



AES Warrior Run, Inc.  
11600 Mexico Farms Road, SE  
Cumberland, MD 21502  
301-777-0055

January 31, 2013

Re: CCB Report

Mr. Edward M. Dexter, Administrator  
Solid Waste Program  
Maryland Department of the Environment  
1800 Washington Blvd.  
Baltimore, MD 21230-1719

**RECEIVED**

**FEB 5 2013**

**SOLID WASTE  
OPERATIONS DIVISION**

Mr. Dexter,

Please find the enclosed CCB report for AES Warrior Run, LLC. We have completed the report as required and included applicable attachments.

If there are any questions about this report please do not hesitate to contact us.

Regards,

A handwritten signature in black ink, appearing to read "JL", is written over a horizontal line.

Jeff Leaf  
Environmental Manager  
AES Warrior Run

# MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Suite 605 • Baltimore, Maryland 21230-1719

410-537-3315 • 800-633-6101 x3315 • [www.mde.state.md.us](http://www.mde.state.md.us)

Land Management Administration • Solid Waste Program

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SOLID WASTE  
OPERATIONS DIVISION

## Coal Combustion Byproducts (CCBs) Annual Generator Tonnage Report Instructions for Calendar Year 2012

The following is general information relating to the requirement for reporting quantities of coal combustion byproducts (CCBs) that were managed in the State of Maryland during calendar year 2012. Please answer the questions on the form provided, attaching additional information and any requested supplemental information to the back of the form. *Note that the form for this year requires both volume and weight of the CCBs produced. If you know one of these parameters but not the others, for example, you have the tonnage produced but not the volume, you may calculate the other parameter; however, please provide the calculations and assumptions that you used in your estimate.* Questions can be directed to the Solid Waste Program at (410) 537-3315 or via email at [edexter@mde.state.md.us](mailto:edexter@mde.state.md.us).

**I. Background.** This requirement that generators of CCBs submit an annual report was instituted in the Code of Maryland Regulations COMAR 26.04.10.08, that was promulgated effective December 1, 2008. The regulation requires that any non-residential generator of CCBs submit a report to the Department by March 1 of each year describing the manner in which CCBs generated within the State were managed during the preceding calendar year. Additional information and specific instructions follow. For more detailed information, please refer to COMAR 26.04.10.08.

### **II. General Information and Applicability.**

**A. Definitions.** CCBs are defined in COMAR 26.04.10.02B as:

*“(3) Coal Combustion Byproducts. (a) "Coal combustion byproducts" means the residue generated by or resulting from the burning of coal.*

*(b) "Coal combustion byproducts" includes fly ash, bottom ash, boiler slag, pozzolan, and other solid residuals removed by air pollution control devices from the flue gas and combustion chambers of coal burning furnaces and boilers, including flue gas desulfurization sludge and other solid residuals recovered from flue gas by wet or dry methods.”*

A generator of CCBs is defined in COMAR 26.04.10.02B as:

*“(9) Generator.*

*(a) "Generator" means a person whose operations, activities, processes, or actions create coal combustion byproducts.*

*(b) "Generator" does not include a person who only generates coal combustion byproducts by burning coal at a private residence.”*

Facility Name: AES Warrior Run

## CCB Tonnage Report – 2012

**B. Applicability.** If you or your company meets 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. **THIS INCLUDES CCBS THAT WERE NOT SEPARATELY COLLECTED BUT WERE PRODUCED BY THE BURNING OF COAL AND WERE DIRECTLY CONTRIBUTED TO A PRODUCT, such as cement.** Where the amount cannot be directly measured, estimates based on the amount of coal burned can be used. The method of determining the volume of CCBs produced must be described.

**III. Required Information.** The following information must be provided to the Department by March 1, 2013:

A. Contact information:

Facility Name: AES Warrior Run

Name of Permit Holder: AES Warrior Run LLC

Facility Address: 11600 Mexico Farms RD SE  
Street

Facility Address: Cumberland Maryland 21502  
City State Zip

County: Allegany

Contact Information (Person filing report or Environmental Manager)

Facility Telephone No.: 301-777-0055 Facility Fax No.: 301-777-8772

Contact Name: Jeff Leaf

Contact Title: Environmental Manager

Contact Address: 11600 Mexico Farms RD SE  
Street

Contact Address: Cumberland Maryland 21502  
City State Zip

Contact Email: jeff.leaf@aes.com

Contact Telephone No.: 301-777-0055 ext.1167 Contact Fax No.: 301-777-8772

*For questions on how to complete this form, please contact the Solid Waste Program at 410-537-3315*

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

AES Warrior Run (AES) is an electric co-generation facility located at 11600 Mexico Farms Road, S.E in Cumberland in Allegany County in Maryland. The Facility operates a 180-megawatt coal-fired steam electric cogeneration plant and a 150-ton per day food grade carbon dioxide production plant. The facility consists of an ABB CE coal-fired atmospheric fluidized bed combustion boiler (AFBC) burning bituminous coal and Number 2 fuel oil as a start up fuel.

Selective non-catalytic reduction (SNCR) system provides supplemental control of nitrogen oxides (NOx) to the AFBC boiler design. Sulfur dioxide (SO<sub>2</sub>) emissions are controlled by the introduction of limestone into the fluidized bed of the boiler. A bag house controls particulate emissions in the boiler flue gas.

Bed ash is removed at the bottom of the boiler and is loaded into a silo for eventual removal. Fly ash is removed at the bottom of the baghouse, air heater, and boiler backpass sections and is kept segregated from the bed ash in a separate silo. Both flyash and bed ash are mixed with small amounts of service water (to control dusting) and loaded into trucks for disposal off-site.

AES commenced commercial operation on February 10, 2000, and produces electricity for distribution by the Potomac Electric Power Company. The applicable SIC Code for the facility is 4911 - Electric Services

C. The volume and weight of CCBs generated during calendar year 2012, including an identification of the different types of CCBs generated and the volume of each type generated. If the space provided is insufficient, please attach additional pages in a similar format. If converting from volume to weight or weight to volume, please provide your calculations and assumptions.

**Table I: Volume and Weight of CCBs Generated for Calendar Year 2012:** Please note the change to this table from previous years, to include both the volume and weight of the types of CCBs your facility produces.

<b>Volume and Weight of CCBs Generated for Calendar Year 2012</b>			
<b>Fly Ash</b>	<b>Bed Ash</b>	<b>Slag Ash</b>	
Type of CCB	Type of CCB	Type of CCB	Type of CCB
<b>460,822.82</b>	<b>152,712.78</b>	<b>9,082.18</b>	
Volume of CCB, in Cubic Yards	Volume of CCB, in Cubic Yards	Volume of CCB, in Cubic Yards	Volume of CCB, in Cubic Yards
<b>260,444.90</b>	<b>98,658.90</b>	<b>5439.19</b>	
Weight of CCB, in Tons	Weight of CCB, in Tons	Weight of CCB, in Tons	Weight of CCB, in Tons

Additional notes:

Slag ash consists of fly ash and bed ash as a mixture. We use the term slag ash to differentiate from the discreet fly ash and bed ash in our system.

Volumes were determined with the calculated densities of: Fly Ash = 0.57 tons/cu yd, Bed Ash = 0.65 tons/cu yd, Slag Ash = 0.60 tons/cu yd

D. Descriptions of any modeling or risk assessments, or both, conducted relating to the CCBs 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 CCBs. Please attach this information to the report.

F. A description of how you disposed of or used your CCBs in calendar year 2012, identifying:

(a) The types and volume of CCBs disposed of or used (if different than described in Paragraph C above) including any CCBs stored during the previous calendar year, the location of disposal, mine reclamation and use sites, and the type and volume of CCBs disposed of or used at each site:

<b><u>2012 Tons</u></b>	<b><u>Fly Ash</u></b>	<b><u>Bed Ash</u></b>	<b><u>Slag Ash</u></b>	<b><u>Use</u></b>
Cabin Run Mine	19605.72	8149.27	1478.47	Mine Reclamation
Carlos Coal	119053.04	41538.2	324.76	Mine Reclamation
Jackson Mountain Coal	111984.29	46052.83	3635.96	Mine Reclamation
Phillips Mine (Tipple)	9794.22	2914.6	0	Mine Reclamation
MERG (Maryland Environmental Restoration Group)	7.63	4.00	0	Reclamation Research

and (b) The different uses by type and volume of CCBs:

<u>2012 Cubic Yards</u>	<u>Fly Ash</u>	<u>Bed Ash</u>	<u>Slag Ash</u>	<u>Use</u>
Cabin Run Mine	34689.72	12583.86	2468.69	Mine Reclamation
Carlos Coal	210648.61	64142.08	542.27	Mine Reclamation
Jackson Mountain Coal	198141.39	71113.44	6071.20	Mine Reclamation
Phillips Mine (Tipple)	17329.57	4866.70	0	Mine Reclamation
MERG (Maryland Environmental Restoration Group)	13.50	6.70	0	Reclamation Research

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

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

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

SAME AS PREVIOUS YEARS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
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 \_\_\_\_\_  
 \_\_\_\_\_

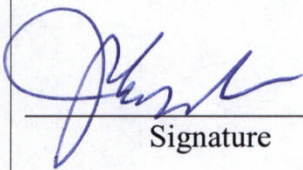
and (b) The different intended uses by type and volume of CCBs.

SAME AS PREVIOUS YEARS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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	<p style="text-align: center;">Jim Erdman Assistant Plant Manager, Vice President</p> <hr/> <p style="text-align: center;">Name, Title, &amp; Telephone No. (Print or Type)</p>  <p style="text-align: center;"><u>Jim.erdman@aes.com</u> Your Email Address</p>	<p style="text-align: center;"><u>1/30/2013</u> Date</p>
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**V: Attachments (please list):**

1. Overburden Analysis Report 5/22/2012
2. Bed Ash and Fly Ash TCLP Analysis 6/1/2012





# GEOCHEMICAL TESTING

Environmental and Energy Analysis

2005 N. Center Ave.  
Somerset, PA 15501

814/443-1671  
814/445-6666  
FAX: 814/445-6729

## Overburden Analysis Report

Client AES Warrior Run

Sampled By Client

Analysis Completed 5/22/2012

Description Fly Ash and Bed Ash

Sample Number	Interval From To	Description	Soil pH 2:1	Total Sulfur %	Sulfate plus Sulfide Sulfur %	Maximum Potential Acidity (1)	Fizz Rating (3)	Neutra- lization Potential (1)	Deficiency or Excess (1,2)
O-42648		Fly Ash Silo		0.00		0.00	2	209.65	209.65
O-42649		Bed Ash		0.00		0.00	2	293.97	293.97

Notes: (1) Tons CaCO3/1000 tons overburden.  
(2) Negative Number indicates deficiency.  
(3) Legend 0=None 1=Slight 2=Moderate 3=Strong

### Sample Preparation and Testing Techniques

All samples are top sized at 1/2". The gross samples are divided by riffing. One portion is pulverized to -60 mesh for all acid-base account testing and the other portion is saved for any further testing or examination. All preparation and testing procedures are performed according to the "Overburden Sampling and Testing Manual" as prepared for the Pennsylvania Department of Environmental Resources by Energy Center, Inc., T. Bergstresser, D. Noll, J Woodcock.

The maximum potential acidity is calculated from the sulfate plus sulfide sulfurs. Whenever the forms of sulfur are not determined, the total sulfur value is used to calculate the maximum potential acidity.

Robert L. Stull  
Director of Coal Services



# Laboratory Results

## Geochemical Testing

Date: 01-Jun-12

<b>CLIENT:</b>	AES - WARRIOR RUN INC	<b>Client Sample ID:</b>	Fly Ash Silo
<b>Lab Order:</b>	G1205960		
<b>Project:</b>		<b>Sampled By:</b>	Client
<b>Lab ID:</b>	G1205960-001	<b>Collection Date:</b>	5/11/2012
<b>Matrix:</b>	ASH	<b>Received Date:</b>	5/21/2012 1:55:00 PM

Analyses	Result	QL	Q	Units	DF	Date Analyzed
<b>FLUORINE</b>						
				<b>D 3761/EPA9056</b>		Analyst: <b>BSN</b>
Fluorine	271		10	mg/Kg-dry	1	5/24/2012 2:30:00 PM
<b>MERCURY</b>						
				<b>ASTM D6722</b>		Analyst: <b>GAL</b>
Mercury	1.3		0.010	mg/Kg-dry	1	5/21/2012 3:27:00 PM
<b>TOTAL METALS</b>						
				<b>EPA 6010</b>		Analyst: <b>MBG</b>
Aluminum	49000		5.0	mg/Kg-dry	1	5/26/2012 7:29:00 AM
Antimony	< 1.0		1.0	mg/Kg-dry	1	5/26/2012 7:29:00 AM
Arsenic	52.9		1.0	mg/Kg-dry	1	5/26/2012 7:29:00 AM
Barium	359		0.5	mg/Kg-dry	1	5/26/2012 7:29:00 AM
Beryllium	3.90		0.05	mg/Kg-dry	1	5/26/2012 7:29:00 AM
Boron	28.8		2.5	mg/Kg-dry	1	5/26/2012 7:29:00 AM
Cadmium	< 0.1		0.1	mg/Kg-dry	1	5/26/2012 7:29:00 AM
Chromium	47.2		0.5	mg/Kg-dry	1	5/26/2012 7:29:00 AM
Cobalt	17.8		0.2	mg/Kg-dry	1	5/26/2012 7:29:00 AM
Copper	42.4		0.5	mg/Kg-dry	1	5/26/2012 7:29:00 AM
Lead	26.1		1.0	mg/Kg-dry	1	5/26/2012 7:29:00 AM
Lithium	85.8		1.0	mg/Kg-dry	1	5/26/2012 7:29:00 AM
Manganese	80.3		0.5	mg/Kg-dry	1	5/26/2012 7:29:00 AM
Molybdenum	6.6		1.0	mg/Kg-dry	1	5/26/2012 7:29:00 AM
Nickel	45.0		0.5	mg/Kg-dry	1	5/26/2012 7:29:00 AM
Selenium	10.5		1.0	mg/Kg-dry	1	5/26/2012 7:29:00 AM
Silver	< 0.2		0.2	mg/Kg-dry	1	5/26/2012 7:29:00 AM
Vanadium	87.4		0.2	mg/Kg-dry	1	5/26/2012 7:29:00 AM
Zinc	83.8		0.5	mg/Kg-dry	1	5/26/2012 7:29:00 AM
<b>TCLP METALS</b>						
				<b>EPA 7470</b>		Analyst: <b>JEK</b>
Mercury	< 0.0002		0.0002	mg/L	1	5/24/2012 10:00:30 AM
<b>TCLP METALS</b>						
				<b>EPA 6010</b>		Analyst: <b>MBG</b>
Aluminum	< 0.1		0.1	mg/L	1	5/23/2012 9:43:00 PM
Antimony	< 0.02		0.02	mg/L	1	5/23/2012 9:43:00 PM
Arsenic	< 0.02		0.02	mg/L	1	5/23/2012 9:43:00 PM
Barium	1.1		0.3	mg/L	1	5/23/2012 9:43:00 PM
Beryllium	< 0.001		0.001	mg/L	1	5/23/2012 9:43:00 PM
Cadmium	< 0.002		0.002	mg/L	1	5/23/2012 9:43:00 PM
Chromium	0.16		0.01	mg/L	1	5/23/2012 9:43:00 PM
Cobalt	< 0.005		0.005	mg/L	1	5/23/2012 9:43:00 PM
Copper	< 0.01		0.01	mg/L	1	5/23/2012 9:43:00 PM
Lead	< 0.02		0.02	mg/L	1	5/23/2012 9:43:00 PM
Manganese	< 0.01		0.01	mg/L	1	5/23/2012 9:43:00 PM
Nickel	< 0.01		0.01	mg/L	1	5/23/2012 9:43:00 PM



## Laboratory Results

### Geochemical Testing

Date: 01-Jun-12

**CLIENT:** AES - WARRIOR RUN INC

**Client Sample ID:** Fly Ash Silo

**Lab Order:** G1205960

**Project:**

**Sampled By:** Client

**Lab ID:** G1205960-001

**Collection Date:** 5/11/2012

**Matrix:** ASH

**Received Date:** 5/21/2012 1:55:00 PM

Analyses	Result	QL	Q	Units	DF	Date Analyzed
<b>TCLP METALS</b>		<b>EPA 6010</b>			<b>Analyst: MBG</b>	
Selenium	0.03	0.02		mg/L	1	5/23/2012 9:43:00 PM
Silver	< 0.005	0.005		mg/L	1	5/23/2012 9:43:00 PM
Vanadium	0.014	0.005		mg/L	1	5/23/2012 9:43:00 PM
Zinc	< 0.01	0.01		mg/L	1	5/23/2012 9:43:00 PM
<b>TCLP EXTRACTION</b>		<b>EPA 1311</b>			<b>Analyst: KMG</b>	
Extraction Fluid Used	2.0	0			1	5/21/2012 5:37:00 PM
Final pH	12	1.0			1	5/21/2012 5:37:00 PM
Initial pH	12	1.0			1	5/21/2012 5:37:00 PM
pH with water	12	1.0			1	5/21/2012 5:37:00 PM
TCLP, non-volatile	NA	0			1	5/21/2012 5:37:00 PM

## Laboratory Results

### Geochemical Testing

Date: 01-Jun-12

<b>CLIENT:</b>	AES - WARRIOR RUN INC	<b>Client Sample ID:</b>	Bed Ash
<b>Lab Order:</b>	G1205960		
<b>Project:</b>		<b>Sampled By:</b>	Client
<b>Lab ID:</b>	G1205960-002	<b>Collection Date:</b>	5/11/2012
<b>Matrix:</b>	ASH	<b>Received Date:</b>	5/21/2012 1:55:00 PM

Analyses	Result	QL	Q	Units	DF	Date Analyzed
<b>FLUORINE</b>						
				<b>D 3761/EPA9056</b>		Analyst: BSN
Fluorine	76	10		mg/Kg-dry	1	5/24/2012 2:30:00 PM
<b>MERCURY</b>						
				<b>ASTM D6722</b>		Analyst: GAL
Mercury	< 0.010	0.010		mg/Kg-dry	1	5/21/2012 3:27:00 PM
<b>TOTAL METALS</b>						
				<b>EPA 6010</b>		Analyst: MBG
Aluminum	28800	5.0		mg/Kg-dry	1	5/26/2012 7:35:00 AM
Antimony	< 1.0	1.0		mg/Kg-dry	1	5/26/2012 7:35:00 AM
Arsenic	58.9	1.0		mg/Kg-dry	1	5/26/2012 7:35:00 AM
Barium	265	0.5		mg/Kg-dry	1	5/26/2012 7:35:00 AM
Beryllium	2.75	0.05		mg/Kg-dry	1	5/26/2012 7:35:00 AM
Boron	36.4	2.5		mg/Kg-dry	1	5/26/2012 7:35:00 AM
Cadmium	< 0.1	0.1		mg/Kg-dry	1	5/26/2012 7:35:00 AM
Chromium	39.1	0.5		mg/Kg-dry	1	5/26/2012 7:35:00 AM
Cobalt	13.0	0.2		mg/Kg-dry	1	5/26/2012 7:35:00 AM
Copper	26.6	0.5		mg/Kg-dry	1	5/26/2012 7:35:00 AM
Lead	10.1	1.0		mg/Kg-dry	1	5/26/2012 7:35:00 AM
Lithium	43.0	1.0		mg/Kg-dry	1	5/26/2012 7:35:00 AM
Manganese	115	0.5		mg/Kg-dry	1	5/26/2012 7:35:00 AM
Molybdenum	5.0	1.0		mg/Kg-dry	1	5/26/2012 7:35:00 AM
Nickel	30.7	0.5		mg/Kg-dry	1	5/26/2012 7:35:00 AM
Selenium	2.3	1.0		mg/Kg-dry	1	5/26/2012 7:35:00 AM
Silver	< 0.2	0.2		mg/Kg-dry	1	5/26/2012 7:35:00 AM
Vanadium	75.7	0.2		mg/Kg-dry	1	5/26/2012 7:35:00 AM
Zinc	52.8	0.5		mg/Kg-dry	1	5/26/2012 7:35:00 AM
<b>TCLP METALS</b>						
				<b>EPA 7470</b>		Analyst: JEK
Mercury	< 0.0002	0.0002		mg/L	1	5/24/2012 10:02:41 AM
<b>TCLP METALS</b>						
				<b>EPA 6010</b>		Analyst: MBG
Aluminum	< 0.1	0.1		mg/L	1	5/23/2012 9:48:00 PM
Antimony	< 0.02	0.02		mg/L	1	5/23/2012 9:48:00 PM
Arsenic	< 0.02	0.02		mg/L	1	5/23/2012 9:48:00 PM
Barium	0.5	0.3		mg/L	1	5/23/2012 9:48:00 PM
Beryllium	< 0.001	0.001		mg/L	1	5/23/2012 9:48:00 PM
Cadmium	< 0.002	0.002		mg/L	1	5/23/2012 9:48:00 PM
Chromium	< 0.01	0.01		mg/L	1	5/23/2012 9:48:00 PM
Cobalt	< 0.005	0.005		mg/L	1	5/23/2012 9:48:00 PM
Copper	< 0.01	0.01		mg/L	1	5/23/2012 9:48:00 PM
Lead	0.02	0.02		mg/L	1	5/23/2012 9:48:00 PM
Manganese	< 0.01	0.01		mg/L	1	5/23/2012 9:48:00 PM
Nickel	< 0.01	0.01		mg/L	1	5/23/2012 9:48:00 PM



## Laboratory Results

### Geochemical Testing

Date: 01-Jun-12

<b>CLIENT:</b>	AES - WARRIOR RUN INC	<b>Client Sample ID:</b>	Bed Ash
<b>Lab Order:</b>	G1205960		
<b>Project:</b>		<b>Sampled By:</b>	Client
<b>Lab ID:</b>	G1205960-002	<b>Collection Date:</b>	5/11/2012
<b>Matrix:</b>	ASH	<b>Received Date:</b>	5/21/2012 1:55:00 PM

Analyses	Result	QL	Q	Units	DF	Date Analyzed
<b>TCLP METALS</b>		<b>EPA 6010</b>			<b>Analyst: MBG</b>	
Selenium	< 0.02	0.02		mg/L	1	5/23/2012 9:48:00 PM
Silver	< 0.005	0.005		mg/L	1	5/23/2012 9:48:00 PM
Vanadium	< 0.005	0.005		mg/L	1	5/23/2012 9:48:00 PM
Zinc	< 0.01	0.01		mg/L	1	5/23/2012 9:48:00 PM
<b>TCLP EXTRACTION</b>		<b>EPA 1311</b>			<b>Analyst: KMG</b>	
Extraction Fluid Used	2.0	0			1	5/21/2012 5:37:00 PM
Final pH	12	1.0			1	5/21/2012 5:37:00 PM
Initial pH	12	1.0			1	5/21/2012 5:37:00 PM
pH with water	12	1.0			1	5/21/2012 5:37:00 PM
TCLP, non-volatile	NA	0			1	5/21/2012 5:37:00 PM

