NRG Energy
Morgantown Generating Station
12620 Crain Hwy.
Newburg, Maryland 20620

Certified Mail/Return Receipt Requested
7013 2630 0000 0437 0354

Ms. Martha Hynson
Maryland Department of the Environment
Land Management Administration
1800 Washington Boulevard, Suite 605
Baltimore MD 21230-1719

February 21, 2017

Re: 2016 CCB Tonnage Report for GenOn Mid-Atlantic, LLC's Morgantown Generating Station

Dear Ms. Hynson,

Pursuant to COMAR 26.04.10.08, enclosed please find the 2016 CCB Tonnage Report for GenOn Mid-Atlantic, LLC's Morgantown Generating Station.

If you have any questions regarding this report, please contact Debra Knight at 301-843-4670, or at debra.knight@nrg.com.

NRG Energy, Inc. (NRG) and GenOn Energy, Inc. (GenOn) merged on December 14, 2012 and retained the name NRG Energy, Inc. As a result, all GenOn entities are wholly owned subsidiaries of NRG. Although the parent corporations, NRG and GenOn, have merged, the entities have not merged or changed names.

Regards,

Thomas G. Turk
General Manager
Morgantown Generating Station

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Land Management Administration • Solid Waste Program
1800 Washington Boulevard • Suite 605 • Baltimore, Maryland 21230-1719
410-537-3315 • 800-633-6101 x3315 • www.mde.maryland.gov

Coal Combustion Byproducts (CCBs)
Annual Generator Tonnage Report
Instructions for Calendar Year 2016

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 2016. 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@maryland.gov.

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."*

08-Dec-16
TTY Users: 800-735-2258

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, 2017:

A. Contact information:

Facility Name: Morgantown Generating Station

Name of Permit Holder: GenOn Mid-Atlantic LLC

Facility Address: 12620 Crain Highway
Street

Facility Address: Newburg Maryland 20664
City State Zip

County: Charles

Contact Information (Person filing report or Environmental Manager)

Facility Telephone No.: 301-843-4670 Facility Fax No.: 301-843-4552

Contact Name: Debra Knight

Contact Title: Senior Environmental Specialist

Contact Address: 12620 Crain Highway
Street

Contact Address: Newburg Maryland 20664
City State Zip

Contact Email: debra.knight@nrg.com

Contact Telephone No.: 301-843-4670 Contact Fax No.: 301-843-4552

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:

See Attachment A.

C. The volume and weight of CCBs generated during calendar year 2016, 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 2016: 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.

Volume and Weight of CCBs Generated for Calendar Year 2016				
Flyash	Bottom Ash	On-Spec Gypsum	Off Spec Gypsum	WWTP Fines
Type of CCB	Type of CCB	Type of CCB	Type of CCB	Type of CCB
107,152	26,788	94,264	389	1,589
Volume of CCB, in Cubic Yards	Volume of CCB, in Cubic Yards	Volume of CCB, in Cubic Yards	Volume of CCB, in Cubic Yards	Volume of CCB, in Cubic Yards
107,152	26,788	184,138	760	3,105
Weight of CCB, in Tons	Weight of CCB, in Tons	Weight of CCB, in Tons	Weight of CCB, in Tons	Weight of CCB, in Tons

Additional notes:

CCB Tonnages are reported in dry short tons. CCB volumes are reported in dry Cubic Yards.
WWTP Tons represent fines from the Flue Gas Desulfurization's Waste Water Treatment
Volumes of Flyash in Dry Cubic Yards are calculated from dry short tons using a density of 1.0 Tons/Dry CY.
Volumes of Bottom Ash in Dry Cubic Yards are calculated from dry short tons using a density of 1.0 Tons/Dry CY.
Volumes of On-Spec Gypsum, Off-Spec Gypsum and WWTP Fines are calculated from dry short tons using a density of 1.95 Tons/Dry CY.

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 2016, 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:

FLYASH: A total of 107,152 tons of flyash were generated at Morgantown in 2016, and 41,377 were imported from the Chalk Point Generating Station for processing at the STAR facility. 40 tons were stored on site at the end of 2015. Of this ash, 112,667 tons were sold to SEFA (headquartered in Columbia, SC) for beneficial use as cementitious material for concrete and concrete products in Maryland (18,763 tons) and in five other states (93,904 tons for the other 5 states combined). In addition, the ash processed in the STAR facility was reduced in weight by a total of 13,617 tons during combustion, and 22,285 tons were stored on-site at the STAR Facility ash storage dome for future sale at the end of 2016.
BOTTOM ASH: Of the 26,788 tons of bottom ash generated in 2016 and disposed of at the Brandywine Ash Site, located in Brandywine Md.
On-Spec Gypsum: 184,138 tons of On-Spec Gypsum were generated at Morgantown in 2016, and 3,865 tons were stored on-site at the end of 2015. Of this total, 179,280 tons were transported by barge to Continental, located in Buchanan, NY for use in the manufacture of wallboard, and a total of 8,723 tons were stored on site at the end of 2016.
Off-Spec Gypsum generated in 2016 was 760 tons, all of which was disposed of at Waste Management's Amelia Landfill located in Jetersville, Va.
WWTP Fines produced in 2016 was 3,105 tons, all of which was disposed of at Waste Management's Amelia Landfill located in Jetersville, Va.

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

FlyAsh:

Volume: 112,667 tons sold,

Uses:

1)112,667 tons beneficially used as a Supplementary cementitious material for concrete and concrete products, 18,763 tons of which were used in Md., and 93,904 tons beneficially used in five other states.

On-Spec Gypsum:

Volume:179,280 tons sold

Use: Wallboard

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:

FlyAsh: Approximately 110,000 tons to be generated at Morgantown and 40,000 tons to be imported from Chalk Point Generating Station, all to be sold to SEFA, headquartered in Columbia, SC.

Bottom Ash: Anticipate 27,000 tons to be generated and disposed of at the Brandywine ash site in Prince George's County, Md. .

On-Spec Gypsum: Anticipate approximately 185,000 tons to be generated and transported by barge to Continental, located in Buchanan, NY.

Off-Spec Gypsum: Approximate 800 tons to be generated and disposed of at Waste Management's Amelia Landfill located in Jetersville, Va.

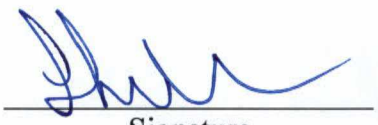
WWTP Fines: Approximately 3,100 tons to be generated and disposed of at Waste Management's Amelia Landfill located in Jetersville, Va.

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

FlyAsh:
Volume:150,000 tons to be sold
Uses: 1) All used as a Supplementary cementitious material for concrete and concrete products.

On-Spec Gypsum:
Volume:185,000 tons to be sold
Use: Wallboard

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	Thomas G. Turk, General Manager, Morgantown Generating Station 301-843-4521 Name, Title, & Telephone No. (Print or Type) Thomas.Turk@nrg.com Your Email Address	2/21/17 Date

V: Attachments (please list):

A)Morgantown Generating Station Process Description
B)Microbac Report #15J0810: Analyses of Fly Ash, Bottom Ash, Off-Spec Gypsum, and WWTP Fines

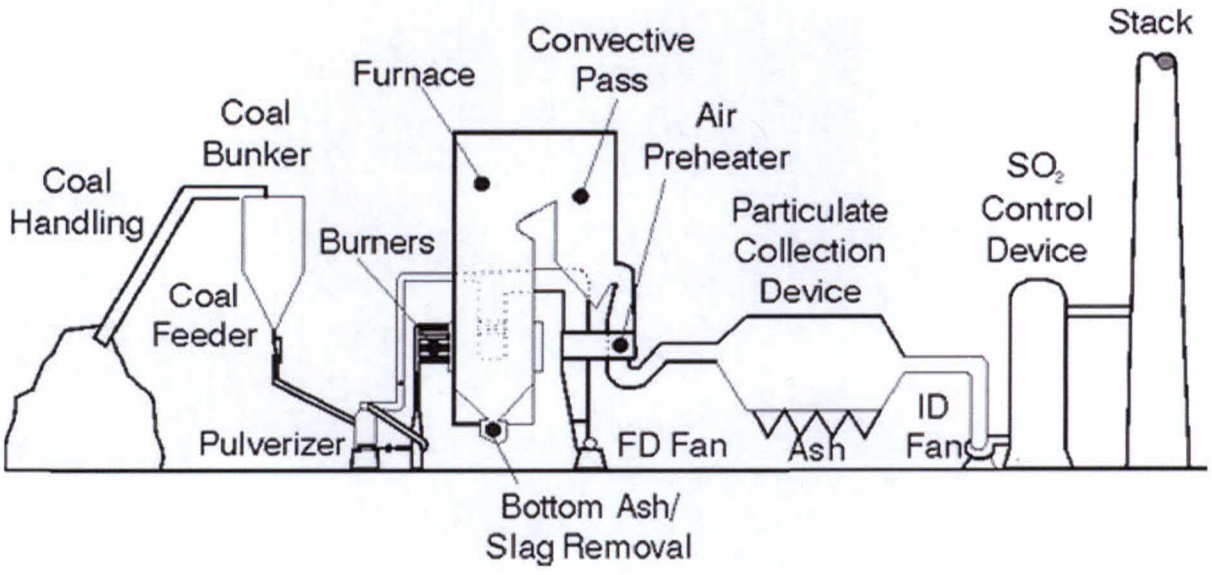
Attachment A

Morgantown Generating Station
12620 Crain Highway,
Newburg, Charles County, MD. 20664
301-843-4600

The Morgantown Generating Station is located on the Potomac River, just south of Rt. 301 at the Harry W. Nice Bridge near the town of Newburg in Charles County, MD. The facility is engaged in the generation of electrical energy for sale. The primary SIC code is 4911. There are two tangentially fired supercritical steam units each firing bituminous coal. Each unit is rated at 640 MWs (base loaded) and each is equipped with a superheater, single reheat, and economizer. Pollution control devices on both units include low NOx burners with Separated Over-Fired Air (SOFA) and Selective Catalytic Reduction (SCR) for control of oxides of nitrogen (NOx); and electrostatic precipitators (ESP) for the control of particulate matter. A Wet Scrubber (FGD) was installed and went in service on both units in late 2009. Units 1 & 2 exhausts through the scrubber stack or, when the FGD is not in service, through separate 700 ft. stacks.

Coal is currently delivered by both rail and by barge. The rail cars are emptied using a rotary dumper, then transferred by conveyor and dravo to either a storage pile or fed directly to the units' bunker. The barge unloading facility consists of a dock, an unloader, a transfer system, and a rail loading system and a rail loading facility. The barge unloading transfer and distribution system is integrated into Morgantown's existing coal handling system.

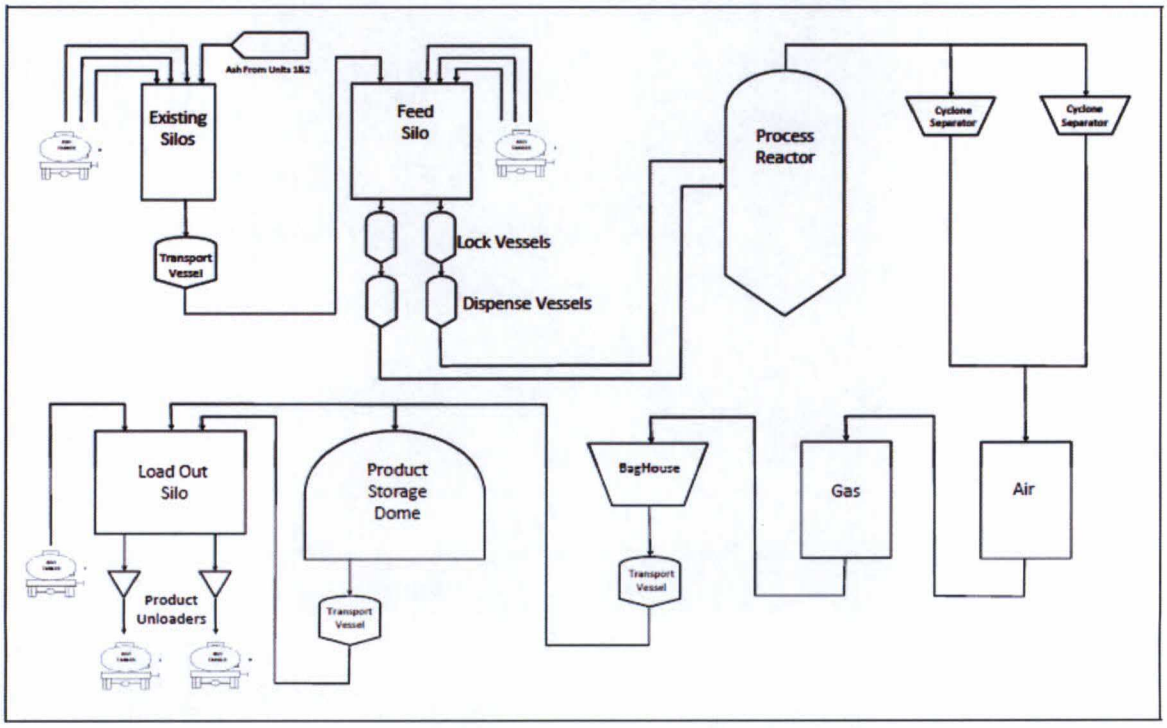
The illustration below shows a simple schematic diagram for a typical pulverized coal combustion system. The coal is prepared by grinding to a very fine consistency for combustion.



Attachment A

The CCBs currently produced and used are a result of the combustion of pulverized coal.

Ash is formed in the boiler while coal combusts. In general, pulverized coal combustion results in approximately 10% ash, of which 65%–90% is fly ash, and the remainder is coarser bottom ash. Bottom ash is a coarse material and falls to the bottom of the boiler. Fly ash is finer than bottom ash and is carried along the combustion process with flue gas. Particulate collection devices remove fly ash from the flue gas and the collected ash is transferred to one of two ash silos. Silo fly ash is either sent to the Staged Turbulent Air Reactor (STAR) facility (which is located on-site) where volatiles are burned off from the ash to make it more marketable or off-loaded for disposal at the Brandywine Ash Site located 29 miles north in Prince Georges County. Ash from the STAR facility is stored in on-site storage silos until it can be sold. A diagram of the STAR process is shown below.



The bottom ash is conveyed out of the bottom of the boiler via a drag chain conveyor. The bottom ash is then either prepared for sale, disposed of out of state, or sent to the Brandywine Ash Site, where it can be used in the construction of flyash disposal cells.

Gypsum is a byproduct of SO2 removal by the Flue Gas Desulfurization (FGD) system, commonly known as a scrubber. Morgantown uses wet scrubbers for SO2 removal. Wet scrubbing uses a slurry of limestone alkaline sorbent to remove SO2, - as well as some mercury

contaminants - from the air stream. The byproduct - gypsum - is conveyed to a storage dome temporarily and then sent via barge to Continental, New York to be made into wallboard. Gyspum that doesn't meet the specifications for wallboard production is transported for disposal to Waste Management's Amelia Landfill in Virginia. Waste Water Treatment Plant Fines (WWTP Fines) are removed from the Scrubber's WWTP as needed and transported to Waste Management's Amelia Landfill in Virginia for disposal.

MICROBAC®

Microbac Laboratories, Inc.

Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

COVER LETTER

Walter Johnson
NRG Energy - Morgantown
NRG-Ryceville, 13970 Ryceville Rd
Mechanicsville, MD 20659

RE: Morgantown-Fly Ash

March 31, 2016
Report No.: 16C0664

The report of analyses contains test results for samples received at Microbac Laboratories, Inc., Baltimore Division on 03/08/2016 14:30.

The enclosed results were obtained from and applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report has been reviewed and meet the applicable project and certification specific requirements, unless otherwise noted.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories, Inc.

We appreciate the opportunity to service your analytical needs. If you have any questions, please feel free to contact us.

This Data Package contains the following:

- This Cover Page
- Sample Summary
- Test Results
- Certifications/Notes and Definitions
- Cooler Receipt Log
- Chain of Custody

Final report reviewed by:	Kimberley M. Mack/Project Manager	3/31/2016 Report issue date

All samples received in proper condition and results conform to ISO 17025 and TNI NELAC standards unless otherwise noted.

If we have not met or exceeded your expectations, please contact Kimberley M. Mack/Project Manager at 410-633-1800. You may also contact Trevor Boyce, President at trevor.boyce@microbac.com

MICROBAC®

Microbac Laboratories, Inc.
Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

NRG Energy - Morgantown	Project: Morgantown-Fly Ash	Report: 16C0664
NRG-Ryceville, 13970 Ryceville Rd	Project Number: Morgantown-Fly Ash	Reported: 03/31/2016 13:27
Mechanicsville, MD 20659	Project Manager: Walter Johnson	

SAMPLE SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
Flyash Sample	16C0664-01	Solid	Composite	03/08/2016 08:00	03/08/2016 14:30
Bottom Ash	16C0664-02	Solid	Grab	03/08/2016 13:00	03/08/2016 14:30
Gypsum	16C0664-03	Solid	Grab	03/08/2016 13:00	03/08/2016 14:30
WWTP Filter Cake	16C0664-04	Solid	Grab	03/08/2016 09:00	03/08/2016 14:30

MICROBAC®

Microbac Laboratories, Inc.
Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

NRG Energy - Morgantown	Project: Morgantown-Fly Ash	Report: 16C0664
NRG-Ryceville, 13970 Ryceville Rd	Project Number: Morgantown-Fly Ash	Reported: 03/31/2016 13:27
Mechanicsville, MD 20659	Project Manager: Walter Johnson	

Flyash Sample

16C0664-01 (Solid) Sampled: 03/08/2016 08:00; Type: Composite

Microbac Laboratories, Inc. - Baltimore

Analyte	Result	Reporting Limit	Units	Limits	Prepared	Analyzed	Analyst	Method	Notes
Wet Chemistry									
% Solids	**100.0**	0.05	% by Weight		031016 1245	031116 0000	LCR	SM 2540 G-11	
Chloride	**12**	10	mg/kg dry		031616 1546	032116 1403	PPM	SW-846 9056A	
pH	**4.24**	0.100	pH Units		031416 1210	031416 1300	LCR	SW-846 9045D	Z10b
Sulfate as SO4	**11000**	250	mg/kg dry		031616 1546	032116 2013	PPM	SW-846 9056A	
Mercury, Total by EPA 7000 Series Methods									
Mercury	**0.30**	0.025	mg/kg dry		030916 0958	031016 1240	ANC	EPA 7471A	
Metals, Total by EPA 6000/7000 Series Methods									
Aluminum	**24600**	92.6	mg/kg dry		031616 1650	032216 1735	PBK	EPA 6020	
Antimony	ND	4.63	mg/kg dry		031616 1650	032216 1542	PBK	EPA 6020	
Arsenic	**85.9**	4.63	mg/kg dry		031616 1650	032216 1542	PBK	EPA 6020	
Barium	**225**	0.926	mg/kg dry		031616 1650	032216 1542	PBK	EPA 6020	
Beryllium	**3.98**	0.926	mg/kg dry		031616 1650	032816 1004	PBK	EPA 6020	
Boron	**305**	4.63	mg/kg dry		031616 1650	032816 1004	PBK	EPA 6020	
Cadmium	ND	0.926	mg/kg dry		031616 1650	032216 1542	PBK	EPA 6020	
Calcium	**15600**	926	mg/kg dry		031616 1650	032216 1735	PBK	EPA 6020	
Chromium	**60.8**	4.63	mg/kg dry		031616 1650	032216 1542	PBK	EPA 6020	
Cobalt	**16.0**	0.926	mg/kg dry		031616 1650	032216 1542	PBK	EPA 6020	
Copper	**35.8**	4.63	mg/kg dry		031616 1650	032216 1542	PBK	EPA 6020	
Lead	**23.3**	0.926	mg/kg dry		031616 1650	032216 1542	PBK	EPA 6020	
Magnesium	**1430**	9.26	mg/kg dry		031616 1650	032816 1004	PBK	EPA 6020	
Manganese	**76.5**	0.926	mg/kg dry		031616 1650	032216 1542	PBK	EPA 6020	
Molybdenum	**9.75**	4.63	mg/kg dry		031616 1650	032216 1542	PBK	EPA 6020	
Nickel	**43.7**	0.926	mg/kg dry		031616 1650	032216 1542	PBK	EPA 6020	
Potassium	**2240**	46.3	mg/kg dry		031616 1650	032216 1542	PBK	EPA 6020	
Silver	ND	0.926	mg/kg dry		031616 1650	032216 1542	PBK	EPA 6020	

Microbac Laboratories, Inc. - Baltimore

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kimberley Mack

Kimberley M. Mack, Project Manager

Original Report

MICROBAC®

Microbac Laboratories, Inc.
Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

NRG Energy - Morgantown	Project: Morgantown-Fly Ash	Report: 16C0664
NRG-Ryceville, 13970 Ryceville Rd	Project Number: Morgantown-Fly Ash	Reported: 03/31/2016 13:27
Mechanicsville, MD 20659	Project Manager: Walter Johnson	

Flyash Sample

16C0664-01 (Solid) Sampled: 03/08/2016 08:00; Type: Composite

Analyte	Result	Reporting Limit	Units	Limits	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc. - Baltimore									
Metals, Total by EPA 6000/7000 Series Methods									
Sodium	**1260**	46.3	mg/kg dry		031616 1650	032816 1004	PBK	EPA 6020	
Thallium	**2.53**	0.926	mg/kg dry		031616 1650	032216 1542	PBK	EPA 6020	
Vanadium	**126**	18.5	mg/kg dry		031616 1650	032216 1542	PBK	EPA 6020	
Zinc	**58.9**	9.26	mg/kg dry		031616 1650	032216 1542	PBK	EPA 6020	
TCLP Extraction by EPA 1311									
TCLP Extraction	**COMPLETED**		N/A		031416 1826	031516 1248	TRB	EPA 1311	
TCLP Metals by 6000/7000 Series Methods									
Arsenic	ND	0.20	mg/L	5.0	031516 1618	031716 1545	APS	EPA 6010B	
Barium	ND	0.50	mg/L	100	031516 1618	031716 1545	APS	EPA 6010B	
Cadmium	ND	0.20	mg/L	1.0	031516 1618	031716 1545	APS	EPA 6010B	
Chromium	ND	0.20	mg/L	5.0	031516 1618	031716 1545	APS	EPA 6010B	
Lead	ND	0.20	mg/L	5.0	031516 1618	031716 1545	APS	EPA 6010B	
Mercury	ND	0.0020	mg/L	0.20	031616 0938	031616 1356	ANC	EPA 7470A	
Selenium	ND	0.20	mg/L	1.0	031516 1618	031716 1545	APS	EPA 6010B	
Silver	ND	0.20	mg/L	5.0	031516 1618	031716 1545	APS	EPA 6010B	
Microbac Laboratories, Inc. - Chicagoland									
Metals									
Iron	**66000**	230	mg/Kg		032516 0732	032916 1744	PJB	SW-846 6010C	
Lithium	ND	460	mg/Kg		032516 0732	032916 1744	PJB	SW-846 6010C	
Lithium	**29**	4.6	mg/Kg		032516 0732	032916 1738	PJB	SW-846 6010C	
Wet Chemistry									
Sulfur (from SO4)	**1300**	330	mg/Kg		031716 0932	031816 0346	TMG	ASTM D129 MOD	

Microbac Laboratories, Inc. - Baltimore

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kimberley Mack

Kimberley M. Mack, Project Manager

Original Report

MICROBAC®

Microbac Laboratories, Inc.
Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

NRG Energy - Morgantown	Project: Morgantown-Fly Ash	Report: 16C0664
NRG-Ryceville, 13970 Ryceville Rd	Project Number: Morgantown-Fly Ash	Reported: 03/31/2016 13:27
Mechanicsville, MD 20659	Project Manager: Walter Johnson	

Bottom Ash

16C0664-02 (Solid) Sampled: 03/08/2016 13:00; Type: Grab

Analyte	Result	Reporting Limit	Units	Limits	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc. - Baltimore									
Wet Chemistry									
% Solids	**100.0**	0.05	% by Weight		031016 1245	031116 0000	LCR	SM 2540 G-11	
Chloride	**8700**	100	mg/kg dry		031616 1546	032116 1427	PPM	SW-846 9056A	
pH	**6.33**	0.100	pH Units		031416 1210	031416 1300	LCR	SW-846 9045D	Z10a
Sulfate as SO4	**1100**	100	mg/kg dry		031616 1546	032116 1427	PPM	SW-846 9056A	
Mercury, Total by EPA 7000 Series Methods									
Mercury	ND	0.025	mg/kg dry		030916 0958	031016 1252	ANC	EPA 7471A	
Metals, Total by EPA 6000/7000 Series Methods									
Aluminum	**9510**	40.9	mg/kg dry		031616 1650	032216 1740	PBK	EPA 6020	
Antimony	ND	4.09	mg/kg dry		031616 1650	032216 1547	PBK	EPA 6020	
Arsenic	**4.65**	4.09	mg/kg dry		031616 1650	032216 1547	PBK	EPA 6020	
Barium	**49.4**	0.818	mg/kg dry		031616 1650	032216 1547	PBK	EPA 6020	
Beryllium	**0.989**	0.818	mg/kg dry		031616 1650	032816 1008	PBK	EPA 6020	
Boron	**39.0**	4.09	mg/kg dry		031616 1650	032816 1008	PBK	EPA 6020	B1
Cadmium	ND	0.818	mg/kg dry		031616 1650	032216 1547	PBK	EPA 6020	
Calcium	**7480**	81.8	mg/kg dry		031616 1650	032216 1547	PBK	EPA 6020	
Chromium	**10.7**	4.09	mg/kg dry		031616 1650	032216 1547	PBK	EPA 6020	
Cobalt	**5.98**	0.818	mg/kg dry		031616 1650	032216 1547	PBK	EPA 6020	
Copper	**9.60**	4.09	mg/kg dry		031616 1650	032216 1547	PBK	EPA 6020	
Lead	**1.33**	0.818	mg/kg dry		031616 1650	032216 1547	PBK	EPA 6020	
Magnesium	**424**	8.18	mg/kg dry		031616 1650	032816 1008	PBK	EPA 6020	
Manganese	**38.9**	0.818	mg/kg dry		031616 1650	032216 1547	PBK	EPA 6020	
Molybdenum	ND	4.09	mg/kg dry		031616 1650	032216 1547	PBK	EPA 6020	
Nickel	**14.8**	0.818	mg/kg dry		031616 1650	032216 1547	PBK	EPA 6020	
Potassium	**1070**	40.9	mg/kg dry		031616 1650	032216 1547	PBK	EPA 6020	
Silver	ND	0.818	mg/kg dry		031616 1650	032216 1547	PBK	EPA 6020	
Sodium	**509**	40.9	mg/kg dry		031616 1650	032816 1008	PBK	EPA 6020	

Microbac Laboratories, Inc. - Baltimore

Kimberley M. Mack, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Original Report

MICROBAC®

Microbac Laboratories, Inc.
Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

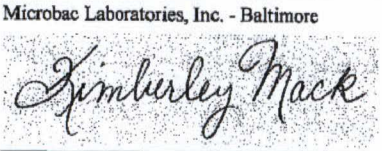
NRG Energy - Morgantown	Project: Morgantown-Fly Ash	Report: 16C0664
NRG-Ryceville, 13970 Ryceville Rd	Project Number: Morgantown-Fly Ash	Reported: 03/31/2016 13:27
Mechanicsville, MD 20659	Project Manager: Walter Johnson	

Bottom Ash

16C0664-02 (Solid) Sampled: 03/08/2016 13:00; Type: Grab

Analyte	Result	Reporting Limit	Units	Limits	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc. - Baltimore									
Metals, Total by EPA 6000/7000 Series Methods									
Thallium	ND	0.818	mg/kg dry		031616 1650	032216 1547	PBK	EPA 6020	
Vanadium	**19.9**	16.4	mg/kg dry		031616 1650	032216 1547	PBK	EPA 6020	
Zinc	**44.2**	8.18	mg/kg dry		031616 1650	032216 1547	PBK	EPA 6020	
TCLP Extraction by EPA 1311									
TCLP Extraction	**COMPLETED**		N/A		031416 1826	031516 1248	TRB	EPA 1311	
TCLP Metals by 6000/7000 Series Methods									
Arsenic	ND	0.20	mg/L	5.0	031516 1618	031716 1549	APS	EPA 6010B	
Barium	ND	0.50	mg/L	100	031516 1618	031716 1549	APS	EPA 6010B	
Cadmium	ND	0.20	mg/L	1.0	031516 1618	031716 1549	APS	EPA 6010B	
Chromium	ND	0.20	mg/L	5.0	031516 1618	031716 1549	APS	EPA 6010B	
Lead	ND	0.20	mg/L	5.0	031516 1618	031716 1549	APS	EPA 6010B	
Mercury	ND	0.0020	mg/L	0.20	031616 0938	031616 1358	ANC	EPA 7470A	
Selenium	ND	0.20	mg/L	1.0	031516 1618	031716 1549	APS	EPA 6010B	
Silver	ND	0.20	mg/L	5.0	031516 1618	031716 1549	APS	EPA 6010B	
Microbac Laboratories, Inc. - Chicagoland									
Metals									
Iron	**39000**	230	mg/Kg		032516 0732	032916 1755	PJB	SW-846 6010C	
Lithium	ND	460	mg/Kg		032516 0732	032916 1755	PJB	SW-846 6010C	
Lithium	**13**	4.6	mg/Kg		032516 0732	032916 1749	PJB	SW-846 6010C	
Wet Chemistry									
Sulfur (from SO4)	**970**	330	mg/Kg		031716 0932	031816 0348	TMG	ASTM D129 MOD	

Microbac Laboratories, Inc. - Baltimore



Kimberley M. Mack, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Original Report

MICROBAC®

Microbac Laboratories, Inc.
Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

NRG Energy - Morgantown	Project: Morgantown-Fly Ash	Report: 16C0664
NRG-Ryceville, 13970 Ryceville Rd	Project Number: Morgantown-Fly Ash	Reported: 03/31/2016 13:27
Mechanicsville, MD 20659	Project Manager: Walter Johnson	

Gypsum

16C0664-03 (Solid) Sampled: 03/08/2016 13:00; Type: Grab

Analyte	Result	Reporting Limit	Units	Limits	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc. - Baltimore									
Wet Chemistry									
% Solids	**78.75**	0.05	% by Weight		031016 1245	031116 0000	LCR	SM 2540 G-11	
Chloride	**58**	12	mg/kg dry		031616 1546	032116 1517	PPM	SW-846 9056A	
pH	**6.71**	0.100	pH Units		031416 1210	031416 1300	LCR	SW-846 9045D	Z10c
Sulfate as SO4	**25000**	620	mg/kg dry		031616 1546	032116 2037	PPM	SW-846 9056A	
Mercury, Total by EPA 7000 Series Methods									
Mercury	**0.33**	0.031	mg/kg dry		030916 0958	031016 1253	ANC	EPA 7471A	
Metals, Total by EPA 6000/7000 Series Methods									
Aluminum	**1040**	271	mg/kg dry		031616 1650	032216 1744	PBK	EPA 6020	
Antimony	ND	5.42	mg/kg dry		031616 1650	032216 1552	PBK	EPA 6020	
Arsenic	ND	5.42	mg/kg dry		031616 1650	032216 1552	PBK	EPA 6020	
Barium	**26.4**	1.08	mg/kg dry		031616 1650	032216 1552	PBK	EPA 6020	
Beryllium	ND	1.08	mg/kg dry		031616 1650	032816 1013	PBK	EPA 6020	
Boron	**9.49**	5.42	mg/kg dry		031616 1650	032816 1013	PBK	EPA 6020	B1
Cadmium	ND	1.08	mg/kg dry		031616 1650	032216 1552	PBK	EPA 6020	
Calcium	**233000**	2710	mg/kg dry		031616 1650	032216 1744	PBK	EPA 6020	
Chromium	ND	5.42	mg/kg dry		031616 1650	032216 1552	PBK	EPA 6020	
Cobalt	ND	1.08	mg/kg dry		031616 1650	032216 1552	PBK	EPA 6020	
Copper	ND	5.42	mg/kg dry		031616 1650	032216 1552	PBK	EPA 6020	
Lead	ND	1.08	mg/kg dry		031616 1650	032216 1552	PBK	EPA 6020	
Magnesium	**184**	10.8	mg/kg dry		031616 1650	032816 1013	PBK	EPA 6020	
Manganese	**3.58**	1.08	mg/kg dry		031616 1650	032216 1552	PBK	EPA 6020	
Molybdenum	ND	5.42	mg/kg dry		031616 1650	032216 1552	PBK	EPA 6020	
Nickel	**8.64**	1.08	mg/kg dry		031616 1650	032216 1552	PBK	EPA 6020	
Potassium	**96.0**	54.2	mg/kg dry		031616 1650	032216 1552	PBK	EPA 6020	
Silver	ND	1.08	mg/kg dry		031616 1650	032216 1552	PBK	EPA 6020	
Sodium	ND	54.2	mg/kg dry		031616 1650	032816 1013	PBK	EPA 6020	

Microbac Laboratories, Inc. - Baltimore

Kimberley M. Mack, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Original Report

MICROBAC®

Microbac Laboratories, Inc.
Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

NRG Energy - Morgantown	Project: Morgantown-Fly Ash	Report: 16C0664
NRG-Ryceville, 13970 Ryceville Rd	Project Number: Morgantown-Fly Ash	Reported: 03/31/2016 13:27
Mechanicsville, MD 20659	Project Manager: Walter Johnson	

Gypsum

16C0664-03 (Solid) Sampled: 03/08/2016 13:00; Type: Grab

Analyte	Result	Reporting Limit	Units	Limits	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc. - Baltimore									
Metals, Total by EPA 6000/7000 Series Methods									
Thallium	ND	1.08	mg/kg dry		031616 1650	032216 1552	PBK	EPA 6020	
Vanadium	ND	21.7	mg/kg dry		031616 1650	032216 1552	PBK	EPA 6020	
Zinc	ND	10.8	mg/kg dry		031616 1650	032216 1552	PBK	EPA 6020	B16
TCLP Extraction by EPA 1311									
TCLP Extraction	**COMPLETED**		N/A		031416 1826	031516 1248	TRB	EPA 1311	
TCLP Metals by 6000/7000 Series Methods									
Arsenic	ND	0.20	mg/L	5.0	031516 1618	031716 1553	APS	EPA 6010B	
Barium	ND	0.50	mg/L	100	031516 1618	031716 1553	APS	EPA 6010B	
Cadmium	ND	0.20	mg/L	1.0	031516 1618	031716 1553	APS	EPA 6010B	
Chromium	ND	0.20	mg/L	5.0	031516 1618	031716 1553	APS	EPA 6010B	
Lead	ND	0.20	mg/L	5.0	031516 1618	031716 1553	APS	EPA 6010B	
Mercury	ND	0.0020	mg/L	0.20	031616 0938	031616 1359	ANC	EPA 7470A	
Selenium	ND	0.20	mg/L	1.0	031516 1618	031716 1553	APS	EPA 6010B	
Silver	ND	0.20	mg/L	5.0	031516 1618	031716 1553	APS	EPA 6010B	
Microbac Laboratories, Inc. - Chicagoland									
Metals									
Iron	**750**	2.4	mg/Kg		032516 0732	032916 1800	PJB	SW-846 6010C	
Lithium	ND	4.8	mg/Kg		032516 0732	032916 1800	PJB	SW-846 6010C	
Wet Chemistry									
Sulfur (from SO4)	**3500**	320	mg/Kg		031716 0932	031816 0349	TMG	ASTM D129 MOD	

Microbac Laboratories, Inc. - Baltimore

Kimberley Mack

Kimberley M. Mack, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Original Report

MICROBAC®

Microbac Laboratories, Inc.
Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

NRG Energy - Morgantown	Project: Morgantown-Fly Ash	Report: 16C0664
NRG-Ryceville, 13970 Ryceville Rd	Project Number: Morgantown-Fly Ash	Reported: 03/31/2016 13:27
Mechanicsville, MD 20659	Project Manager: Walter Johnson	

WWTP Filter Cake

16C0664-04 (Solid) Sampled: 03/08/2016 09:00; Type: Grab

Analyte	Result	Reporting Limit	Units	Limits	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc. - Baltimore									
Wet Chemistry									
% Solids	**51.07**	0.05	% by Weight		031016 1245	031116 0000	LCR	SM 2540 G-11	
Chloride	**8600**	1800	mg/kg dry		031616 1546	032116 1554	PPM	SW-846 9056A	
pH	**9.22**	0.100	pH Units		031416 1210	031416 1300	LCR	SW-846 9045D	Z10d
Sulfate as SO4	**38000**	460	mg/kg dry		031616 1546	032116 2102	PPM	SW-846 9056A	
Mercury, Total by EPA 7000 Series Methods									
Mercury	**22**	0.48	mg/kg dry		030916 0958	031016 1313	ANC	EPA 7471A	
Metals, Total by EPA 6000/7000 Series Methods									
Aluminum	**15100**	86.9	mg/kg dry		031616 1650	032216 1749	PBK	EPA 6020	
Aluminum	**15700**	434	mg/kg dry		031616 1650	032216 1754	PBK	EPA 6020	
Antimony	ND	8.69	mg/kg dry		031616 1650	032216 1556	PBK	EPA 6020	
Arsenic	**50.2**	8.69	mg/kg dry		031616 1650	032216 1556	PBK	EPA 6020	
Barium	**542**	1.74	mg/kg dry		031616 1650	032216 1556	PBK	EPA 6020	
Beryllium	ND	1.74	mg/kg dry		031616 1650	032816 1018	PBK	EPA 6020	
Boron	**1800**	43.4	mg/kg dry		031616 1650	032816 1023	PBK	EPA 6020	
Cadmium	ND	1.74	mg/kg dry		031616 1650	032216 1556	PBK	EPA 6020	
Calcium	**173000**	4340	mg/kg dry		031616 1650	032216 1754	PBK	EPA 6020	
Chromium	**56.3**	8.69	mg/kg dry		031616 1650	032216 1556	PBK	EPA 6020	
Cobalt	**13.1**	1.74	mg/kg dry		031616 1650	032216 1556	PBK	EPA 6020	
Copper	**34.5**	8.69	mg/kg dry		031616 1650	032216 1556	PBK	EPA 6020	
Lead	**20.6**	1.74	mg/kg dry		031616 1650	032216 1556	PBK	EPA 6020	
Magnesium	**21900**	86.9	mg/kg dry		031616 1650	032816 1023	PBK	EPA 6020	
Manganese	**765**	1.74	mg/kg dry		031616 1650	032216 1556	PBK	EPA 6020	
Molybdenum	ND	8.69	mg/kg dry		031616 1650	032216 1556	PBK	EPA 6020	
Nickel	**64.8**	1.74	mg/kg dry		031616 1650	032216 1556	PBK	EPA 6020	
Potassium	**3610**	86.9	mg/kg dry		031616 1650	032216 1556	PBK	EPA 6020	
Silver	ND	1.74	mg/kg dry		031616 1650	032216 1556	PBK	EPA 6020	

Microbac Laboratories, Inc. - Baltimore

Kimberley M. Mack, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Original Report

MICROBAC®

Microbac Laboratories, Inc.
Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

NRG Energy - Morgantown	Project: Morgantown-Fly Ash	Report: 16C0664
NRG-Ryceville, 13970 Ryceville Rd	Project Number: Morgantown-Fly Ash	Reported: 03/31/2016 13:27
Mechanicsville, MD 20659	Project Manager: Walter Johnson	

WWTP Filter Cake

16C0664-04 (Solid) Sampled: 03/08/2016 09:00; Type: Grab

Analyte	Result	Reporting Limit	Units	Limits	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc. - Baltimore									
Metals, Total by EPA 6000/7000 Series Methods									
Sodium	**1320**	86.9	mg/kg dry		031616 1650	032816 1018	PBK	EPA 6020	
Thallium	ND	1.74	mg/kg dry		031616 1650	032216 1556	PBK	EPA 6020	
Vanadium	**61.5**	34.8	mg/kg dry		031616 1650	032216 1556	PBK	EPA 6020	
Zinc	**89.5**	17.4	mg/kg dry		031616 1650	032216 1556	PBK	EPA 6020	
TCLP Extraction by EPA 1311									
TCLP Extraction	**COMPLETED**		N/A		031416 1826	031516 1248	TRB	EPA 1311	
TCLP Metals by 6000/7000 Series Methods									
Arsenic	ND	0.20	mg/L	5.0	031516 1618	031716 1557	APS	EPA 6010B	
Barium	ND	0.50	mg/L	100	031516 1618	031716 1557	APS	EPA 6010B	
Cadmium	ND	0.20	mg/L	1.0	031516 1618	031716 1557	APS	EPA 6010B	
Chromium	ND	0.20	mg/L	5.0	031516 1618	031716 1557	APS	EPA 6010B	
Lead	ND	0.20	mg/L	5.0	031516 1618	031716 1557	APS	EPA 6010B	
Mercury	ND	0.0020	mg/L	0.20	031616 0938	031616 1352	ANC	EPA 7470A	
Selenium	ND	0.20	mg/L	1.0	031516 1618	031716 1557	APS	EPA 6010B	
Silver	ND	0.20	mg/L	5.0	031516 1618	031716 1557	APS	EPA 6010B	
Microbac Laboratories, Inc. - Chicagoland									
Metals									
Iron	**9000**	2.3	mg/Kg		032516 0732	032916 1805	PJB	SW-846 6010C	
Lithium	**6.6**	4.5	mg/Kg		032516 0732	032916 1805	PJB	SW-846 6010C	
Wet Chemistry									
Sulfur (from SO4)	**8600**	310	mg/Kg		031716 0932	031816 0351	TMG	ASTM D129 MOD	

Microbac Laboratories, Inc. - Baltimore

Kimberley Mack

Kimberley M. Mack, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Original Report

MICROBAC®

Microbac Laboratories, Inc.
Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

NRG Energy - Morgantown	Project: Morgantown-Fly Ash	Report: 16C0664
NRG-Ryceville, 13970 Ryceville Rd	Project Number: Morgantown-Fly Ash	Reported: 03/31/2016 13:27
Mechanicsville, MD 20659	Project Manager: Walter Johnson	

Project Requested Certification(s):

A2LA (Environmental)

Analyte Certification Exception Summary

No certification exceptions

All analysis performed were analyzed under the required certification unless otherwise noted in the above summary.

MICROBAC®

Microbac Laboratories, Inc.
Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

NRG Energy - Morgantown	Project: Morgantown-Fly Ash	Report: 16C0664
NRG-Ryceville, 13970 Ryceville Rd	Project Number: Morgantown-Fly Ash	Reported: 03/31/2016 13:27
Mechanicsville, MD 20659	Project Manager: Walter Johnson	

Certification List

Below is a list of certifications maintained by Microbac Laboratories, Inc. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. A complete list of individual analytes pursuant to each certification below is available upon request.

Code	Description	Certification Number	Expires
Microbac Laboratories, Inc. - Baltimore			
A2LA1	A2LA (Biology)	410.02	04/30/2017
A2LA2	A2LA (Environmental)	410.01	04/30/2017
CPSC	CPSC Testing of Childrens Products and Jewelry	1115	04/30/2017
Pb	Environmental Lead (ELLAP)	410.01	04/30/2017
MD	State of Maryland (Drinking Water)	109	06/30/2016
WV	West Virginia	054	09/30/2016
Microbac Laboratories, Inc. - Chicagoland			
A2LA_	A2LA ISO/IEC 17025 Biological Testing	3045.01	09/30/2016
A2LA	A2LA ISO/IEC 17025 Env. DoD Testing	3045.02	09/30/2016
CDC-ELITE	Center of Disease Control Legionella ELITE Membership		04/21/2016
ILDPH	Illinois DOPH Micro analysis of drinking water	1755266	12/31/2016
ILEPA	Illinois EPA wastewater and solid waste analysis	200064	04/01/2016
INDEM	Indiana DEM support lab wastewater and solid waste	A305-9-292	12/31/2013
INSDH	Indiana SDH chemical analysis of drinking water	C-45-03	08/14/2016
INDH	Indiana SDH Micro analysis of drinking water	M-45-8	12/31/2016
ISBOAH	Indiana State Board of Animal Health for microbiological anal	18137	05/01/2016
KSDOH	Kansas Dept Health & Env. NELAP	E-10397	05/31/2016
KYEPP	Kentucky EPPC analysis Underground Storage Tanks	75	04/01/2016
KYDEP	Kentucky Wastwater Laboratory Certification Program	90147	12/31/2016
NYDOH	New York State Department of Health Wadsworth	52733	04/01/2016
NCDEN	North Carolina DENR NPDES effluent, surface water	597	12/31/2016
PEDEP	Pennsylvania DEP Registration for Air analysis	68-04863	
PADEP	Pennsylvania Department of Environmental Protect	68-04863	07/31/2016
USDAS	USDA Permit To Receive Soil	P330-12-00174	09/18/2016
VELAP	Virginia Department of General Services Division of Consolid	7990	06/14/2016
WADOE	Washington State Department of Ecology	C992	10/23/2016
Microbac Laboratories, Inc. - Richmond			
VA-R	Commonwealth of Virginia (NELAC) - Richmond	460022	06/14/2016

Microbac Laboratories, Inc. - Baltimore

Kimberley Mack

Kimberley M. Mack, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Original Report

MICROBAC®

Microbac Laboratories, Inc.
Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

NRG Energy - Morgantown	Project: Morgantown-Fly Ash	Report: 16C0664
NRG-Ryceville, 13970 Ryceville Rd	Project Number: Morgantown-Fly Ash	Reported: 03/31/2016 13:27
Mechanicsville, MD 20659	Project Manager: Walter Johnson	

Qualifiers/Notes and Definitions

General Definitions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Analysis Qualifiers/Notes:

Microbac Laboratories, Inc. - Baltimore

Z10d	pH temperature at 22.8°C
Z10c	pH temperature at 22.0°C
Z10b	pH temperature at 20.5°C
Z10a	pH temperature at 20.4°C
B16	Target analyte detected in method blank >2.2 times the MDL but less than the reporting limit.
B1	Target analyte detected in method blank at or above reporting limit.

MICROBAC®

Microbac Laboratories, Inc.

Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

Cooler Receipt Log

Cooler ID: Default Cooler **Cooler Temp:** 3.30°C **Work Order:** 16C0664

Custody Seals Intact:	Yes	COC/Containers Agree:	Yes
Containers Intact:	Yes	Correct Preservation:	Yes
Received On Ice:	Yes	Correct Number of Containers Received:	Yes
Radiation Scan Acceptable:	Yes	Sufficient Sample Volume for Testing:	Yes
COC Present:	Yes	Samples Received in Proper Condition:	Yes

Comments:

MICROBAC

Microbac Laboratories Inc., Baltimore Division
2101 Van Deman St, Baltimore, MD 21224
Tel: 410-633-1800
Fax: 410-633-6553
www.microbac.com

Chain of Custody Record

Work Order Number:

Page 1 of 1

Instructions for completing the Chain of Custody Record on back.

Client Name: NRG Morgantown	Project	Turnaround Time	QC and EDD Type (Required)
Address: 12620 Crain Highway	Location	[ ] Standard (7 Business Days)	[ ] Level I (NAC) [ ] Level II** [ ] Level III** [ ] Level IV**
City, State, Zip: Newburg, MD 20664	PO #	[ ] RUSH* Needed By: _____	[ ] EDD Format: _____ Comments:
Contact: John Williams	Compliance Monitoring? [ ] Yes [ ] No	* Please notify lab prior to drop off.	
Telephone #: 301-843-4560	(1)Agency/Program		

Sampled by (PRINT): EHLIM Sampler Signature: [signature] Sampler Phone #: same Sampler (DW)Cert#: _____

Send Report via [ ] e-mail (address) _____ [ ] Mail [ ] Telephone [ ] Fax (fax #) _____

*** Matrix Types: Air(A), Childrens Product(CP), Food(F), Paint(P), Soil/Solid (S), Oil(O), Wipe(WI), Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (sr

Client Sample ID	Matrix***	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analysis: Chloride	Sulfate	pH (as received)	TCLP metals	Total metals	Barium	Lithium	Sulfur	Comments
Flyash sample			X		3-8-16	0800	1	X	X	X	X	X	X	X	X	
Bottom Ash		X			3-3-16	1300	1	X	X	X	X	X	X	X	X	
Gypsum		X			3-3-16	1300	1	X	X	X	X	X	X	X	X	
WWTP Filter cake		X			3-7-16	0900	1	X	X	X	X	X	X	X	X	

16C0664

Possible Hazard Identification [ ] Hazardous [ ] Non-Hazardous [ ] Radioactive Sample Disposition [ ] Dispose as appropriate [ ] Return [ ] Archive

Number of Containers:	Relinquished By (signature)	Printed Name/Affiliation	Date/Time	Received By (signature)	Printed Name/Affiliation
Cooler Number: 3.3	[signature]	Dewayne Crum	3-8-16 0800	[signature]	Ryan Shiflett 1315
Temp upon receipt(°C):	Relinquished By (signature)	Printed Name/Affiliation	Date/Time	Received By (signature)	Printed Name/Affiliation
Sample Received on Ice or Refrigerated from Client: Yes / No	[signature]	Ryan Shiflett	3/8/16 1430	[signature] 3/8	16 1430
	Relinquished By (signature)	Printed Name/Affiliation	Date/Time	Received for Lab By (signature)	Printed Name/Affiliation

501 12 11 ** Surcharge May Apply to add'l QC Packages** WHITE - ORIGINAL LAB YELLOW - RECEIPT

Cooler Receipt Form / Sample Acceptance & Noncompliance Form	**Microbac Laboratories, Inc., Baltimore Division** **Control # 606-01** **Effective Date: 01/23/15** **Page 1 of 1**

Number of Coolers Received: 1
Client: NRG Morgantown
Form Completed By: Reddick

Receipt Date / Time: 3/8/16
Work Order # 16C0097, 16C0094, 16C0095, 16C0096

Shipper: ☒ Microbac ☐ Client ☐ UPS ☐ FedEx
Custody Tape Intact: (YES) / NO / NA
Containers Intact: (YES) / NO
Sample Received on Ice or refrigerated: (YES) / NO
Infrared (IR) Temperature: 3 3 °C

Radiation Scan: ☒ Negative or _____ mR/hr
Chain of Custody Present with shipment: (YES) / NO
Sample Bottle IDs agree with COC: (YES) / NO
Preservation requirements met: (YES) / NO / Not Checked
Correct Number of Containers / Sample Volume: (YES) / NO (If No, contact client immediately)
Headspace in container: YES (NO) NA
Type of Sample: Water Soil Wipes Oil Filter Solid Sludge Food Swab Other _____

Container Type / Quantity:

A - ___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ If preserved pH <2___, pH >10___
B - ___ Unpreserved 3 H2SO4 1 HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ If preserved pH <2 Y, pH >10___
C - 4 Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ If preserved pH <2___, pH >10___
D - 4 Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ If preserved pH <2___, pH >10___
E - ___ Unpreserved 1 H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ If preserved pH <2 Y, pH >10___
H - ___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ If preserved pH <2 Y, pH >10___
K - ___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ If preserved pH <2___, pH >10___
L - ___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ If preserved pH <2___, pH >10___
M- ___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ If preserved pH <2___, pH >10___
W- ___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ If preserved pH <2___, pH >10___
V- ___ Unpreserved ___ HCl ___ HCl / Ascorbic Acid ___ HCl / NaTHIO **(Checked at time of Analysis)**
F - ___ Unpreserved ___ NaTHIO **(Checked at time of Analysis)**
S - ___ Unpreserved 1 NaTHIO **(Checked at time of Analysis)**
SN- ___ Unpreserved ___ NaTHIO 1 NaTHIO/EDTA **(Checked at time of Analysis)**

___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ If preserved pH <2___, pH >10___
___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ If preserved pH <2___, pH >10___
___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ If preserved pH <2___, pH >10___

Describe preservation requirements not met:

All Acid preserved <2 pH *NaOH preserved >12 pH* *All others >2 and <10 (usually 4-8)*

Sample ID:_____ H_2SO_4 HNO_3 NaOH _____ mls added
Sample ID:_____ H_2SO_4 HNO_3 NaOH _____ mls added
Sample ID:_____ H_2SO_4 HNO_3 NaOH _____ mls added
Sample ID:_____ H_2SO_4 HNO_3 NaOH _____ mls added

H_2SO_4 – Sulfuric Acid, HNO_3 – Nitric Acid, NaOH – Sodium Hydroxide, ASC – Ascorbic Acid, NaTHIO – Sodium Thiosulfate

Describe Anomalies:_____

Contact information / Summary of Actions:

Date / Time:_____ Contact:_____ Contact By:_____
Comments:_____

SUBCONTRACT ORDER

Microbac Baltimore Work Order:

16C0664

Microbac Laboratories, Inc. - Baltimore

SENDING LABORATORY:

Microbac Laboratories, Inc. - Baltimore
2101 Van Deman Street
Baltimore, MD 21224
Phone: 410.633.1800
Fax: 410.633.6553

RECEIVING LABORATORY:

Microbac - CGL
250 West 84th Drive
Merrillville, IN 46410
Phone :(219) 769-8378
Fax: (219) 769-1664

CERTIFICATION NEEDED:

☐ MD - Drinking Water ☐ VA - NELAC ☐ A2LA - Environmental ☐ Other _____

☐ NJ - NELAC ☐ PA - NELAC ☐ A2LA - Microbiology ☐ NONE

Project name: Morgantown-Fly Ash

Project Manager: Kimberley M. Mack

Work Order TAT: 7

Report Due : 03/17/2016 17:00

Sample ID: 16C0664-01 **Matrix: Solid** **Sampled: 03/08/2016 08:00**

Analysis	TAT	Due Date	Expires	Comments
SUB_Sulfur / ASTM D129-91	7	03/17/2016 16:00	04/05/2016 08:00	

Containers Supplied:

Sample ID: 16C0664-02 **Matrix: Solid** **Sampled: 03/08/2016 13:00**

Analysis	TAT	Due Date	Expires	Comments
SUB_Sulfur / ASTM D129-91	7	03/17/2016 16:00	04/05/2016 13:00	

Containers Supplied:

Sample ID: 16C0664-03 **Matrix: Solid** **Sampled: 03/08/2016 13:00**

Analysis	TAT	Due Date	Expires	Comments
SUB_Sulfur / ASTM D129-91	7	03/17/2016 16:00	04/05/2016 13:00	

Containers Supplied:

Sample ID: 16C0664-04 **Matrix: Solid** **Sampled: 03/08/2016 09:00**

Analysis	TAT	Due Date	Expires	Comments
SUB_Sulfur / ASTM D129-91	7	03/17/2016 16:00	04/05/2016 09:00	

Containers Supplied:

Released By	Date	Received By	Date
B Reddick	3/9/16		
Released By	Date	Received By	Date

MICROBAC®

SUBCONTRACT ORDER

Microbac Laboratories, Inc. - Baltimore

16C0664

SENDING LABORATORY:

Microbac Laboratories, Inc. - Baltimore
2101 Van Deman Street
Baltimore, MD 21224
Phone: 410.633.1800
Project Manager: Kimberley M. Mack

RECEIVING LABORATORY:

Microbac - CGL
250 West 84th Drive
Merrillville, IN 46410
Phone: (219) 769-8378

Project Info:

Project Name:	Morgantown-Fly Ash	Client Name:	NRG Energy - Morgantown		
Project No:	Morgantown-Fly Ash	Project Type:	Wastewater	Report TAT:	7
		Project Location:	Maryland (South)	Due:	03/17/2016 17:00

Sample ID: 16C0664-01 **Matrix: Solid** **Sampled: 03/08/2016 08:00**

Analysis Analytes and requested reporting limits	Method	Analysis Due	Expires
~~SUB_Sulfur~~	~~ASTM D129-91~~	~~03/17/2016 16:00~~	~~04/05/2016 08:00~~
Sulfur	0.05 % by Wei		
M_Fe_ICP	EPA 6010B	03/17/2016 16:00	09/04/2016 08:00
Iron	0.02 mg/kg		
M_Li_ICP	EPA 6010B	03/17/2016 16:00	09/04/2016 08:00
Lithium	0.01 mg/kg		

already rcvd DMA 03/22/16

Sample ID: 16C0664-02 **Matrix: Solid** **Sampled: 03/08/2016 13:00**

Analysis Analytes and requested reporting limits	Method	Analysis Due	Expires
~~SUB_Sulfur~~	~~ASTM D129-91~~	~~03/17/2016 16:00~~	~~04/05/2016 13:00~~
Sulfur	0.05 % by Wei		
M_Fe_ICP	EPA 6010B	03/17/2016 16:00	09/04/2016 13:00
Iron	0.02 mg/kg		
M_Li_ICP	EPA 6010B	03/17/2016 16:00	09/04/2016 13:00
Lithium	0.01 mg/kg		

already rcvd DMA 03/22/16

Sample ID: 16C0664-03 **Matrix: Solid** **Sampled: 03/08/2016 13:00**

Analysis Analytes and requested reporting limits	Method	Analysis Due	Expires
~~SUB_Sulfur~~	~~ASTM D129-91~~	~~03/17/2016 16:00~~	~~04/05/2016 13:00~~
Sulfur	0.05 % by Wei		
M_Fe_ICP	EPA 6010B	03/17/2016 16:00	09/04/2016 13:00
Iron	0.02 mg/kg		
M_Li_ICP	EPA 6010B	03/17/2016 16:00	09/04/2016 13:00
Lithium	0.01 mg/kg		

already rcvd DMA 03/22/16

MICROBAC®

SUBCONTRACT ORDER

Microbac Laboratories, Inc. - Baltimore

16C0664

SENDING LABORATORY:

Microbac Laboratories, Inc. - Baltimore
2101 Van Deman Street
Baltimore, MD 21224
Phone: 410.633.1800
Project Manager: Kimberley M. Mack

RECEIVING LABORATORY:

Microbac - CGL
250 West 84th Drive
Merrillville, IN 46410
Phone: (219) 769-8378

Project Info:

Client Name:	NRG Energy - Morgantown				
Project Name:	Morgantown-Fly Ash	Project Type:	Wastewater	Report TAT:	7
Project No:	Morgantown-Fly Ash	Project Location:	Maryland (South)	Due:	03/17/2016 17:00

Sample ID: 16C0664-04 **Matrix: Solid** **Sampled: 03/08/2016 09:00**

Analysis	Method	Analysis Due	Expires
Analytes and requested reporting limits			
~~SUB_Sulfur~~	~~ASTM D129-91~~	~~03/17/2016 16:00~~	~~04/05/2016 09:00~~
Sulfur	0.05 % by Wei		
M_Fe_ICP	EPA 6010B	03/17/2016 16:00	09/04/2016 09:00
Iron	0.02 mg/kg		
M_Li_ICP	EPA 6010B	03/17/2016 16:00	09/04/2016 09:00
Lithium	0.01 mg/kg		

Already rec'd 03/22/16

(4) Amber glass / unpres'd 03/22/16 1600

Released By	Date	Received By	Date
[signature] / ANDillinger	03/22/16	[signature]	
Released By	Date	Received By	Date

16C0804 Dave Bryant
Microbac - BLT
16C0664
03/10/2016

SUBCONTRACT ORDER

Microbac Laboratories, Inc. - Ba

Microbac Baltimore Work Order: 16C0664

SENDING LABORATORY:

Microbac Laboratories, Inc. - Baltimore
2101 Van Deman Street
Baltimore, MD 21224
Phone: 410.633.1800
Fax: 410.633.6553

RECEIVING LABORATORY:

Microbac - CGL
250 West 84th Drive
Merrillville, IN 46410
Phone :(219) 769-8378
Fax: (219) 769-1664

16C0604

CERTIFICATION NEEDED:

☐ MD - Drinking Water ☐ VA - NELAC ☐ A2LA - Environmental ☐ Other _____
☐ NJ - NELAC ☐ PA - NELAC ☐ A2LA - Microbiology ☐ NONE

Project name: Morgantown-Fly Ash

Project Manager: Kimberley M. Mack

Work Order TAT: 7

Report Due : 03/17/2016 17:00

Sample ID: 16C0664-01 -01 **Matrix: Solid** **Sampled: 03/08/2016 08:00**

Analysis	TAT	Due Date	Expires	Comments
SUB_Sulfur / ASTM D129-91	7	03/17/2016 16:00	04/05/2016 08:00	

Containers Supplied:

Sample ID: 16C0664-02 -02 **Matrix: Solid** **Sampled: 03/08/2016 13:00**

Analysis	TAT	Due Date	Expires	Comments
SUB_Sulfur / ASTM D129-91	7	03/17/2016 16:00	04/05/2016 13:00	

Containers Supplied:

Sample ID: 16C0664-03 -03 **Matrix: Solid** **Sampled: 03/08/2016 13:00**

Analysis	TAT	Due Date	Expires	Comments
SUB_Sulfur / ASTM D129-91	7	03/17/2016 16:00	04/05/2016 13:00	

Containers Supplied:

Sample ID: 16C0664-04 -04 **Matrix: Solid** **Sampled: 03/08/2016 09:00**

Analysis	TAT	Due Date	Expires	Comments
SUB_Sulfur / ASTM D129-91	7	03/17/2016 16:00	04/05/2016 09:00	

Containers Supplied:

Released By	Date	Received By	Date
B Reddick	3/9/16	Ashlie N. Carter	3/10/16 9:35am
Released By	Date	Received By	Date

2.7-2.3= 0.4° C OF UPS

This calculation is for the flyash generated @ Morgantown and 41,377 tons imported from Chalk Point and will be incorporated into the main calculation that includes bottom ash, on-spec gypsum, etc.

Flyash generated at Morgantown and 41,377 tons imported from Chalk Point for processing at the STAR facility in 2016

	Morgantown (tons)	Chalk Point (tons)	Total (tons)
Generated in 2016	107,152	41,377	
Stored on site in 2015	40		
Stored on site in 2016	-22,285		
Total	84,907	41,377	126,284
Percentage	67.24%	32.76%	

Combined flyash destination from Morgantown and 41,377 tons from Chalk Point

Disposition	Tons
In State Beneficial Use	18,763
Out of State Beneficial Use	93,904
Reduseced during process in the Star Facility	13,617

Using the Morgantown 67.24% to 32.76% Chalk Point the separate destination calculated

Disposition	Total (tons)	Morgantown (tons)	Chalk Point (tons)
In State Beneficial Use	18,763	12615	6148
Out of State Beneficial Use	93,904	63137	30767
Reduced during process	13,617	9155	4462