb Day Storage Tank	2016	405 gallons	New	FE
RC 8200	5E	S-Sorb Storage Silo	2016	150 tons	New	Bin Vent Filter
RC 8300	6E	S-Sorb Storage Silo	2016	150 tons	New	Bin Vent Filter
PHaul	PHaul	Existing Paved Facility Roadways	N/A	N/A	Existing	Water Truck

[1] For Emission Units (or Sources) use the following numbering system:1S, 2S, 3S,... or other appropriate designation.
[2] For Emission Points use the following numbering system:1E, 2E, 3E, ... or other appropriate designation.
[3] New, modification, removal
[4] For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.

Attachment J
Emission Points Data Summary Sheet

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. *(Must match Emission Units Table & Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions [4]		Maximum Potential Controlled Emissions [5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used [6]	Emission Concentration [7] (ppmv or mg/m^4)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
2E	Downward Vent	RC 3200	S-Sorb Day Bin	Bin Vent 3230	Passive Bin Vent MAC 39AVSC25		450	$PM/PM_{10}/PM_{2.5}$	25.7	5.8	0.021	0.005	solid	EE	0.002 gr/ft^3
5E	Downward Vent	RC 8200	S-Sorb Storage Silo	Bin Vent 8230	Passive Bin Vent C&W CP-LPR-8-S		327	$PM/PM_{10}/PM_{2.5}$	16.1	2.6	0.0026	0.0004	solid	EE	0.00025 gr/ft^3
6E	Downward Vent	RC 8300	S-Sorb Storage Silo	Bin Vent 8330	Passive Bin Vent C&W CP-LPR-8-S		327	$PM/PM_{10}/PM_{2.5}$	16.1	2.6	0.0026	0.0004	solid	EE	0.00025 gr/ft^3

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

[1] Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

[2] Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (i.e.15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).

[3] List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. **LIST** Acids, CO, CS_2, VOCs, H_2S, Inorganics, Lead, Organics, O_3, NO, NO_2, SO_2, SO_3, all applicable Greenhouse Gases (including CO_2 and methane), etc. **DO NOT LIST** H_2, H_2O, N_2, O_2, and Noble Gases.

[4] Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[5] Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[6] Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

[7] Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m^3) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO_2, use units of ppmv (See 45CSR10).

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 2: Release Parameter Data

Emission Point ID No. *(Must match Emission Units Table)*	Inner Diameter (ft.)	Exit Gas			Emission Point Elevation (ft)		UTM Coordinates (km)	
		Temp. (°F)	Volumetric Flow[1] (acfm) *(at operating conditions)*	Velocity (fps)	Ground Level *(Height above mean sea level)*	Stack Height[2] *(Release height of emissions above ground level)*	Northing	Easting
2E	0.837	Ambient	1200	36.67	811	40	4396.180	591.920
5E	0.814	Ambient	750	24.04	811	60	4396.180	591.920
6E	0.814	Ambient	750	24.04	811	60	4396.180	591.920

[1] Give at operating conditions. Include inerts.
[2] Release height of emissions above ground level.

Attachment K
Fugitive Emissions Data Summary

Attachment K

FUGITIVE EMISSIONS DATA SUMMARY SHEET

The FUGITIVE EMISSIONS SUMMARY SHEET provides a summation of fugitive emissions. Fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. Note that uncaptured process emissions are not typically considered to be fugitive, and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET.

Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions).

APPLICATION FORMS CHECKLIST - FUGITIVE EMISSIONS
1.) Will there be haul road activities? ☒ Yes ☐ No ☒ If YES, then complete the HAUL ROAD EMISSIONS UNIT DATA SHEET.
2.) Will there be Storage Piles? ☐ Yes ☒ No ☐ If YES, complete Table 1 of the NONMETALLIC MINERALS PROCESSING EMISSIONS UNIT DATA SHEET.
3.) Will there be Liquid Loading/Unloading Operations? ☒ Yes ☐ No ☐ If YES, complete the BULK LIQUID TRANSFER OPERATIONS EMISSIONS UNIT DATA SHEET.
4.) Will there be emissions of air pollutants from Wastewater Treatment Evaporation? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
5.) Will there be Equipment Leaks (e.g. leaks from pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, cooling towers, etc.)? ☐ Yes ☒ No ☐ If YES, complete the LEAK SOURCE DATA SHEET section of the CHEMICAL PROCESSES EMISSIONS UNIT DATA SHEET.
6.) Will there be General Clean-up VOC Operations? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
7.) Will there be any other activities that generate fugitive emissions? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET or the most appropriate form.
If you answered "NO" to all of the items above, it is not necessary to complete the following table, "Fugitive Emissions Summary."

FUGITIVE EMISSIONS SUMMARY	All Regulated Pollutants - Chemical Name/CAS [1]	Maximum Potential Uncontrolled Emissions [2]		Maximum Potential Controlled Emissions [3]		Est. Method Used [4]
		lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions Paved Haul Roads	PM PM_{10} $PM_{2.5}$	0.22 0.044 0.011	0.32 0.064 0.016	0.044 0.009 0.002	0.09 0.013 0.003	O, AP-42
Unpaved Haul Roads	N/A					
Storage Pile Emissions	N/A					
Loading/Unloading Operations (all transfer points)	N/A					
Wastewater Treatment Evaporation & Operations	N/A					
Equipment Leaks	N/A					
General Clean-up VOC Emissions	N/A					
Other	N/A					

[1] List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS_2, VOCs, H_2S, Inorganics, Lead, Organics, O_3, NO, NO_2, SO_2, SO_3, all applicable Greenhouse Gases (including CO_2 and methane), etc. DO NOT LIST H_2, H_2O, N_2, O_2, and Noble Gases.

[2] Give rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[3] Give rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[4] Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

Attachment N
Supporting Emission Calculations

Fugitive Road Dust Emissions Estimates
Refined Coal Product Deliveries
Fort Martin Power Station

Truck Traffic Summary

- 540 deliveries/year (S-Sorb) + 21 deliveries/year (MerSorb) = 561 trucks/year
- 3,200 gallons/truck (liquid MerSorb); 25 tons/truck (solid S-Sorb)
- Total truck weight fully loaded = 40 tons
- Maximum coal feed rate of 1,000 TPH
- Design Application rates of MerSorb (0.0120%); S-Sorb (0.3500%)

Total Annual Vehicle Miles Traveled (VMT)

One-way paved roadways distance from guard gate to unloading area = 0.152 miles (800 feet)
Total VMT = (0.152 miles) x (2 trips) x (561 trucks) = 171 miles/year

Emission Factor Calculations

EPA AP-42 - Chapter 13 for Paved Roads (Section 13.2.1.3)

$EF = k \times (sL)^{0.91} \times (W)^{1.02}$

Where: k = 0.011 lb/VMT (PM/TSP)
k = 0.0022 lb/VMT (PM_{10})
k= 0.00054 lb/VMT ($PM_{2.5}$)
sL = silt loading = 9.7 g/m^2
W = vehicle weight = 40 tons

EF (PM) = $(0.011) \times (9.7)^{0.91} \times (40)^{1.02}$ = (0.011) x (7.906) x (43.063) = ***3.75 lbs/VMT***
EF (PM_{10}) = $(0.0022) \times (9.7)^{0.91} \times (40)^{1.02}$ = (0.0022) x (7.906) x (43.063) = ***0.75 lb/VMT***
EF ($PM_{2.5}$) = $(0.00054) \times (9.7)^{0.91} \times (40)^{1.02}$ = (0.00054) x (7.906) x (43.063) = ***0.184 lb/VMT***

Emissions Estimates

(Assume truck travel operations of 8 hrs/day, 365 days/yr for lb/hr estimates)

PM Annual PTE (uncontrolled) = (3.75 lb/VMT) x (171 VMT) = 641.3 pounds = 0.32 ton/yr
PM Hourly PTE (uncontrolled) = (0.32 ton) x (2,000 lbs/ton) / (2,920 hrs) = 0.22 lb/hr

PM_{10} Annual PTE (uncontrolled) = (0.75 lb/VMT) x (171 VMT) = 128.3 pounds = 0.064 ton/yr
PM_{10} Hourly PTE (uncontrolled) = (0.064 ton) x (2,000 lbs/ton) / (2,920 hrs) = 0.044 lb/hr

$PM_{2.5}$ Annual PTE (uncontrolled) = (0.184 lb/VMT) x (171 VMT) = 31.5 pounds = 0.016 ton/yr
$PM_{2.5}$ Hourly PTE (uncontrolled) = (0.016 ton) x (2,000 lbs/ton) / (2,920 hrs) = 0.011 lb/hr

(Assume control efficiency of 80% for water spray dust suppression on paved facility roadways)

PM Annual PTE (controlled) = 0.32 ton/yr x (1-0.80) = **0.09 ton/yr**
PM Hourly PTE (controlled) = 0.22 lb/hr x (1-0.80) = **0.044 lb/hr**

PM_{10} Annual PTE (controlled) = 0.064 ton/yr x (1-0.80) = **0.013 ton/yr**
PM_{10} Hourly PTE (controlled) = 0.044 lb/hr x (1-0.80) = **0.009 lb/hr**

$PM_{2.5}$ Annual PTE (controlled) = 0.016 ton/yr x (1-0.80) = **0.003 ton/yr**
$PM_{2.5}$ Hourly PTE (controlled) = 0.011 lb/hr x (1-0.80) = **0.002 lb/hr**

Attachment P
Public Notice
Class II Legal AD

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that the Monongahela Power Company has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Class II Administrative Update to R13-2711A and Title V Administrative Amendment to R30-06100001-2015 for a Refined Coal System for pollution control to be located at the Fort Martin Power Station in the town of Maidsville in Monongalia County, West Virginia. The latitude and longitude coordinates are: UTM Northing (KM) 4396.180, UTM Easting (KM) 591.920, and UTM Zone 30.

The applicant estimates that the increased potential to discharge the following Regulated Air Pollutants will be: PM = 0.09 tons per year; PM10 = 0.013 tons per year; and PM2.5 = 0.003 tons per year.

Startup of the operation of the Refined Coal System is scheduled to begin on or about the 15th day of June, 2016. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, West Virginia, 25304, for a period of at least thirty (30) calendar days from the date of publication of this notice.

Any questions regarding this permit application may be directed to the WVDEP Division of Air Quality at (304) 926-0499, extension 1250, during normal business hours.

Dated this the 5th Day of February 2016.

Monongahela Power Company
By: Daniel L. Coldren
Its: Director, Fort Martin Station
Fort Martin Road
Maidsville, WV 26541-0247

Attachment M
Air Pollution Control Device Sheet

O Collectors

Round Silo Dust Collectors

GENERATION 2.0

General Information

STEEL

C&W's "O Collectors" (Round Silo Dust Collectors) offer you Pulse-Jet technology and our cartridge filters to provide an efficient yet inexpensive solution for dust control. These collectors are compact and user-friendly with a low-profile and POP in-out filter media exchange, with no tools or need to remove blow pipes. They can also expand to higher capacities without having to replace the units.

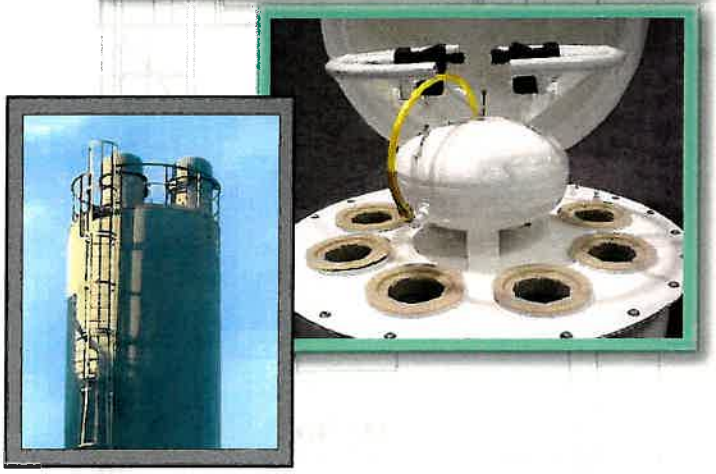
Options

- Automatic On/Off Flow Switch
- Minihelic Gauge
- Special Adaptable Mounting Flange
- Air Tank Auto-Drain
- Silo Anti-Overfill System
- Pressure Relief Valves and Bin Indicators

Specs

Specifications	LPR-4-S	LPR-6-S	LPR-8-S
Total Filtration Area (sq. ft.)	178	267	356
Number of Cartridges	4	6	8
Cartridge Size	8" x 39"	8" x 39"	8" x 39"
Overall Height - Steel*	72"	72"	72"
Flange Diameter	44" o.d.	44" o.d.	44" o.d.
Approx. Weight (lbs.) - Steel *	670	695	720
Compressed Air Required	3	3	3
CFM Recommended**	1,170	1,760	2,340
Min. Design Efficiency***	99.99%	99.99%	99.99%
Cleaning Mechanism	Pulse Jet	Pulse Jet	Pulse Jet

*Includes Mounting Flange change CFM recommended
** CFM shown for typical application. Unique application may
***Using Standard Test Conditions



C&W Manufacturing and Sales Co.
1-800-880-DUST
www.cwmfg.com

C&W Environmental Solutions

Air Vent Square Cartridge (AVSC) Filter

Standard Specifications

- 12 gauge carbon or 304 stainless steel construction*
- Rated to 17" w.c. static pressure
- Full welded exterior
- Skip welded interior
- 36 cartridge units and larger have reinforced housing and tubesheet
- Broke lip flange on top plenum and housing
- Timing board enclosures: NEMA 4
- Lifting lugs: Two on top plenum
- Service door:
  - Units with 18" long bags have an 18" x 15" tall bolted inspection panel
  - Units with bags longer than 18" have an 18" wide hinged (to left side)T-handle style inspection door
- 60° hopper flanged to housing (Style III only)
- MAC white paint

*stainless steel includes housing, hopper and tubesheet with all carbon steel flanges and reinforced ribs

The MAC Air Vent Square Cartridge (**AVSC**) filters offer the same advantages as MAC's AVS filter but contain POLIPLEET® Cartridges rather than bags and cages.

POLIPLEET® Cartridges are thermally stable with the same permeability and burst strength as a felt bag. The pleated cartridge design offers two to three times more cloth area than a comparable sized unit equipped with felt bags.

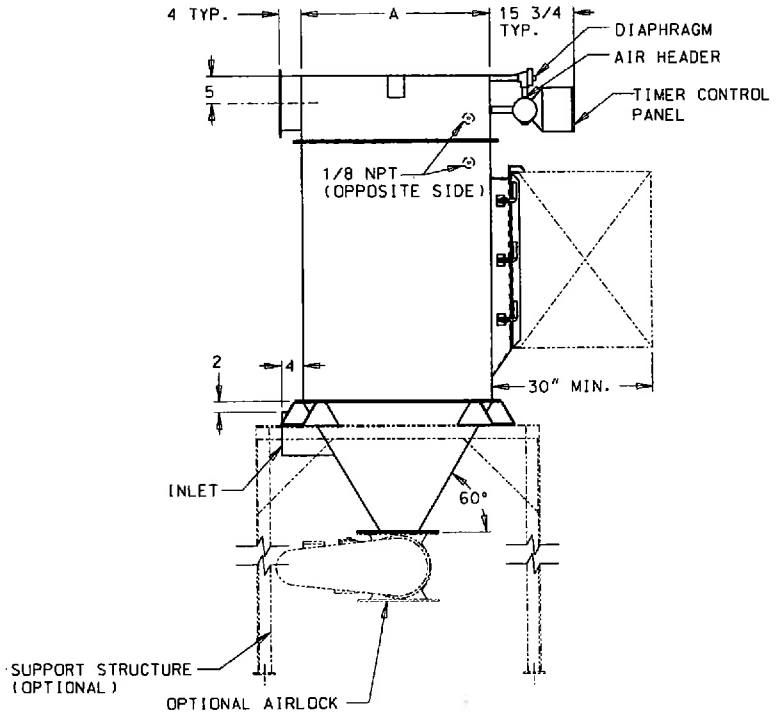
Increased savings on valuable floor space and lower head-room restrictions make the pleated design ideal where space is a problem. Most product applications allow the pleated cartridges to be washed and returned to the filter for additional use.

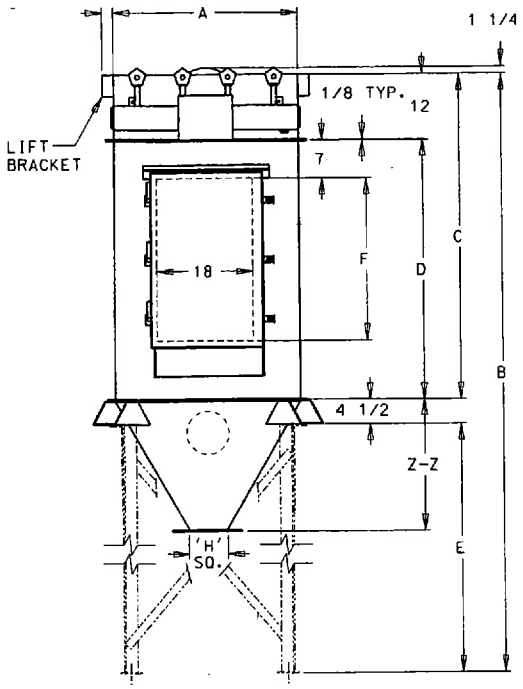
MAC offers this filter in two styles: without the hopper (Style II) the filter is ideally suited as a bin vent filter for storage tanks, work bins and surge hoppers. With a 60Þ hopper (Style III) the filter receives dust through the hopper inlet and discharges the collected dust through an airlock for dust disposal or recycling.

Options

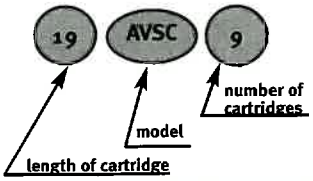
- Pressure differential gauge kit
- 316 stainless steel
- 10 gauge carbon steel construction
- Rated to 20" static pressure
- High entry inlet with bag protectors
- 70° hopper slope
- Aluminum Venturi
- NEMA 7 or 9 timer enclosure
- Exhaust weather hood with birdscreen
- Carbon steel service platform with ladder and safety cage
- Pneumatic noise reducers in solenoids
- Flanged air inlet
- Mount pads
- Side mounted or top mounted fans (restrictions exist - please contact your MAC Sales Representative)
- 4x4 mesh grate
- Support structures

Related Products
Cartridges
page 2-54





For ZZ Dimensions refer to page 2-4.



Each AVSC filter comes with an informational model number to better identify it.

MODEL	FILTER AREA	NO. OF CARTRIDGES	Dimensions (IN.) A	B	C	D	E	F	G	MAX. A/L	SCFM	WEIGHT LBS.
19AVSC9	153	9	26	82 5/8	40 1/8	28	38	20	10 DIA.	MD 40	3.6	370
39AVSC9	324	9	26	102 5/8	60 1/8	48	38	30	10 DIA.	MD 40	3.6	525
19AVSC16	273	16	34 1/2	90 5/8	40 1/8	28	46	20	10 DIA.	MD 40	5.0	540
39AVSC16	576	16	34 1/2	110 5/8	60 1/8	48	46	30	10 DIA.	MD 40	5.0	735
19AVSC25	427	25	43	98 5/8	40 1/8	28	54	20	10 DIA.	MD 40	5.8	730
39AVSC25	900	25	43	118 5/8	60 1/8	48	54	30	10 DIA.	MD 40	5.8	975
39AVSC36	1296	36	51 1/2	126 5/8	60 1/8	48	62	30	10 X 20	MD 40	7.3	1260
39AVSC49	1764	49	60	134 5/8	60 1/8	48	70	30	10 X 36	MD 75	8.5	1510
39AVSC64	2304	64	68 1/2	142 5/8	60 1/8	48	78	30	10 X 36	MD 139	10.9	1890

MAC Equipment Inc.
P.O. Box 205 • Sabetha, KS 66534
888.821.2476 sales • 877.821.7378 service • www.macequipment.com

Air Permit Work Sheet for MAC AVSC Dust Collector

Dust Collector Model No.	39AVSC25			
Type of Collector	SILO			
Cleaning Mechanism	pulse jet w/ adjustable timer			
Fan Included	No			
Fan Power	n/a	hp		
Collector Flow Rate-max rating	2,500	acfm		
Filter Material	Spun Bond polyester			
Filter Efficiency	99.92			
Filter Media Max Pressure Drop	8	in H_2O		
Total Area of Filter Media	900	sqft		
Nominal Filter Diameter	6	in		
Nominal Filter Length	3.25	ft		
Quantity of Filters	25			
Number of Compartments	1			
Number of Filters per Compartment	25			
Filtering Velocity	1.33	acfm / ft2 of		
Application Flow Rate	1200	acfm		
Type of Particulate Controlled	LIME &CEMENT KILN DUST			
Name of Source(s) or Equipment being Controlled	SILO			
	inlet		outlet	
Particulate Grain Loading	2.5E+00	grains / scf	2.00E-03	grains / scf
Outlet Area	0.55	ft2		
Outlet Velocity	36.67	ft / s		

C&W Manufacturing & Sales Co.
P.O. Box 908 • Crowley, TX 76036
817.783.5000 tel • 817.783.2353 fax info@cwmfg.com • www.cwmfg.com

Air Permit Work Sheet for C&W Dust Collector

Dust Collector Model No.	CP-LPR-8-S			
Type of Collector	SILO			
Cleaning Mechanism	pulse jet w/ adjustable timer			
Fan Included	n			
Fan Power	na	hp		
Collector Flow Rate-max rating	2,340	acfm		
Filter Material	Spun Bond polyester			
Filter Efficiency	99.99			
Filter Media Max Pressure Drop	12	in h2o		
Total Area of Filter Media	356	sqft		
Nominal Filter Diameter	8	in		
Nominal Filter Length	3.25	ft		
Quantity of Filters	8			
Number of Compartments	1			
Number of Filters per Compartment	8			
Filtering Velocity	2.11	acfm / ft2 of		
Application Flow Rate	750	acfm		
Type of Particulate Controlled	LIME &CEMENT KILN DUST			
Name of Source(s) or Equipment being Controlled	SILO			
	inlet		outlet	
Particulate Grain Loading	2.5E+00	grains / scf	2.50E-04	grains / scf
Outlet Area	0.52	ft2		
Outlet Velocity	24.04	ft / s		

Attachment S
Title V Revision Information
Suggested Title V Draft Permit Language (Attachment S1)

Attachment S

Title V Permit Revision Information

1. New Applicable Requirements Summary

Mark all applicable requirements associated with the changes involved with this permit revision:

☐ SIP	☐ FIP
☒ Minor source NSR (45CSR13)	☐ PSD (45CSR14)
☐ NESHAP (45CSR15)	☐ Nonattainment NSR (45CSR19)
☐ Section 111 NSPS (Subpart(s)_____)	☐ Section 112(d) MACT standards (Subpart(s)_____)
☐ Section 112(g) Case-by-case MACT	☐ 112(r) RMP
☐ Section 112(i) Early reduction of HAP	☐ Consumer/commercial prod. reqts., section 183(e)
☐ Section 129 Standards/Reqts.	☐ Stratospheric ozone (Title VI)
☐ Tank vessel reqt., section 183(f)	☐ Emissions cap 45CSR§30-2.6.1
☐ NAAQS, increments or visibility (temp. sources)	☐ 45CSR27 State enforceable only rule
☐ 45CSR4 State enforceable only rule	☐ Acid Rain (Title IV, 45CSR33)
☐ Emissions Trading and Banking (45CSR28)	☐ Compliance Assurance Monitoring (40CFR64) [1]
☐ NO_x Budget Trading Program Non-EGUs (45CSR1)	☐ NO_x Budget Trading Program EGUs (45CSR26)

[1] If this box is checked, please include **Compliance Assurance Monitoring (CAM) Form(s)** for each Pollutants Specific Emission Unit (PSEU) (See Attachment H to Title V Application). If this box is not checked, please explain why **Compliance Assurance Monitoring** is not applicable:

N/A

2. Non Applicability Determinations

List all requirements, which the source has determined not applicable to this permit revision and for which a permit shield is requested. The listing shall also include the rule citation and a rationale for the determination.

N/A

☐ **Permit Shield Requested** *(not applicable to Minor Modifications)*

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

3. Suggested Title V Draft Permit Language

Are there any changes involved with this Title V Permit revision outside of the scope of the NSR Permit revision? ☒ Yes ☐ No If Yes, describe the changes below.

Also, please provide **Suggested Title V Draft Permit language** for the proposed Title V Permit revision (including all applicable requirements associated with the permit revision and any associated monitoring /recordkeeping/ reporting requirements), OR attach a marked up pages of current Title V Permit. Please include appropriate citations (Permit or Consent Order number, condition number and/or rule citation (e.g. 45CSR§7-4.1)) for those requirements being added / revised.

Please refer to Attachment S1 for the suggested Title V language

4. Active NSR Permits/Permit Determinations/Consent Orders Associated With This Permit Revision

Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
Title V R30-06100001-2015	**11/02/2015**	
R13-2711A	**11/14/2007**	
	/ /	

5. Inactive NSR Permits/Obsolete Permit or Consent Orders Conditions Associated With This Revision

Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
	MM/DD/YYYY	
	/ /	
	/ /	

6. Change in Potential Emissions

Pollutant	Change in Potential Emissions (+ or -), TPY
PM	**+0.09 TPY**
PM_{10}	**+0.013 TPY**
$PM_{2.5}$	**+0.003 TPY**

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

7. Certification For Use Of Minor Modification Procedures *(Required Only for Minor Modification Requests)*

Note: *This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete. The criteria for allowing the use of Minor Modification Procedures are as follows:*

i. Proposed changes do not violate any applicable requirement;

ii. Proposed changes do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;

iii. Proposed changes do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient air quality impacts, or a visibility increment analysis;

iv. Proposed changes do not seek to establish or change a permit term or condition for which there is no underlying applicable requirement and which permit or condition has been used to avoid an applicable requirement to which the source would otherwise be subject (synthetic minor). Such terms and conditions include, but are not limited to a federally enforceable emissions cap used to avoid classification as a modification under any provision of Title I or any alternative emissions limit approved pursuant to regulations promulgated under § 112(j)(5) of the Clean Air Act;

v. Proposed changes do not involve preconstruction review under Title I of the Clean Air Act or 45CSR14 and 45CSR19;

vi. Proposed changes are not required under any rule of the Director to be processed as a significant modification;

Notwithstanding subparagraph 45CSR§30-6.5.a.1.A. (items i through vi above), minor permit modification procedures may be used for permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that such minor permit modification procedures are explicitly provided for in rules of the Director which are approved by the U.S. EPA as a part of the State Implementation Plan under the Clean Air Act, or which may be otherwise provided for in the Title V operating permit issued under 45CSR30.

Pursuant to 45CSR§30-6.5.a.2.C., the proposed modification contained herein meets the criteria for use of Minor permit modification procedures as set forth in Section 45CSR§30-6.5.a.1.A. The use of Minor permit modification procedures are hereby requested for processing of this application.

(Signed): Daniel L. Coldren *(Please use blue ink)* Date: 01 / 26 / 2016 *(Please use blue ink)*

Named (typed): **Daniel L. Coldren** Title: **Director, Fort Martin Plant**

Note: Please check if the following included (if applicable):

☐	Compliance Assurance Monitoring Form(s)
☒	Suggested Title V Draft Permit Language (Attachment S1)

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

FORT MARTIN POWER STATION

REFINED COAL PROJECT APPLICATION

ATTACHMENT S1

Title V Draft Permit Language

In accordance with Item #3 of Attachment S of the Refined Coal Project Class II Administrative Update application, the following suggestions are made for updating the existing Title V Permit R30-06100001-2015 to incorporate the addition of the refined coal process at Fort Martin:

Section 1.1: Emission Units

The estimated potential emissions increase of fugitive $PM/PM_{10}/PM_{2.5}$ from the installation of the Refined Coal facility comes from increased delivery truck traffic on the existing paved facility roadways (Attachment N). These emissions are captured under existing Emission Unit "PR" (paved roads) in Table 1.1 of the current Title V permit. Emissions from truck traffic are minimized using the water trucks currently in operation at the plant.

Most of the conveying and mixing equipment for the refined coal processing system will be located in fully enclosed buildings, and does not need to appear in the Title V Emission Unit equipment list. The two (2) outdoor storage silos (S-Sorb) have insignificant emission rates for $PM/PM_{10}/PM_{2.5}$ (Attachment J) and also do not need to appear in the Emissions Unit table. However, if the Department prefers documentation of the refined coal system in Section 1.0, we suggest adding the following to Table 1.4 on Page 6, after the Gypsum Storage Pile Emission Unit (GSP):

Source ID	Emission Point ID	Equipment Description	Design Capacity	Year Installed/ Modified	Pollution Control Device
RC 3100	1E	Pug Mill Mixer	1,000 TPH	2016	Full Enclosure (FE)
RC 3200	2E	S-Sorb Day Bin	15 Tons	2016	Bin Vent Filter / FE
RC 3500	3E	MerSorb Storage Tank	4,400 Gallons	2016	FE
RC 3700	4E	MerSorb Day Storage Tank	405 Gallons	2016	FE
RC 8200	5E	S-Sorb Storage Silo	150 Tons	2016	Bin Vent Filter / FE
RC 8300	6E	S-Sorb Storage Silo	150 Tons	2016	Bin Vent Filter / FE

Page 37, Section 6.0: Source-Specific Requirements For Gypsum Handling *and Refined Coal Process*

Add the phrase "and Refined Coal Process" as shown in italics above.

Page 37, Section 6.1: Limitations and Standards

Add the following conditions:

6.1.7. Delivered quantities of S-Sorb (tons) and MerSorb (gallons) for the refined coal processing system shall be delivered in accordance with the following requirements:

a. Maximum 12-month rolling total delivery of S-Sorb shall not exceed 13,500 tons.

b. Maximum 12-month rolling total delivery of MerSorb shall not exceed 67,200 gallons.

It is anticipated that these quantities will remain in effect for the life of the project; however they may be revised in order to maintain compliance with IRS regulations.

Pages 38-39, Section 6.4: Recordkeeping Requirements

6.4.3. For the refined coal processing system, the permittee shall keep records of tons of delivered quantities of S-Sorb and gallons of MerSorb, on a 12-month rolling total basis.

6.4.4. The permittee shall keep records of the hours of operation of the Refined Coal Facility, including the dates/times when the facility is not in normal operation.