

30777

Facility Name: Braddock Middle School CCB Tonnage Report – 2008

B. Applicability. If you or your company meet the definition of a generator of CCBs as defined above, you must provide the information as required below. For the purposes of this report, "you" shall hereinafter refer to the generator defined above. Please note that COMAR 26.04.10.08 requires generators of CCBs to submit an annual report to the Department concerning the disposition of the CCBs that they generated the previous year.

III. Required Information. The following information must be provided to the Department by March 1, 2009:

A. Contact information:

Facility Name: Braddock Middle School

Name of Permit Holder: _____

Facility Address: 909 Holland Street
Street

Facility Address: Cumberland MD 21502
City State Zip

County: Allegany

Contact Information (Person filing report or Environmental Manager)

Facility Telephone No.: 301-722-4968 Facility Fax No.: 301-722-4985

Contact Name: Larry Lancaster

Contact Title: Supervisor of Operations

Contact Address: 211 Market Street
Street

Contact Address: Cumberland MD 21502
City State Zip

Contact Email: larry.lancaster@acps.k12.md.us

Contact Telephone No.: 301-722-4968 Contact Fax No.: 301-722-4985

For questions on how to complete this form, please call Mr. Tariq Masood, Head of the Office of Reports and Data Management, Solid Waste Program at 410-537-3326.

ENCLOSURE

RECEIVED

B. A description of the process that generates the coal combustion byproducts, including the type of coal or other raw material that generates the coal combustion byproducts. If the space provided is insufficient, please attach additional pages:

Two (2) stoker coal boilers, firing bituminous coal, are used to provide hot water for building heat.

C. In the first Annual Report you submit, the annual volume of coal combustion byproducts generated during the last 5 calendar years, including an identification of the different types of coal combustion byproducts generated and the volume of each type generated. (Please note that in subsequent years you need only provide the information in this paragraph for the last calendar year.) If the space provided is insufficient, please attach additional pages in a similar format:

Table I: Volume of CCBs Generated for Previous 5 Years:

Reporting Year	Volume of CCB Type: Bottom Ash (ft ³)	Volume of CCB Type: N/A	Volume of CCB Type: N/A
2008	3,115.46		
2007	2,718.36		
2006	1,204.63		
2005	2,657.91		
2004	3,232.97		

Additional notes:

The volumes of CCBs generated from this facility were estimated using the quantities of coal used by the facility and the ash values from the corresponding testing reports.

D. Descriptions of any modeling or risk assessments, or both, conducted relating to the coal combustion byproducts or their use, that were performed by you or your company during the reporting year. Please attach this information to the report.

E. Copies of all laboratory reports of all chemical characterizations of the coal combustion byproducts. Please attach this information to the report.

F. In this first Annual Report you submit, a description of how you disposed of or used your coal combustion byproducts in the last 5 calendar years (Please note that in subsequent years you need only provide the information in this paragraph for the last calendar year), identifying:

(a) The types and volume of coal combustion byproducts disposed of or used (if different than described in Paragraph C above), the location of disposal, mine reclamation and use sites, and the type and volume of coal combustion byproducts disposed of or used at each site:

The coal combustion byproducts (CCBs) generated by this facility are listed in Table I.

The CCBs generated by this facility during the past five years were transported to the Phillips Coal Company blending yard located near Lonaconing, MD. The volumes of CCBs transported to this site are listed in Table I.

and (b) The different uses by type and volume of coal combustion byproducts:

If the space provided is insufficient, please attach additional pages in a similar format. . (Please note that in subsequent years you need only provide the information in Section F for the last calendar year).

G. A description of how you intend to dispose of or use coal combustion byproducts in the next 5 years, identifying:

(a) The types and volume of coal combustion byproducts intended to be disposed of or used, the location of intended disposal, mine reclamation and use sites, and the type and volume of coal combustion byproducts intended to be disposed of or used at each site:

Based on the past five calendar years of data, it is estimated that this facility will continue to generate approximately 2,600 ft³ of coal combustion products (CCBs) each year for the next five years. The CCB's generated at the facility are classified as bottom ash.

All CCB's from this facility will be transported to a CCB mine reclamation site in Allegany or Garrett County Maryland, or to the Waste Management Mountain View landfill.


and (b) The different intended uses by type and volume of coal combustion byproducts.

Bottom Ash – Approximately 0 ft³ to 2,600 ft³ per year - Mine Reclamation

Bottom Ash – Approximately 0 ft³ to 2,600 ft³ per year – Landfill Facility

If the space provided is insufficient, please attach additional pages in a similar format.

IV. Signature and Certification. An authorized official of the generator must sign the annual report, and certify as to the accuracy and completeness of the information contained in the annual report:

This is to certify that, to the best of my knowledge, the information contained in this report and any attached documents are true, accurate, and complete.		
 Signature	<u>Larry Lancaster, Supervisor of Operations</u> Name, Title, & Telephone No. (Print or Type)	<u>2/23/09</u> Date
	<u>301-722-4968</u> Name, Title, & Telephone No. (Print or Type)	
	<u>larry.lancaster@acps.k12.md.us</u> Your Email Address	

124-201-18-107

PHILLIPS COAL CO.
11 Front Street
Lonaconing, Maryland 21539
Phones
Office: 301-463-2066
Home: 301-463-5326

July 21, 2008

Coal Bids
Larry Lancaster, Supervisor of Operations
211 Market Street (Rear)
P.O. Box 1724
Cumberland, M.D. 21501-1724

COAL HILL MINING				ESSROC-MARTINSBURG & FREDERICK WK OF 6-9-08			
Date:	Moist.	Ash	Vol.	Sulfur	BTU	Coke	Lbs. Sul.
6/6/2008	4.44	22.46		3.73	11209	8.5	3.33
	Dry	23.50		3.90	11730		

3087 - C

15333 Other:

TRI-STAR MINING				#3 FRANKLIN (RAW) JOB #434			
Date:	Moist.	Ash	Vol.	Sulfur	BTU	Coke	Lbs. Sul.
6/6/2008	2.64	13.09		1.46	12957	9	1.12
	Dry	13.46		1.50	13308		

3088 - C

15376 Other:

TRI-STAR MINING				WAYNESBURG (RAW) JOB #419			
Date:	Moist.	Ash	Vol.	Sulfur	BTU	Coke	Lbs. Sul.
6/6/2008	17.37	12.79		0.67	9354	0.5	0.72
	Dry	15.47		0.81	11321		

3089 - C

13394 Other:

TRI-STAR MINING				REDSTONE (RAW) JOB #419			
Date:	Moist.	Ash	Vol.	Sulfur	BTU	Coke	Lbs. Sul.
6/6/2008	3.17	17.15		7.11	12089	9	5.88
	Dry	17.71		7.34	12484		

3090 - C

15171 Other:

TRI-STAR MINING				FRANKLIN (RAW)(PIT) JOB #434			
Date:	Moist.	Ash	Vol.	Sulfur	BTU	Coke	Lbs. Sul.
6/6/2008	2.49	10.97		2.61	13483	9	1.94
	Dry	11.24		2.68	13827		

3091 - C

15579 Other:

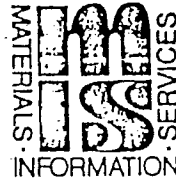
VEPCO
 2 - #4
 1 - BJ SHAK

 1/2 - #4
 1/2 - #3
 1 - CRDP

MATERIAL SAFETY DATA SHEET

CORPORATE RESEARCH & DEVELOPMENT

SCHENECTADY, N. Y. 12305



No. 491

BITUMINOUS
COAL DUST

Date _____

SECTION I. MATERIAL IDENTIFICATION					
MATERIAL NAME: BITUMINOUS COAL DUST DESCRIPTION: Includes coals between lignites and anthracites with "fixed carbon" <36%, "volatile matter" >14% "calorific value" >10,500 BTU/lb (see ASTM D388 & D3172). Particulate <75 μm (thru No. 200 sieve), dispersable in air, is of primary interest. Coal consists of conjugated poly(aromatic/unsaturated/saturated) ring structures with hetrocycles containing O,N, and S. $C_{102}H_{78}O_{10}N_2$ has been suggested as a "coal molecule". SOURCE: Mining, handling, and pulverizing processes with coal.					
SECTION II. INGREDIENTS AND HAZARDS				HAZARD DATA.	
"Proximate Analysis" of some air-dried bituminous coals:				ACGIH TLV ³ 8-hr TWA 2 mg/m ³ or OSHA PEL 2.4 mg/m ³ Respirable dust with <5% quartz*	
Source	% Moisture	% Volatiles	% Fixed Carbon		% Ash
West Virginia	1.8	20.4	72.4		5.4
Pennsylvania	1.2	34.5	58.4		5.9
Illinois	8.4	35.0	48.2		8.4
Wyoming	11.0	38.6	40.2	10.2	
Bituminous coals also contain trace metals, sulfur (0.4-3.5) and nitrogen (0.9-1.5%), depending on source and type.					
*Respirable dust is particulate <5 μm in size. Use quartz formula (MSDS #71) if quartz content is >5%.					
SECTION III. PHYSICAL DATA					
Boiling point ----- N/A Specific gravity (H ₂ O=1) - 1.3-1.6 Vapor pressure at 25 C ----- Negligible Volatiles at 25 C ----- Negligible Water solubility ----- Negligible					
Appearance & Odor: Black powder; little or no odor.					
SECTION IV. FIRE AND EXPLOSION DATA				LOWER	UPPER
Flash Point and Method	Autoignition Temp. ^{**}	Flammability Limits In Air	>0.05*		
	{cloud} >1114 F {layer} >392 F	cloud(10 μm Av.), 50mJ spark	1 oz/ft ³		
Extinguishing Media: Nitrogen, carbon dioxide, steam, water, ammonium biphosphate powder A water spray can be used to cautiously wet down coal dust to help prevent ignition (avoid raising dust). It is a fire and explosion hazard when exposed to heat or flame. Firefighters should have self-contained breathing equipment and protective clothing.					
*Ca 1 oz/ft ³ gives max. flame energy; smallest 20% of particulate determines ignition characteristics; 10-50mJ spark needed at 0-5% moisture, respectively, to initiate combustion in <200 mesh dust. **A pile of 2-7 μm Pittsburgh coal dust heated at 169 C in air can reach AIT in one hr.					
SECTION V. REACTIVITY DATA					
Coal dust is fairly stable at 25 C, but it can react with oxygen from the air, very slowly at room temperature and faster when heated. In piles with good heat retention a slow heat build-up and spontaneous ignition can occur. (Humid air can accelerate this ignition of dry coal.) On heating coal releases combustibles by devolatization and pyrolysis. When these burn, they can heat the solid carbon; hot carbon reacts with O ₂ , CO ₂ , and water vapor to produce combustible gases. Oxidation products of coal can include oxides of carbon, nitrogen and sulfur, partially oxidized hydrocarbons, soot and fly ash. This material is incompatible with strong oxidizing agents, especially when heated.					

SECTION VI. HEALTH HAZARD INFORMATION TLV 2 mg/m³ (See Sect II)

Coal workers pneumoconiosis (CWP) can occur after years of excessive exposure to respirable coal dust in the mining, handling and processing of coal. Respirable quartz particulate can be simultaneously present with the coal, especially in the mine. In general, coal dust is deposited in the lungs like quartz but requires over 10X as much for adverse effects. It does not kill macrophages; reticulin fibers form, but little collagen is generated. (That which forms is often attributed to quartz.)

The severity of CWP is directly related to the amount of coal dust in the lungs. In many CWP does not progress beyond the simple stage, which is detectable by x-ray as round and irregular "coal macules" of 1-5 mm diameter, but which does not change lung function or shorten life. CWP is a precursor of progressive massive fibrosis (PMF) resulting in large masses of fibrous tissue development (mechanisms unclear). PMF impairs pulmonary function and shortens life. There is no evidence of association of CWP and bronchogenic cancer.

Chronic bronchitis and emphysema are reported to result from excessive coal dust inhalation. Persons having rheumatoid arthritis in conjunction with simple CWP may have rapidly developing lung damage. (Caplan's Syndrome).

SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Remove ignition sources. Clean-up personnel may need dust respirators and eye protection. Coal dust should be cleaned up in manner that avoids dispersing particulate in air or into the environment.

Collect dust in a covered metal container for use as fuel or for disposal.

DISPOSAL: Use as fuel in a pulverized coal-burning furnace, or burn as slurry in water. For other incineration, possible dust explosions or "puffs" and high temperature need to be considered. Scrap coal dust may be wet down thoroughly with water in a container and buried in landfill. Follow Federal, State, and Local regulations.

SECTION VIII. SPECIAL PROTECTION INFORMATION

Provide explosion-proof general and local exhaust ventilation to meet TLV requirements. Approved filtration of exhausted air may be required to prevent excessive environmental dispersion of dust.

Where airborne dust is excessive in the workplace, dust respirators and eye protection are needed.

In working with coal dust, use good personal hygiene. Wear regularly cleaned work clothing. Showering and changing into street clothing after work may be desirable.

Follow good housekeeping procedures to control coal dust build up. Collect dust from settling areas and surfaces in a manner to avoid generating airborne dust. Design dust suppression measures into processes. Meet explosion-proof code requirements for electrical services where coal dust may be present.

SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS

Keep sources of heat and ignition, flammable materials, and strong oxidizing agents away from areas where coal dust may collect. Prevent static sparks. Inerting may be desirable, such as powdered CaCO₃ or rock dust laid down over coal dust on mine floor or a nitrogen enriched atmosphere in a coal pulverizing machine.

Reference: L.D. Smoot, et. al., "Pulverized Coal Power Plant Fires and Explosions" Parts I, II and V, Brigham Young University, Mechanical Engineering Dept., Prepared for Utah Power and Light Co., Salt Lake City, Utah 1979-1981.

DOT Classification: FLAMMABLE SOLID

HAZARD SOURCE(S) CODE: 2-4, 14, 38, 43, 47

Agencies as to the suitability of information herein for purchaser's purposes are primarily purchaser's responsibility. Therefore, although reasonable care has been taken in the preparation of such information, General Electric Company makes no warranties, makes no representations and assumes no responsibility as to the accuracy or suitability of such information for application to purchaser's intended purposes or for consequences of its use.

APPROVALS: MIS CRD *J.M. Nielsen*

Industrial Hygiene and Safety *JW 5-11-82*

MEDICAL REVIEW: 29 May 1982

MSDS 2-4-80

PH 2007-01

PHILLIPS COAL CO.
11 Front Street
Lonaconing, Maryland 21539

Phones

Office: 301-463-2066

Home: 301-463-5326

July 25, 2007

Coal Bids
Larry Lancaster, Assistant Supervisor of Operations
211 Market Street (Rear)
P.O. Box 1724
Cumberland, M.D. 21501-1724

CERTIFICATE NUMBER 7.02



STANDARD LABORATORIES, INC.
P.O. BOX 169
COLUMBIA, MD 21046

Tri Star Mining
P.O. Box 239
Barton, MD 21521

DATE: 07/07/07
STANDARD NO 1997-21069-4

SAMPLE ID: #4 (RAW)
JOB #434

OPERATING CO.: Tri Star Mining
SAMPLED BY: CUSTOMER
MINE:
LOCATION:

DATE SAMPLED: 07/06/07

DATE RECEIVED: 07/06/07


WEATHER: CLOUDY
GROSS WEIGHT: 21.3 KG
OTHER ID:

CERTIFICATE OF ANALYSIS

	ASTM METHOD	AS RECEIVED	DRY BASIS
MOISTURE	D2961	3.53 %	XXXX
ASH	D3174	16.99 %	17.61 %
SULFUR	D4239 (3.3)	3.73 %	3.87 %
BTU/LB	D5865	12382	12835
MAF BTU/LB	D3120		15578

** Analysis Material Subjected To Accelerated Drying Procedure **

FOR YOUR PROTECTION THIS DOCUMENT HAS
BEEN PRINTED ON CONTROLLED PAPER STOCK.
NOT VALID IF ALTERED.

APPROVED BY 

MATERIAL SAFETY DATA SHEET

CORPORATE RESEARCH & DEVELOPMENT

SCHENECTADY, N. Y. 12305



No. 491

BITUMINOUS
COAL DUST

Date _____

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 SOURCE: Mining, handling, and pulverizing processes with coal.

SECTION II. INGREDIENTS AND HAZARDS

"Proximate Analysis" of some air-dried bituminous coals:					HAZARD DATA
Source	% "Moisture"	% "Volatiles"	% "Fixed Carbon"	% "Ash"	ACGIH TLV 8-hr TWA 2 mg/m ³ or OSHA PEL 2.4 mg/m ³ Respirable dust with <5% quartz*
West Virginia	1.8	20.4	72.4	5.4	
Pennsylvania	1.2	34.5	58.4	5.9	
Illinois	8.4	35.0	48.2	8.4	
Wyoming	11.0	38.6	40.2	10.2	

Bituminous coals also contain trace metals, sulfur (0.4-3.5) and nitrogen (0.9-1.5%), depending on source and type.
 *Respirable dust is particulate <5 µm in size. Use quartz formula (MSDS #71) if quartz content is >5%.

SECTION III. PHYSICAL DATA

Boiling point ----- N/A Specific gravity (H₂O=1) - 1.3-1.6
 Vapor pressure at 25 C ----- Negligible Volatiles at 25 C ----- Negligible
 Water solubility ----- Negligible
 Appearance & Odor: Black powder; little or no odor.

SECTION IV. FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp. **	Flammability Limits in Air	LOWER	UPPER
	{cloud} >1114 F {flavor} >392 F	cloud(10 µm Av.), 50mJ spark	>0.05*	

Extinguishing Media: Nitrogen, carbon dioxide, steam, water, ammonium phosphate powder
 A water spray can be used to cautiously wet down coal dust to help prevent ignition (avoid raising dust). It is a fire and explosion hazard when exposed to heat or flame. Firefighters should have self-contained breathing equipment and protective clothing.
 *Ca 1 oz/ft³ gives max. flame energy; smallest 20% of particulate determines ignition characteristics; 10-50mJ spark needed at 0-5% moisture, respectively, to initiate combustion in <200 mesh dust. **A pile of 2-7 µm Pittsburgh coal dust heated at 169 C will self-ignite in one hr.

SECTION V. REACTIVITY DATA

Coal dust is fairly stable at 25 C, but it can react with oxygen from the air, very slowly at room temperature and faster when heated. In piles with good heat retention a slow heat build-up and spontaneous ignition can occur. (Humid air can accelerate this ignition of dry coal.) On heating coal releases combustibles by devolatilization and pyrolysis. When these burn, they can heat the solid carbon; hot carbon reacts with O₂, CO₂, and water vapor to produce combustible gases.
 Oxidation products of coal can include oxides of carbon, nitrogen and sulfur, partially oxidized hydrocarbons, soot and fly ash.
 This material is incompatible with strong oxidizing agents, especially when heated.

SECTION VI. HEALTH HAZARD INFORMATION

TLV 2 mg/m³ (See Sect II)

Coal workers pneumoconiosis (CWP) can occur after years of excessive exposure to respirable coal dust in the mining, handling and processing of coal. Respirable quartz particulate can be simultaneously present with the coal, especially in the mine. In general, coal dust is deposited in the lungs like quartz but requires over 10X as much for adverse effects. It does not kill macrophages; reticulin fibers form, but little collagen is generated. (That which forms is often attributed to quartz.) The severity of CWP is directly related to the amount of coal dust in the lungs. In many CWP does not progress beyond the simple stage, which is detectable by x-ray as round and irregular "coal macules" of 1-5 mm diameter, but which does not change lung function or shorten life. CWP is a precursor of progressive massive fibrosis (PMF) resulting in large masses of fibrous tissue development (mechanisms unclear). PMF impairs pulmonary function and shortens life. There is no evidence of association of CWP and bronchogenic cancer. Chronic bronchitis and emphysema are reported to result from excessive coal dust inhalation. Persons having rheumatoid arthritis in conjunction with simple CWP may have rapidly developing lung damage. (Caplan's Syndrome).

SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Remove ignition sources. Clean-up personnel may need dust respirators and eye protection. Coal dust should be cleaned up in manner that avoids dispersing particulate in air or into the environment. Collect dust in a covered metal container for use as fuel or for disposal. **DISPOSAL:** Use as fuel in a pulverized coal-burning furnace, or burn as slurry in water. For other incineration, possible dust explosions or "puffs" and high temperature need to be considered. Scrap coal dust may be wet down thoroughly with water in a container and buried in landfill. Follow Federal, State, and Local regulations.

SECTION VIII. SPECIAL PROTECTION INFORMATION

Provide explosion-proof general and local exhaust ventilation to meet TLV requirements. Improved filtration of exhausted air may be required to prevent excessive environmental dispersion of dust. Where airborne dust is excessive in the workplace, dust respirators and eye protection are needed. In working with coal dust, use good personal hygiene. Wear regularly cleaned work clothing. Showering and changing into street clothing after work may be desirable. Follow good housekeeping procedures to control coal dust build up. Collect dust from settling areas and surfaces in a manner to avoid generating airborne dust. Design dust suppression measures into processes. Meet explosion-proof code requirements for electrical services where coal dust may be present.

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Keep sources of heat and ignition, flammable materials, and strong oxidizing agents away from areas where coal dust may collect. Prevent static sparks. Inerting may be desirable, such as powdered CaCO₃ or rock dust laid down over coal dust on mine floor or a nitrogen enriched atmosphere in a coal pulverizing machine.

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APPROVALS: MIS CRD *J.M. Niles*

Industrial Hygiene and Safety

MEDICAL REVIEW: *JW 5-18-82*
 29 May 1982

MSDS 5-18-82

F4 Dec 6-07

PHILLIPS COAL CO.
11 Front Street
Lonaconing, Maryland 21539

____ Phones _____
Office 301-463-2066
Home 301-463-5326

August 12, 2006

Coal Bids
Supervisor of Plant Operations
211 Market Street (Rear)
P.O. Box 1724
Cumberland, M.D. 21501-1724

TRI-STAR MINING - #4 FRANKLIN JOB #434

DATE	MOIST.	ASH	VOL.	SULFUR	BTU	COKE	LBS.SUL.
08-11-06	2.23	16.20	0.00	3.54	12430	9	2.85
	DRY:	16.57	0.00	3.63	12714		
#6323-C					15239		

TRI-STAR MINING - #3 FRANKLIN JOB #434

DATE	MOIST.	ASH	VOL.	SULFUR	BTU	COKE	LBS.SUL.
08-11-06	2.03	10.82	0.00	1.39	13532	9	1.03
	DRY:	11.04	0.00	1.42	13813		
#6324-C					15527		

MATERIAL SAFETY DATA SHEET

CORPORATE RESEARCH & DEVELOPMENT

SCHENECTADY, N. Y. 12305



No. 491

BITUMINOUS
COAL DUST

Date

SECTION I. MATERIAL IDENTIFICATION

MATERIAL NAME: BITUMINOUS COAL DUST

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SOURCE: Mining, handling, and pulverizing processes with coal.

SECTION II. INGREDIENTS AND HAZARDS

HAZARD DATA

"Proximate Analysis" of some air-dried bituminous coals:

Source	"Moisture" %	"Volatiles" %	"Fixed Carbon" %	"Ash" %
West Virginia	1.8	20.4	72.4	5.4
Pennsylvania	1.2	34.5	58.4	5.9
Illinois	8.4	35.0	48.2	8.4
Wyoming	11.0	38.6	40.2	10.2

ACGIH TLV
8-hr TWA 2 mg/m³ or
OSHA PEL 2.4 mg/m³

Respirable dust with
<5% quartz*

Bituminous coals also contain trace metals, sulfur (0.4-3.5) and nitrogen (0.9-1.5%), depending on source and type.

*Respirable dust is particulate <5 μm in size. Use quartz formula (MSDS #71) if quartz content is >5%.

SECTION III. PHYSICAL DATA

Boiling point ----- N/A Specific gravity (H₂O=1) - 1.3-1.6
Vapor pressure at 25 C ----- Negligible Volatiles at 25 C ----- Negligible
Water solubility ----- Negligible

Appearance & Odor: Black powder; little or no odor.

SECTION IV. FIRE AND EXPLOSION DATA

LOWER UPPER

Flash Point and Method	Autoignition Temp.**	Flammability Limits In Air	>0.05*
	(cloud) >1114 F (layer) >392 F	cloud(10 μm Av.), 50mJ spark	1 oz/ft ³

Extinguishing Media: Nitrogen, carbon dioxide, steam, water, ammonium biphosphate powder
A water spray can be used to cautiously wet down coal dust to help prevent ignition (avoid raising dust). It is a fire and explosion hazard when exposed to heat or flame. Firefighters should have self-contained breathing equipment and protective clothing.

*Ca 1 oz/ft³ gives max. flame energy; smallest 20% of particulate determines ignition characteristics; 10-50mJ spark needed at 0-5% moisture, respectively, to initiate combustion in <200 mesh dust. **A pile of 2-7 μm Pittsburgh coal dust heated at 169 C in air can reach AIT in one hr.

SECTION V. REACTIVITY DATA

Coal dust is fairly stable at 25 C, but it can react with oxygen from the air, very slowly at room temperature and faster when heated. In piles with good heat retention a slow heat build-up and spontaneous ignition can occur. (Humid air can accelerate this ignition of dry coal.) On heating coal releases combustibles by devolatilization and pyrolysis. When these burn, they can heat the solid carbon; hot carbon reacts with O₂, CO₂, and water vapor to produce combustible gases.

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SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS

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 Classification: FLAMMABLE SOLID

DATE SOURCE(S) CODE: 2-4, 14, 38, 43, 47

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APPROVALS: MIS CRD *J.M. Nielsen*
 Industrial Hygiene and Safety *JW 5/11/82*
 MEDICAL REVIEW: 29 May 1982

MSDS #491

F4 2005-06

PHILLIPS COAL CO.
11 Front Street
Lonaconing, Maryland 21539

Phones _____
Office 301-463-2066
Home 301-463-5326

August 8, 2005

Coals Bids
Supervisor of Plant Operations
211 Market Street (Rear)
P.O. Box 1724
Cumberland, M.D. 21501-1724

APPROVED BY _____

GOULD ENERGY DIVISION
11600 MEXICO FARMS RD. SE
CUMBERLAND, MD 21502

DATE: 07/16/05

STANDARD NO 1997-15411-1

TRI-STAR MINING, INC.
P.O. BOX 339
BARTON, MD 21521

SAMPLE ID: AES PITT

OPERATING CO.: TRI-STAR MINING, INC.
SAMPLED BY: CUSTOMER
MINE:
LOCATION: BARTON MD

DATE SAMPLED: 07/16/05

DATE RECEIVED: 07/16/05

WEATHER: CLEAR
GROSS WEIGHT: 19.52 KG
OTHER ID:

CERTIFICATE OF ANALYSIS

		AS RECEIVED	DRY BASIS
MOISTURE	D2961	5.40 %	XXXX
ASH	D3174	12.83 %	13.56 %
SULFUR	D4239 (3.3)	2.35 %	2.48 %
BTU/LB	D5865	12738	13465
MAF BTU/LB	D3180		15577

FY 2004-05

PHILLIPS COAL CO.

11 Front Street
Lonaconing, Maryland 21539

_____ Phones _____

Office 301-463-2066

Home 301-463-5326

August 13.2004

Coal Bids

Supervisor of Plant Operations

211 Market St. (Rear)

P.O. Box 1724

Cumberland, M.D. 21501-1724

For how
301-777-7595
GOULD ENERGY DIVISION
11600 MEXICO FARMS RD. SE
CUMBERLAND, MD 21502

TRI-STAR MINING, INC.
P.O. BOX 339
BARTON, MD 21521

#4 FRANK

SAMPLE ID: AES RAW

DATE: 07/14/04
STANDARD NO 1997-14273-1

Jim. Perceina
Summit Labs

814-634-0485
25⁰³-26⁰³

OPERATING CO.: TRI-STAR MINING, INC.
SAMPLED BY: CUSTOMER
MINE:
LOCATION: BARTON, MD.
DATE SAMPLED: 07/13/04
WEATHER: SUNNY
GROSS WEIGHT: 17.66 KG
OTHER ID:

DATE RECEIVED: 07/14/04

CERTIFICATE OF ANALYSIS

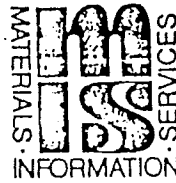
		AS RECEIVED	DRY BASIS
MOISTURE	D2961	1.55 %	XXXX
ASH	D3174	13.95 %	14.17 %
SULFUR	D4239 (3.3)	2.86 %	2.91 %
BTU/LB	D1989	13178	13385
MAF BTU/LB	D3180		15595

APPROVED BY JA

MATERIAL SAFETY DATA SHEET

CORPORATE RESEARCH & DEVELOPMENT

SCHENECTADY, N. Y. 12305



No. 491

BITUMINOUS
COAL DUST

Date

SECTION I. MATERIAL IDENTIFICATION

MATERIAL NAME: BITUMINOUS COAL DUST
DESCRIPTION: Includes coals between lignites and anthracites with "fixed carbon" <86%, "volatile matter" >14% "calorific value" >10,500 BTU/lb (see ASTM D388 & D3172). Particulate <75 μm (thru No. 200 sieve), dispersible in air, is of primary interest. Coal consists of conjugated poly(aromatic/unsaturated/saturated) ring structures with heterocycles containing O, N, and S. C₁₀₂H₇₈O₁₀N₂ has been suggested as a "coal molecule".
SOURCE: Mining, handling, and pulverizing processes with coal.

SECTION II. INGREDIENTS AND HAZARDS

"Proximate Analysis" of some air-dried bituminous coals:					HAZARD DATA
Source	% "Moisture"	% "Volatiles"	% "Fixed Carbon"	% "Ash"	
West Virginia	1.8	20.4	72.4	5.4	<u>ACGIH TLV</u> ³ 8-hr TWA 2 mg/m ³ or OSHA PEL 2.4 mg/m ³ Respirable dust with <5% quartz*
Pennsylvania	1.2	34.5	58.4	5.9	
Illinois	8.4	35.0	48.2	8.4	
Wyoming	11.0	38.6	40.2	10.2	

Bituminous coals also contain trace metals, sulfur (0.4-3.5) and nitrogen (0.9-1.5%), depending on source and type.
 *Respirable dust is particulate <5 μm in size. Use quartz formula (MSDS #71) if quartz content is >5%.

SECTION III. PHYSICAL DATA

Boiling point ----- N/A Specific gravity (H₂O=1) - 1.3-1.6
 Vapor pressure at 25 C ----- Negligible Volatiles at 25 C ----- Negligible
 Water solubility ----- Negligible

 Appearance & Odor: Black powder; little or no odor.

SECTION IV. FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp.	Flammability Limits In Air	LOWER	UPPER
	{cloud} >1114 F {layer} >392 F	{cloud(10 μm Av.), 50mJ spark	>0.05*	1 oz/ft ³

Extinguishing Media: Nitrogen, carbon dioxide, steam, water, ammonium biphosphate powder
 A water spray can be used to cautiously wet down coal dust to help prevent ignition (avoid raising dust). It is a fire and explosion hazard when exposed to heat or flame. Firefighters should have self-contained breathing equipment and protective clothing.
 *Ca 1 oz/ft³ gives max. flame energy; smallest 20% of particulate determines ignition characteristics; 10-50mJ spark needed at 0-5% moisture, respectively, to initiate combustion in <200 mesh dust. **A pile of 2-7 μm Pittsburgh coal dust heated at 169 C in air can reach AIT in one hr.

SECTION V. REACTIVITY DATA

Coal dust is fairly stable at 25 C, but it can react with oxygen from the air, very slowly at room temperature and faster when heated. In piles with good heat retention a slow heat build-up and spontaneous ignition can occur. (Humid air can accelerate this ignition of dry coal.) On heating coal releases combustibles by devolatilization and pyrolysis. When these burn, they can heat the solid carbon; hot carbon reacts with O₂, CO₂, and water vapor to produce combustible gases. Oxidation products of coal can include oxides of carbon, nitrogen and sulfur, partially oxidized hydrocarbons, soot and fly ash.
 This material is incompatible with strong oxidizing agents, especially when heated.

SECTION VI. HEALTH HAZARD INFORMATION

TLV 2 mg/m³ (See Sect II)

Coal workers pneumoconiosis (CWP) can occur after years of excessive exposure to respirable coal dust in the mining, handling and processing of coal. Respirable quartz particulate can be simultaneously present with the coal, especially in the mine. In general, coal dust is deposited in the lungs like quartz but requires over 10X as much for adverse effects. It does not kill macrophages; reticulin fibers form, but little collagen is generated. (That which forms is often attributed to quartz.) The severity of CWP is directly related to the amount of coal dust in the lungs. In many CWP does not progress beyond the simple stage, which is detectable by x-ray as round and irregular "coal macules" of 1-5 mm diameter, but which does not change lung function or shorten life. CWP is a precursor of progressive massive fibrosis (PMF) resulting in large masses of fibrous tissue development (mechanisms unclear). PMF impairs pulmonary function and shortens life. There is no evidence of association of CWP and bronchogenic cancer. Chronic bronchitis and emphysema are reported to result from excessive coal dust inhalation. Persons having rheumatoid arthritis in conjunction with simple CWP may have rapidly developing lung damage. (Caplan's Syndrome).

SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Remove ignition sources. Clean-up personnel may need dust respirators and eye protection. Coal dust should be cleaned up in manner that avoids dispersing particulate in air or into the environment.

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Classification: FLAMMABLE SOLID

HAZARD SOURCE(S) CODE: 2-4, 14, 38, 43, 47

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APPROVALS: MIS
CRD

Industrial Hygiene
and Safety

MEDICAL REVIEW: 29 May 1982

PHILLIPS COAL CO.

11 Front Street
Lonaconing, Maryland 21539

____ Phones ____

Office 301-463-2066

Home 301-463-5326

August 13, 2003

Coal Bids
Supervisor of Plant Operations
340 Frederick Street
P.O. Box 1724
Cumberland, M.D. 21501-1724

TRI-STAR MINING - BIG VEIN SHAKER JOB #16							
DATE	MOIST.	ASH	VOL.	SULFUR	BTU	COKE	LBS. SUL.
07-03-03	5.47	30.82	0.00	0.78	9281	1	0.84
	DRY:	32.61	0.00	0.83	9819		
#5930-C					14570		

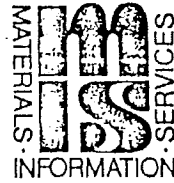
TRI-STAR MINING - LITTLE PITTSBURGH (RAW) JOB #434							
DATE	MOIST.	ASH	VOL.	SULFUR	BTU	COKE	LBS. SUL.
07-03-03	6.90	12.43	0.00	1.00	11589	1	0.87
	DRY:	13.35	0.00	1.08	12448		
#5931-C					14366		

TRI-STAR MINING - FRANKLIN #4 (RAW) JOB #429							
DATE	MOIST.	ASH	VOL.	SULFUR	BTU	COKE	LBS. SUL.
07-03-03	1.55	16.98	0.00	3.40	12599	9	2.70
	DRY:	17.25	0.00	3.45	12798		
#5932-C					15465		

MATERIAL SAFETY DATA SHEET

CORPORATE RESEARCH & DEVELOPMENT

SCHENECTADY, N. Y. 12305



No. 491

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COAL DUST

Date

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APPROVALS: MIS CRD *J.M. Nielsen*

Industrial Hygiene and Safety *JW 5-11-82*

MEDICAL REVIEW: 29 May 1982

MSDS 5-11-82