*Maryland:*
*Montgomery County*

# DICKERSON POWER PLANT COAL ASH DEPOSIT


Source: GoogleEarth, 2020. Image Date: October 2019
Dashed line shows possible fill area based on site development pattern.

**Site Name:** Dickerson Power Plant Site

**State, County, City:** Maryland, Montgomery County, Dickerson

**Site Address:** 21200 Martinsburg Rd., Dickerson, MD 20842

**Coordinates:** 39°12'41.31"N 77°27'39.96"W

**Owner:** Potomac Electric Power Co. (NRG)

**Number and Type of CCB Storage Units Onsite:** Unknown, likely one or more structural fills

**Accepted Materials:** Class F fly ash and bottom ash

**Estimated Quantity of CCBs:** Unknown

**Estimated Area:** Unknown

**Beneficial Use Projects:** None

**CCB Compliance Website:** None

**Last Update:** October 2020

DICKERSON POWER PLANT ASH DEPOSIT – LiDAR HILLSHADE


Source: Maryland Department of Information Technology,
Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on site development pattern.

**Notes**

*Site History:* Class F fly ash and bottom ash generated at the power plant were disposed of onsite between 1959 and 1973; the exact areas where ash was placed could not be determined during production of this report. From 1973 to 1981, this material was disposed of in Pennsylvania. In 1981, the Westland Coal Ash Storage site was constructed to dispose of fly ash and bottom ash from the Dickerson Power Plant (PPSP, 1982a).

*Environmental Impacts:* None available.

*Sources:* PPSP, 1982a; Maryland MERLIN Online

WESTLAND FLY ASH STORAGE SITE ASH DEPOSIT


Source: GoogleEarth, 2020. Image Date: October 2019

**Site Name:** Westland Fly Ash Storage Site

**State, County, City:** Maryland, Montgomery County, Dickerson

**Site Address**: 20831 Martinsburg Road, Dickerson, MD 20842

**Coordinates**: 39°11'30.85"N 77°27'30.87"W

**Owner:** GenOn MD Ash Management, LLC

**Number and Type of CCB Storage Units Onsite:** 1 Landfill

**Accepted Materials:** Class F fly ash and bottom ash

**Estimated Quantity of CCBs:** 3.5 million cubic yards (MDE, 2010)

**Estimated Area:** Unknown

**Beneficial Use Projects:** Recovery of CCBs for use in cement manufacture began in 2019

**CCB Compliance Website:** https://www.genon.com/ccr-rule-compliance/

**Last Update:** October 2020

WESTLAND POWER PLANT ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

**Notes:**

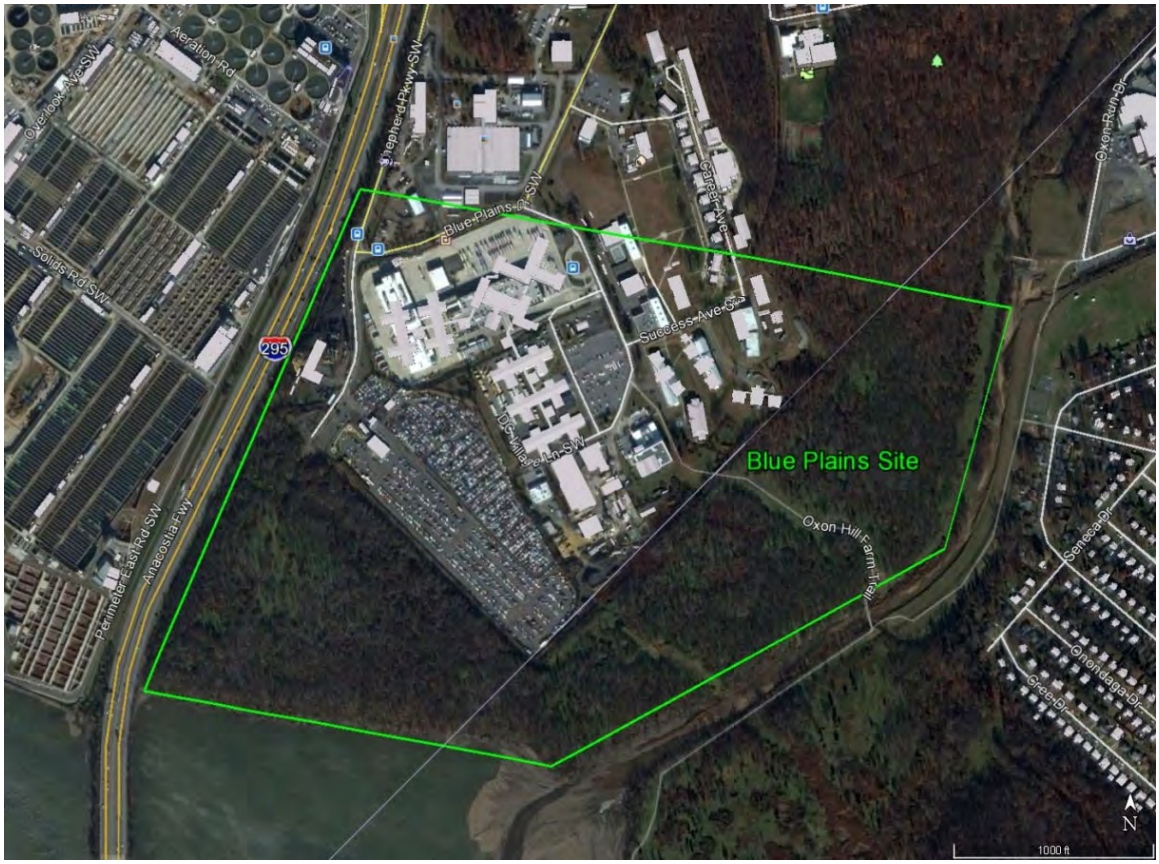
*Site History:* Active CCR storage site receiving CCRs from Dickerson Power Plant since 1981. Recovery of CCR for sale to the cement industry began in 2019.

*Environmental Impacts:* Consent decree issued in 2013 settling lawsuits from State and environmental groups claiming that the landfill had impacted groundwater quality (Wheeler, 2013).

*Sources:* PPSP, 1982; MDE, 2010; Wheeler, 2013

*Maryland:*
*Prince George's County*

# BLUE PLAINS COAL ASH DEPOSIT




Source: GoogleEarth, 2020. Image Date: July 2019

**Site Name:** Blue Plains Site

**State, County, City:** Maryland, Prince George's County, and Washington DC

**Site Address:** East of 295 near Oxon Run

**Coordinates:** 38°48'51.95"N 77°0'54.50"W

**Owner:** Two unimproved parcels are located in Prince George's County with the owner listed as the United States

**Number and Type of CCR Storage Units:** 1 Structural fill

**Accepted Materials (e.g., fly ash, gypsum):** Class F fly ash

**Estimated Quantity of CCR:** Unknown

**Estimated Area:** 100 acres

**Beneficial Use Projects:** None

**CCR Compliance Website:** None

**Last Update:** October 2019

BLUE PLAINS COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

**Notes**

*Site History:* Fly ash from the Benning Road and Buzzard Point Power Plants was placed at the site during the 1950s. Most of this site is located within Washington DC. The portion of the site within Washington DC is partly developed with parking lots and buildings. The remainder of site appears to be vegetated. There is a Blue Plains Wastewater Treatment Plant in the area, unknown whether it extends onto the old landfill area.

*Environmental Impacts:* None available.

*Sources:* PPSP, 1982a; Maryland MERLIN Online

BRANDYWINE FLY ASH STORAGE SITE ASH DEPOSIT


Source: GoogleEarth 2020; Image date October 2019
Dashed line shows possible fill area based on surface morphology.

**Site Name:** Brandywine Fly Ash Storage Site

**State, County, City:** Maryland, Prince George's County, Brandywine

**Site Address**: 11700 North Keys Road, Brandywine

**Coordinates**: 38°42'5.25"N 76°48'30.44"W

**Owner:** NRG

**Number and Type of CCR Storage Units Onsite:** 1 Landfill

**Accepted Materials:** Class F fly ash, bottom ash, FGD products (potentially including sodium sulfate)

**Estimated Quantity of CCRs:** 7 million cubic yards (MDE, 2010)

**Estimated Area:** 300 acres (Wheeler, 2010)

**Beneficial Use Projects:** None

**CCR Compliance Website:** https://www.genon.com/ccr-rule-compliance/

**Last Update:** October 2020

BRANDYWINE FLY ASH STORAGE SITE COAL ASH DEPOSIT
– LiDAR HILLSHADE

Source: Maryland Department of Information Technology,
Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology.

**Notes:**

*Site History:* Active CCR storage site receiving CCRs from Chalk Point and Morgantown Power Plants since 1970.

*Environmental Impacts:* A lawsuit was filed by MDE in 2010 that included Faulkner and Westland in a consent decree issued in 2013. In addition, Hurricane Irene reportedly caused ash overflow at the site in 2011 (Wheeler, 2013).

*Sources:* PPSP, 1982a; MDE, 2010; Wheeler, 2010; Wheeler, 2013

# CHALK POINT POWER PLANT COAL ASH DEPOSITS


Source: GoogleEarth, 2020. Image Date: October 2019

**Site Name:** Chalk Point Power Plant Site

**State, County, City:** Maryland, Prince George's County, Aquasco

**Site Address:** 25100 Chalk Point Rd., Aquasco, MD 20608

**Coordinates:** 38°32'37.95"N 76°41'13.90"W

**Owner:** GenOn Chalk Point, LLC

**Number and Type of CCB Storage Units Onsite:** Unknown, at least two, possibly more structural fills

**Accepted Materials:** Class F fly ash and bottom ash

**Estimated Quantity of CCBs:** Unknown

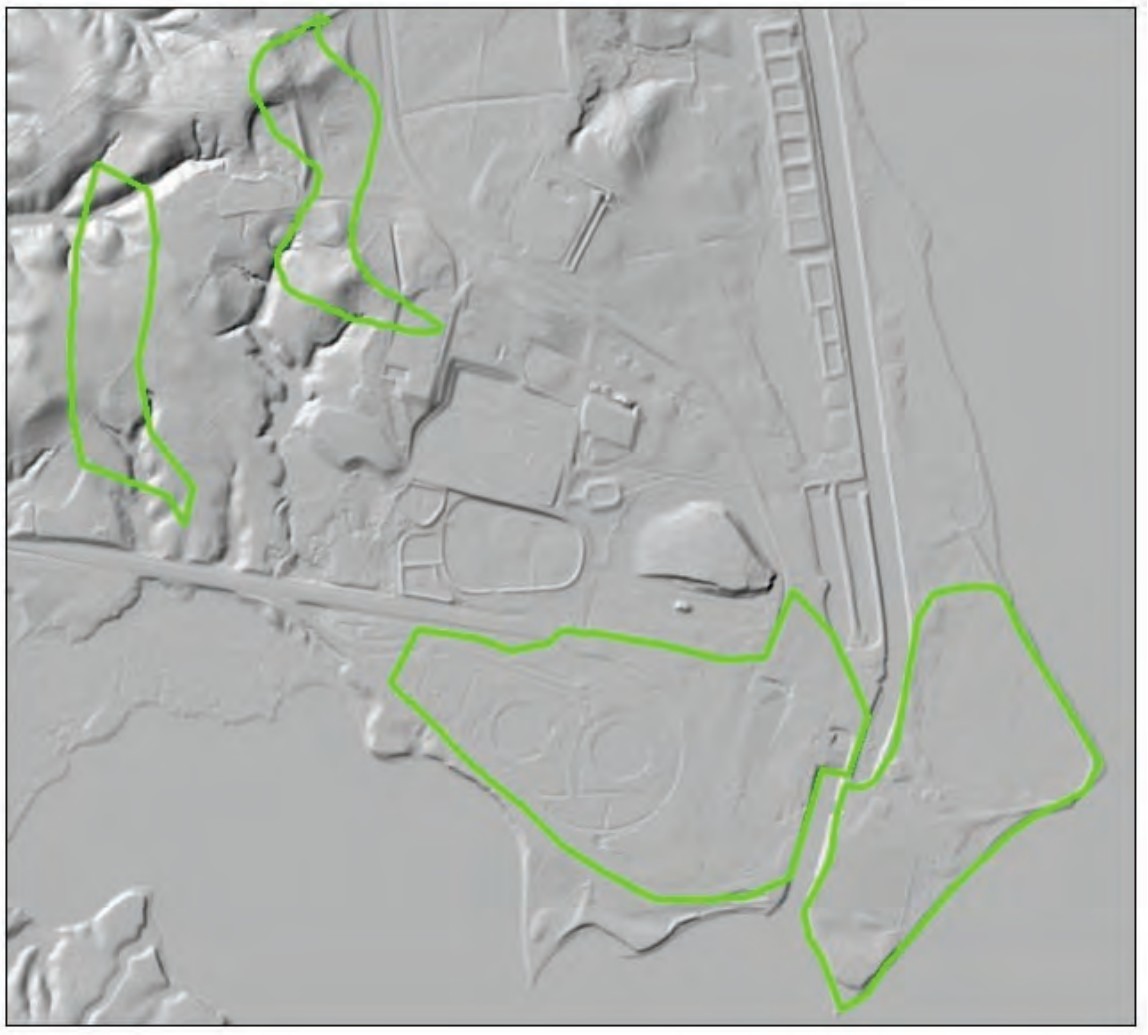
**Estimated Area:** Unknown

**Beneficial Use Projects:** None

**CCB Compliance Website:** None

**Last Update:** October 2020

CHALK POINT POWER PLANT ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

**Notes**

*Site History:* Class F fly ash and bottom ash generated at the power plant were disposed of in on-site landfills from 1964 to 1970 (PPSP, 1982). Disposal moved to the Brandywine landfill in 1970.

*Environmental Impacts:* No information available.

*Sources:* PPSP, 1982a; Maryland MERLIN Online

# DYSON ROAD ASH DEPOSIT


Source: GoogleEarth 2020; Image date April 2018

**Site Name:** Dyson Road Site

**State, County, City:** Maryland, Prince George's County

**Address:** Triangle formed by Dyson Rd., Rt. 301., and Missouri Ave.

**Coordinates:** 38°42'49.66"N 76°51'11.38"W

**Owner:** Marlboro Tobacco Market Inc. and Dyson Road LLC

**Number and Type of CCR Storage Units Onsite:** 1 Structural fill

**Accepted Materials:** Class F fly ash and bottom ash

**Estimated Quantity of CCRs:** Unknown

**Estimated Area:** 3 acres (PPSP, 1982)

**Beneficial Use Projects:** None

**CCR Compliance Website:** None

**Last Update:** September 2020

DYSON ROAD ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

**Notes**

*Site History:* Site location and area are approximate. The site received fly ash and bottom ash from the Chalk Point and Morgantown Power Plants during the early 1970s. PPSP, 1982a indicates that this was a relatively small filling project.

*Environmental Impacts:* No information available.

*Sources:* PPSP, 1982a; Maryland MERLIN Online

KENILWORTH AVENUE SITE COAL ASH DEPOSIT


Source: GoogleEarth 2020; Image date July 2017

**Site Name:** Kenilworth Avenue Site

**State, County, City:** Maryland, Prince George's County

**Address:** Not available

**Coordinates:** 38°54'53.37"N 76°55'37.98"W

**Owner:** Developed, multiple owners

**Number and Type of CCR Storage Units Onsite:** 1 Structural fill

**Accepted Materials:** Class F fly ash, bottom ash

**Estimated Quantity of CCRs:** Unknown

**Estimated Area:** Approximately 50 acres

**Beneficial Use Projects:** None

**CCR Compliance Website:** None

**Last Update:** October 2020

KENILWORTH SITE COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

**Notes**

*Site History:* Class F fly ash and bottom ash from the Benning Road and Buzzard Point Power Plants were placed at the site during the 1950s.

*Environmental Impacts:* None available.

*Sources:* PPSP, 1982a; Maryland MERLIN Online

# PISCATAWAY SITES 1, 2, AND 3 ASH DEPOSITS


Source: GoogleEarth 2020; Image date April 2018

**Site Name:** Piscataway Sites 1, 2, and 3

**State, County, City:** Maryland, Prince George's County

**Address:** Piscataway Dr.

**Coordinates:** 38°41'56.47"N 77°0'15.78"W; 38°41'53.11"N 77°0'8.24"W; and 38°41'56.97"N 76°59'49.50"W

**Owner:** United States of America and Piscataway Hills Citizens Association (Site 1); Pardo, Marianita A. Etal (Site 2); MD National Capital Park and Planning Co. (Site 3)

**Number and Type of CCR Storage Units Onsite:** 3 Structural fills

**Accepted Materials:** Class F fly ash and bottom ash

**Estimated Quantity of CCRs:** Unknown

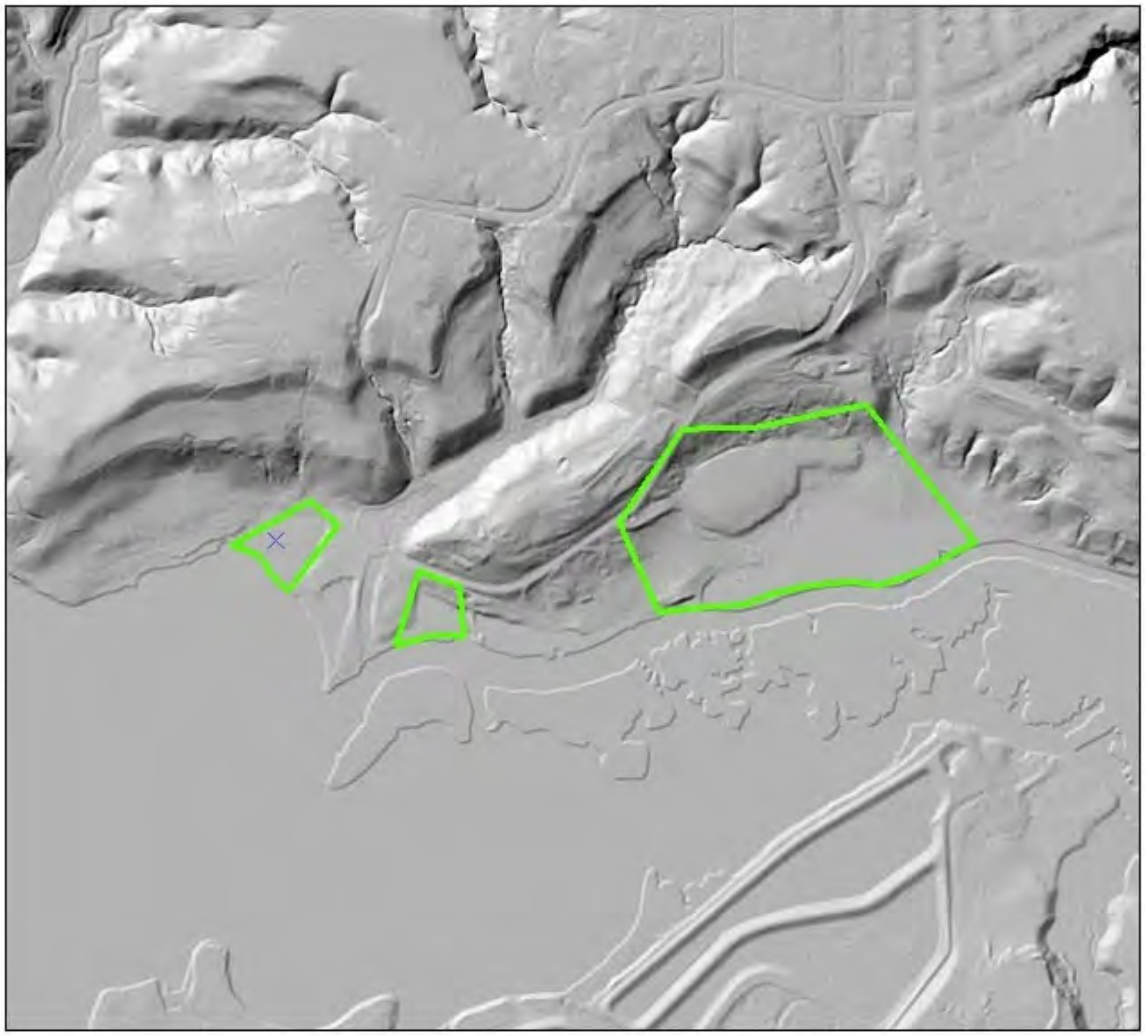
**Estimated Area:** 2 acres (Sites 1 and 2); 10 acres (Site 3); Approximate aggregate acreage – 14 acres (PPSP, 1982a)

**Beneficial Use Projects:** None

**CCR Compliance Website:** None

**Last Update:** September 2020

PISCATAWAY SITES 1, 2, AND 3 ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

**Notes**

*Site History:* CCRs from Benning Road and Buzzard Point Power Plants were disposed of at these three sites during the early 1970s. PPSP, 1982a indicates that this was a relatively small filling project. A windshield survey of all 3 sites was performed on 28 July 2017. Visibility of Sites 2 and 3 was limited due to heavy vegetation, but sites appeared to be vegetated with steep terrain. Site 1 was not accessible because Piscataway Dr. ends before it reaches this site.

*Environmental Impacts:* No information available.

*Sources:* PPSP, 1982a; Maryland MERLIN Online

# RITCHIE ROAD SITE COAL ASH DEPOSIT


Source: GoogleEarth, 2020. Image Date: April 2020

**Site Name:** Ritchie Road Site

**State, County, City:** Maryland, Prince George's County

**Site Address:** Northwest of the intersection of Ritchie Road and Ritchie Spur Road

**Coordinates:** 38°52'12.68"N 76°51'24.43"W

**Owner:** Prince Georges County and four others: EK Ritchie LLC, Alan Bortnick, Norman Spence and Lexington Drive LLP

**Number and Type of CCB Storage Units Onsite:** 1 Structural fill

**Accepted Materials:** Class F fly ash and bottom ash

**Estimated Quantity of CCBs:** Unknown

**Estimated Area:** Approximately 1 acre (PPSP, 1982)

**Beneficial Use Projects:** None

**CCB Compliance Website:** None

**Last Update:** October 2020

RITCHIE ROAD SITE ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

**Notes**

*Site History:* Class F fly ash and bottom ash from the Benning Road and Buzzard Point Power Plants were placed as fill at this site between 1967 and 1968. PPSP, 1982a describes this site as a "relatively small fill site."

*Environmental Impacts:* None available.

*Sources:* PPSP, 1982a; Maryland MERLIN Online

# WOODS CORNER ASH DEPOSIT


Source: GoogleEarth 2020; Image date March 2021

**Site Name:** Woods Corner Site

**County:** Prince George's County

**Site Address:** Northeast corner of I-95 and Branch Avenue

**Coordinates:** 38°49'31.78"N 76°55'13.92"W

**Owner:** The site is developed with multiple owners

**Number and Type of CCR Storage Units Onsite:** 1 Structural fill

**Accepted Materials:** Class F fly ash, construction debris, and domestic waste

**Estimated Quantity of CCRs:** Unknown

**Estimated Area:** 120 Acres

**Beneficial Use Projects:** None

**CCR Compliance Website:** None

**Last Update:** October 2020

WOODS CORNER ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

**Notes**

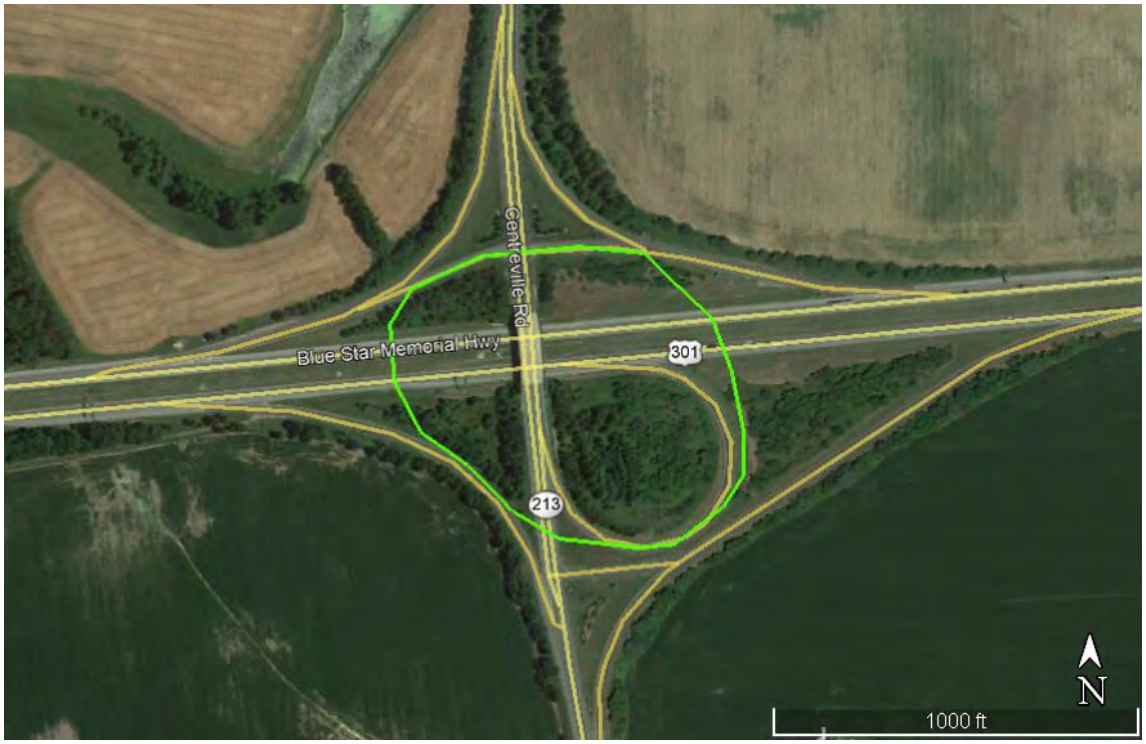
*Site History:* Fly ash from the Benning Road and Buzzard Point Power Plants were placed at the site during the 1960s.

*Environmental Impacts:* None available.

*Sources:* PPSP, 1982a; Maryland MERLIN Online

*Maryland:*
*Queen Anne's County*

US RT. 301 and MD 213 OVERPASS COAL ASH DEPOSIT




Source: GoogleEarth 2020; Image date June 2018

**Site Name:** Rt. 301 and MD 213 Overpass Site

**State, County, City:** Maryland, Queen Anne's County, Centerville

**Address:** Intersection of Rt. 301 and MD 213

**Coordinates:** 39°0'54.12"N 76°4'35.55"W

**Owner:** Maryland State Highway Administration

**Number and Type of CCR Storage Units Onsite:** 1 Structural fill

**Accepted Materials:** Class F fly ash

**Estimated Quantity of CCRs:** 60,000 tons

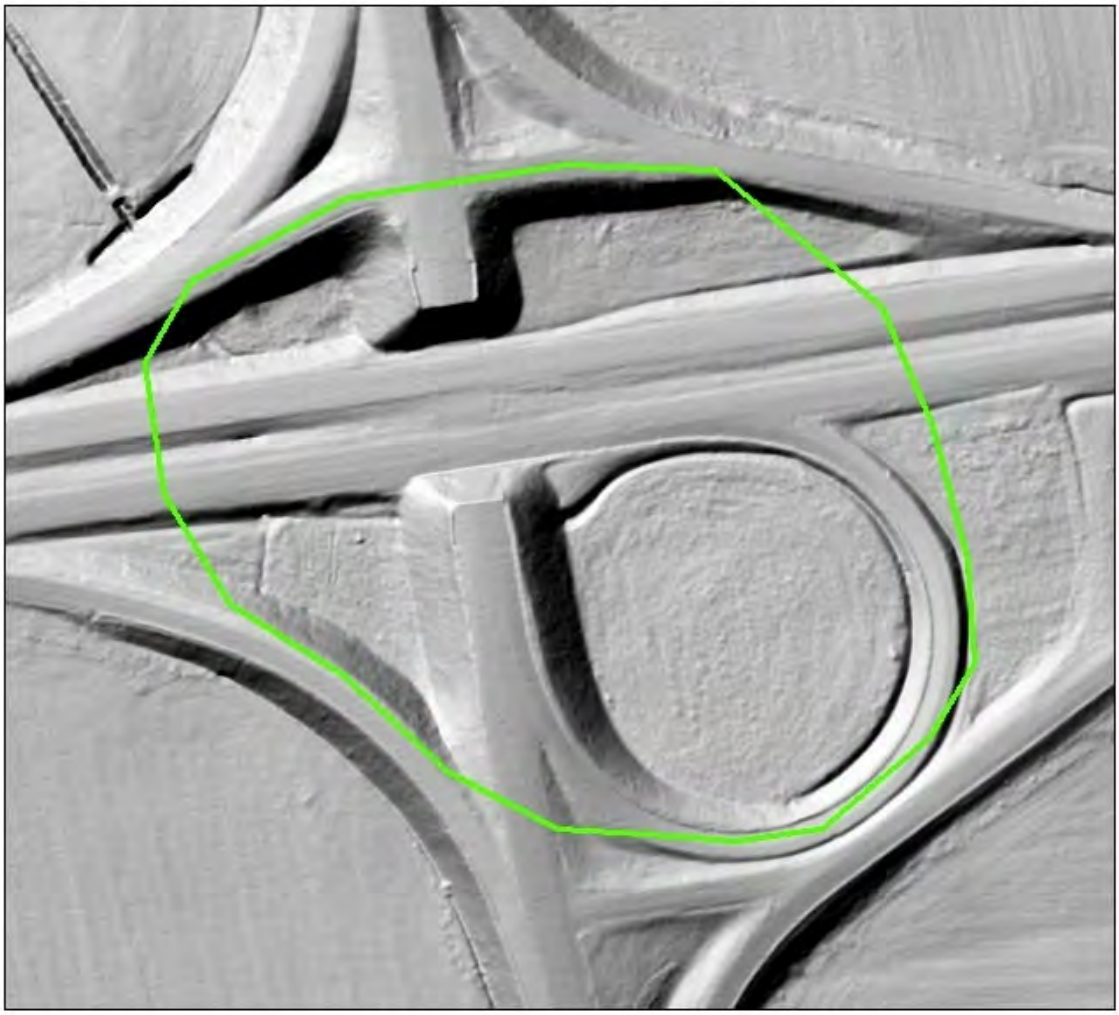
**Estimated Area:** Unknown

**Beneficial Use Projects:** None

**CCR Compliance Website:** None

**Last Update:** October 2020

US RT. 301-MD 213 OVERPASS ASH DEPOSIT– LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

**Notes**

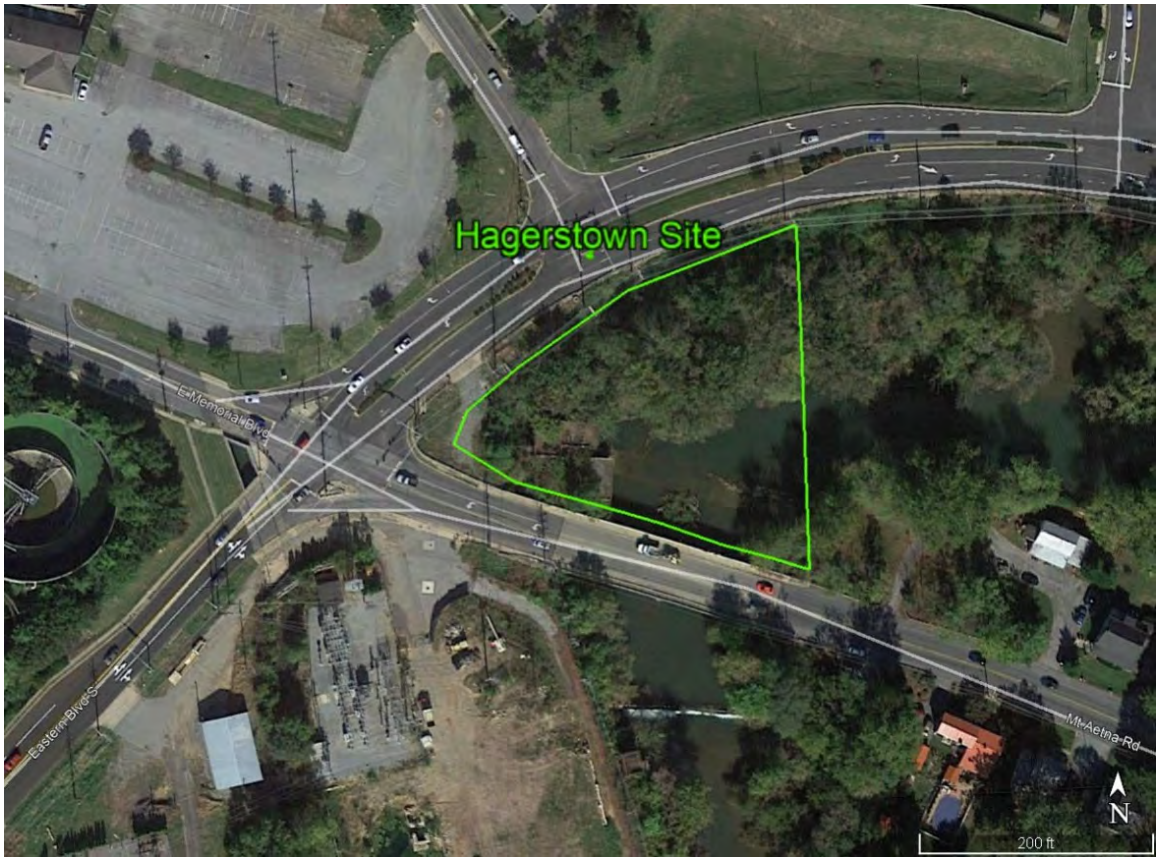
*Site History:* Class F fly ash from the Brandon Shores and Indian River Power Plants was used to construct embankments at the Rt. 301 and MD 213 interchange near Centerville, Maryland. Construction took place between 1993 and 1994.

*Environmental Impacts:* Groundwater data was collected before placement of CCR and both groundwater and pore water were monitored following completion of the construction project. A report on monitoring results was prepared in 2004. The groundwater study concluded that leachate was generated within the fill material but was generally attenuated in subsurface soils. A follow-up study was conducted in 2014 and reached similar conclusions.

*Sources:* MDE, 2010; PPRP, 2004; PPRP, 2017b

*Maryland:*
*Washington County*

HAGERSTOWN SITE COAL ASH DEPOSIT




Source: GoogleEarth 2020; Image date November 2016

**Site Name:** Hagerstown Power Plant Site

**State, County, City:** Maryland, Washington, Hagerstown

**Address:** Corner of Eastern Blvd. and Mt. Aetna Rd, along the bank of Antietam Creek

**Coordinates:** 38°37'53.38"N 77°42'34.70"W

**Owner:** Hagerstown Fiber and Light

**Number and Type of CCR Storage Units Onsite:** 1 Structural fill

**Accepted Materials:** Class F fly ash, bottom ash

**Estimated Quantity of CCRs:** Unknown

**Estimated Area:** Approximately 5 acres (PPSP, 1982a)

**Beneficial Use Projects:** None

**CCR Compliance Website:** None

**Last Update:** October 2020

HAGERSTOWN SITE COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

**Notes**

*Site History:* A portion of the fly ash and bottom ash from Hagerstown Fiber and Light was disposed of onsite from the 1950s until 1971. PPSP 1982a indicates that this plant produced a relatively small amount of CCR and much of the material was sent to a landfill in Pennsylvania. The Hagerstown Plant stopped burning coal in 1971.

*Environmental Impacts:* None available.

*Sources:* PPSP, 1982a; Maryland MERLIN Online

*Maryland:*
*Wicomico County*

NEWLAND PARK LANDFILL COAL ASH DEPOSIT


Source: GoogleEarth 2020; Image date March 2013

**Site Name:** Newland Park Sanitary Landfill

**State, County, City:** Maryland, Wicomico, Salisbury

**Address:** 7151 Brick Kiln Road, Salisbury, MD

**Coordinates:** 38°23'20.76"N 75°38'4.56"W

**Owner:** Wicomico County Department of Public Works

**Number and Type of CCR Storage Units Onsite:** 1 Landfill

**Accepted Materials:** Class F fly ash, bottom ash

**Estimated Quantity of CCRs:** Approximately 200,000 cubic yards

**Estimated Area:** Approximately 100 acres

**Beneficial Use Projects:** None

**CCR Compliance Website:** None

**Last Update:** October 2020

NEWLAND PARK LANDFILL COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

**Notes**

*Site History:* Fly ash from the Indian River Power Plant was used as structural fill under the landfill liner system. As of 2020, the landfill is still active.

*Environmental Impacts:* Groundwater is monitored as required by MDE landfill regulations.

*Sources:* MDE, 2010; MDE 2020b

*Delaware Sites*

SEAFORD POWER PLANT CCR SITE


Source: Google Earth, 2020, Image Date, 2018; Polygons: Source: Western MD Regional GIS Center,

**Site Name:** Seaford Power Plant

**State, County, City:** Delaware, Sussex County, Seaford

**Site Address:** 25876 Dupont Rd. Seaford, MD 19973

**Coordinates:** 38°37'23.19"N 75°37'59.38"W

**Owner:** INVISTA/Koch Industries

**Number and Type of CCR Storage Units Onsite:** 1 Landfill and 2 CCR surface impoundments which are empty of any CCR

**Accepted Materials:** 85% Fly ash and 15% Bottom Ash

**Estimated Quantity of CCR:** Unknown volume, 12 acres landfill with a maximum height of approximately 25 feet

**Estimated Area:** 12 acre landfill, empty impoundments cover 10 acres

**Beneficial Use Projects:** Unknown

**CCB Compliance Website:** Unknown

**Last Update:** November 2020

SEAFORD POWER PLANT CCR SITE – LIDAR HILLSHADE

Source: Western MD Regional GIS Center, 2020, Pennsylvania PASDA, USGS LIDAR 2017

**Notes:**

*Site History:* Invista operates a nylon textiles manufacturing site which included a coal-burning power plant for the generation of steam and electricity to operate the site. Three steam boilers burned bituminous coal for steam and power generation. After restructuring, the site completely converted to natural gas-fired boilers in April 2009.

The Coal Ash Landfill received the ash generated from the onsite power plant. When burning coal, the power plant generated fly ash and bottom ash. The fly ash and bottom ash were sluiced to one of two Coal Ash Settling Ponds located to the south of the power plant. The ash was then trucked to the onsite landfill. The settling ponds have been dredged out and are empty. The Coal Ash Landfill has accepted ash under a DNREC permit since 1979. Of the ash produced from the combustion of coal, approximately 85 percent (by volume) was fly ash and the other 15 percent was bottom ash. There was not much difference between the generated bottom ash and fly ash, other than particle size. The amount of ash generated per year was approximately 25,000 tons (dry weight) based on a material balance. The total amount in the landfill is unknown as ash was used to create a nearby golf course. The landfill is unlined but is covered by a geomembrane. No more ash is being accepted in the landfill today.

*Environmental Impacts:* A December 2008 EPA progress report on the Invista Seaford Plant found arsenic in the underlying groundwater and stated that the source of the arsenic is most likely coal ash generated by the site's power plant. This prompted Invista to convert its coal-fired boilers to natural gas.

*Sources:* EPA, 2020c; Gem.wiki, 2020d; DuPont Seaford Plant (Invista), 2006

*New York Sites*

AES HICKLING POWER PLANT


Aerial Photo Source: Google Earth, 2016

**Site Name:** AES Hickling Power Plant

**State, County, City:** New York, Steuben County, Corning

**Site Address:** 11884 Hickling Rd., Corning, NY 14830

**Coordinates:** 42° 7'20.78"N, 76°58'56.59"W

**Owner:** AES

**Number and Type of CCB Storage Units Onsite**: None

**Accepted Materials:** Unknown

**Estimated Quantity of CCBs:** Unknown

**Beneficial Use Projects:** Unknown

**CCB Compliance Website:** Unknown

**Last Update:** January 2021

AES HICKLING POWER PLANT - LIDAR HILLSHADE

(SEE WEBER LANDFILL)

*Site History:* The Hickling generation plant was constructed in 1948 by the New York State Electric & Gas Corporation, Hickling featuring two coal-fired boilers and large turbines. Hickling was a medium power-producing plant, regularly generating up to 70 megawatts of energy during off-peak periods. The power plant was in operation for over 50 years before Hickling's new owners, AES, placed it on cold standby. The power plant was retired in 2000.

See Weber Landfill sheet for CCR description.

*Environmental Impacts:* See Weber Landfill

*Sources:* Levy Konigsburg, LLP; Energy Justice Network AES Hickling, LLC; Industryabout.com, 2014a; United States Securities and Exchange Commission, 2001; ashtracker.org, 2017c

AES JENNISON POWER PLANT


Aerial Photo Source: Google Earth, 2016

**Site Name:** AES Jennison Power Plant

**State, County, City:** New York, Chenango County, Bainbridge

**Site Address:** Route 7 Bainbridge, New York 13733

**Coordinates:** 42°16'36.99"N, 75°28'45.88"W

**Owner:** GMMM Holdings I LLC

**Number and Type of CCR Storage Units Onsite:** None

**Accepted Materials:** Unknown

**Estimated Quantity of CCRs:** Unknown

**Beneficial Use Projects:** Unknown

**CCB Compliance Website:** Unknown

**Last Update**: October 2020

AES JENNISON POWER PLANT – LIDAR HILLSHADE

(SEE WEBER LANDFILL)

*Site History:* The AES Jennison power station was constructed and operated by the New York State Electric & Gas Corporation. It went online in 1945, serving the central New York market in Chenango County. The plant featured four coal-fired stoker boilers that delivered steam to General Electric turbines. In 1999, Jennison was sold to AES. Today, it sits idle, after serving Central New York for over 50 years, from 1945 to 2000. In 2011, the plant was sold to GMMM Holdings I LLC for basically scrap.

See Weber Landfill for CCR information.

*Environmental Impact:* See Weber Landfill

*Sources:* Energy Justice Network. AES Jennison, LLC; Tedsoutfit Wiki. AES Jennison Generation Plant; Simonson, 2010; Gem.wiki, 2019b; United States Securities and Exchange Commission, 1999b.

AES WESTOVER LLC POWER PLANT


Aerial Photo Source: Google Earth, 2017

**Name:** AES Westover LLC Power Plant

**State, County, City:** New York, Broome County, Johnson City

**Site Address:** 720 Riverside Dr., Johnson City, NY 13790

**Coordinates:** 42° 6'41.39"N, 75°58'27.31"W

**Owner:** AEE2 LLC

**Accepted Materials**: Unknown

**Estimated Quantity of CCRs:** Unknown

**Beneficial Use Projects:** Although no specific projects are mentioned, fly ash was used for beneficial use.

**CCR Compliance Website:** None

**Last Update:** January 2021

AES WESTOVER LLC POWER PLANT – LIDAR HILLSHADE

No ash was found nearby. See Weber landfill for Westover reference.

*Site History:* The Power Station in Johnson City, New York, was constructed in 1917 by the New York State Electric and Gas Corporation (NYSEG). During its operation, the power plant consisted of three coal-fired boilers, which provided steam to two turbine generators with a generating capacity of 119 megawatts. In 1999, AES Corporation purchased the plant and renamed it AES Westover. In 2011, the power plant was sold to GMMM Holdings LLC, who indicated that it intended to salvage or scrap the equipment and demolish the plant for potential redevelopment. AES Westover closed in 2012.

There was no information regarding the disposal of Coal Combustion Residuals (CCRs) for this power station other than the fact that some of the ash was used for beneficial purposes. There is a landfill that is located nearby, however, that may have been a site for ash deposition. More research will have to be done to determine this possibility.

*Environmental Impacts:* No information available.

*Sources:* Gem.wiki, 2019a; Justia, 2017; Tedsoutfit Wiki; Industryabout.com, 2014b; Nycourts.gov, 2006; Cassell, 2012

WEBER COAL ASH DEPOSIT


Aerial Photo Source: Google Earth, 2020, Polygons: Source: Western MD Regional GIS Center, 2017

**Site Name:** Weber Ash Disposal Site

**State, County, City:** New York, Broome County, Port Crane

**Site Address:** Gould Road, Port Crane, New York 13833

**Coordinates:** 42°12'40.89"N, 75°49'29.05"W

**Owner:** AES NY LLC

**Number and Type of Storage Units Onsite:** This is a monofil ash disposal site that accepted ash from multiple sources.

**Accepted Materials:** Fly ash and bottom ash

**Estimated Quantity of CCR:** The 13-acre site was used for approximately 12 to 15 years for the landfilling of by-products generated from the combustion of coal. It is estimated that approximately 1,200 to 1,500 tons per year were landfilled at the site.

**Beneficial Use Projects:** Unknown

**CCR Compliance Website:** None

**Last Update:** December 2020

WEBER COAL ASH DEPOSIT – LIDAR HILLSHADE

Source: Western MD Regional GIS Center, Hillshade generated from data from gis.ny.gov

**Notes:**

*Site History:* The Weber Ash Disposal Site was constructed by New York State Electric and Gas in 1978. It is an inactive 13-acre landfill, made of two coal ash cells, Weber I and II, which closed in 1981 and 2001, respectively.

The Weber Ash Disposal Site accepted fly ash and bottom ash from the now-retired Jennison, Hickling, Westover, and Greenridge Power Plants. The Greenridge Power Plant has been recommissioned, and is being powered by gas turbines. The site was lined and collected mainly fly and bottom ash when still active. The site also contained a leachate treatment facility. The disposal site was capped in December 2001.

*Environmental Impact: T*he Weber Ash Disposal Site has 13 groundwater monitoring wells, two of which have been polluted above federal advisory levels based on samples collected between January 3, 2011, and December 15, 2015. Groundwater at this site contains unsafe levels of manganese and arsenic. In October 1999, AES Creative Resources, L.P., entered into a consent order with the New York State Department of Environmental Conservation (NYSDEC) to resolve water quality violations. The consent order included a suspended $5,000 civil penalty and a requirement to submit an approved closure plan by October 8, 2000.

*Sources:* Ashtracker.org, 2017c; United States Securities and Exchange Commission, 1999a; Sterns and Wheeler, 2010

*Pennsylvania Sites*

BRUNNER ISLAND POWER PLANT COAL ASH DEPOSIT


Aerial Photo Source: Google Earth 2015, Polygons: Western MD Regional GIS Center, 2020

**Site Name:** Brunner Island Power Plant Ash Deposit

**State, County, City:** Pennsylvania, York County, York Haven

**Site Address:** 1400 Wago Rd., York Haven, PA 17370

**Coordinates:** 40° 5′ 44″ N, 76° 41′ 49″ W

**Owner:** Talen Energy

**Number and Type of CCR Storage Units Onsite:** Numerous closed CCR basins, one unlined, active CCR basin (Ash Basin 6), and one active CCR landfill (Disposal Area 8).

**Accepted Materials:** Various CCRs, fly & bottom ash, sludge

**Estimated Quantity of CCRs:** Approximately 3 million tons

**Beneficial Use Projects:** Yes, see below

**CCR Compliance Website:** talenenergy.com/ccr-brunner-island

**Last Update:** January 2021

BRUNNER ISLAND POWER PLANT COAL ASH DEPOSIT – LIDAR HILLSHADE

Source: Western MD Regional GIS Center, Hillshade generated from Hurricane Sandy LIDAR 2015 data from Pennsylvania PASDA

**Notes**
Online Date: 1961 (334 MW), 1965 (390 MW), and 1969 (759 MW)
Technology: Currently 2 natural gas-fired and 1 coal-fired turbine

*Site History:* The Brunner Island Power Plant in York County, Pennsylvania was built and owned by Pennsylvania Power and Light (PPL). On June 1, 2015, Talen Energy was formed from PPL, and now owns the Brunner Island Power Plant. Brunner Island burns coal for fuel, but as of 2017, it was adding natural gas-firing capabilities to all three of its units. Under a settlement announced by Talen Energy and the Sierra Club, the power plant will operate the plant only on natural gas during the peak ozone season (May through September), beginning in 2023. Talen Energy will completely cease burning coal by December 31, 2028.

The plant's coal-burning operations generate over 671,800 tons of coal combustion residuals (CCRs) annually, which have historically been disposed of in onsite basins and landfills. Today these include **Ash Basins 4, 5, and 7** which are closed and monitored.

**Ash Landfill 8 (**Disposal Area 8), according to Geosyntec (2016), is an active CCR landfill constructed in 2008 to accept coal combustion residuals produced by the plant. The landfill was built in the middle and on top of Ash Basin 5, which was closed in 1987. The plan is to leave CCRs in place when the landfill is closed.

**Ash Basin No. 6** was constructed in 1979 for the purpose of storing fly ash, bottom ash, and various sludges. CCRs are pumped into the basin as a water slurry. Ash then settles from the slurry for storage and beneficial reuse. Ash Basin No. 6 in its current configuration has an original storage volume of approximately 2,600 acre-feet at the top of the embankment. The basin is formed by an embankment constructed with fill and includes a 10-foot thick clay liner. Overall, the impoundment has a surface area of about 70 acres and is divided into three main areas. The northern part of the main basin has been completely filled with ash. The southern part of the main basin has not been completely filled and holds water. To the south of the main basin is a polishing pond, which also holds water. Talen is no longer discharging ash slurry into the basin, although process water that is exposed to ash is still being discharged at the northwest corner of the basin; therefore, the ash basin is still considered active. Existing ash near the north end of the basin is being reclaimed and removed for beneficial re-use. The total CCR storage capacity of Ash Basin 6 is approximately 3,864,000 tons. An estimated 3,206,635 tons of CCR remains in the ash basin, resulting in a remaining CCR storage capacity from the existing CCR surface to the reservoir surface elevation, of 657,365 tons in the southern part of the basin where ash has not been deposited. Talen reported that the CCR Removal Project has resulted in the removal of 83,545 tons in 2015, 182,559 tons in 2016, and 125,391 tons in 2017 resulting in a total of 391,495 tons of non-dry CCR material since ash removal began in 2015. Lehigh Cement calculates an average unit weight of non-dry CCR material to be 100.3 pounds per cubic foot (pcf). Prior to the start of the CCR Removal Project, an estimated 3,598,130 tons of non-dry CCR were in the ash basin. Subtracting what has currently been removed leaves the basin with 3,206,635 tons of non-dry impounded CCR material remaining. According to Talen Energy (April 28, 2016, "Quarterly Groundwater Report: 1st Quarter 2016, Basin No. 6") operation of Basin 6 is to be discontinued, and a "Clean Closure (ash removal)" process was begun in July of 2015.

Fly ash from the Brunner Island facility is approved for use in construction projects, especially for use in concrete mixes to reduce alkali silica reactivity of aggregate. Ash above the water table within the basin is currently being excavated and the ash is being beneficially reused off-site. It is anticipated that this process will take 15 years to complete (from start to finish). Additionally, the air quality control devices installed at the plant remove up to 97 percent of incoming sulfur dioxide at the plant. The flue gas desulfurization systems are comprised of limestone forced oxidation scrubbers that produce synthetic gypsum as a by-product which is shipped offsite to wallboard manufacturing facilities.

In 2008, CCRs from Brunner Island were used as fill in the construction of the Royal Manchester Golf Course (Geosyntec, 2016). The golf course is situated southwest of the power plant. The CCR wastes applied to the golf course were blended with a soil amendment (Stabil – Fill) that includes lime to attempt to stabilize constituents of CCR wastes and prevent leaching of contaminants into the groundwater system.

Water Quality:
CCR and non-CCR wastewater deposited in Ash Basin 6 and Disposal Area 8, which sits atop Ash Basin 5, discharge to groundwater that is directly connected, hydrologically, to the Susquehanna River and its tributary, Black Gut Creek. Ash Basin 6 is within 700 feet of the banks of the Susquehanna and its tributary. Ash Basin 5 is approximately 500 feet from surface waters. Disposal Area 8 is approximately 800 feet from Black Gut Creek. Talen also admits that the groundwater elevation beneath these units is higher than the elevation of the Susquehanna River and Black Gut Creek. The groundwater table is higher than the bottom layer of CCR deposited in Ash Basin 6 and Ash Basin 5. Additionally, because Ash Basin 5 and 6 are unlined and are leaking CCR and/or non-CCR wastewater, and because contents of Disposal Area 8 are passing through unlined Ash Basin 5, all three of these units are discharging CCR and non-CCR pollutants to surface waters via hydrologically connected groundwater.

*Sources:* Ashtracker.org, 2019a; Talen Energy; 2021a

HATFIELD'S FERRY POWER STATION ASH DEPOSIT


Source: Google Earth, 2020; Polygons: Western MD Regional GIS Center, 2020

**Site Name:** Hatfield's Ferry Power Station

**State, County, City:** Pennsylvania, Greene County, Carmichaels

**Site Address:** 2773 E Roy Furman Hwy, Carmichaels, PA 15320

**Coordinates:** 39°51'2.89"N, 79°56'50.84"W

**Owner:** FirstEnergy

**Number and Type of CCB Storage Units Onsite:** 1 landfill

**Accepted Materials (e.g., fly ash, gypsum):** Ash, likely gypsum, possibly other waste

**Estimated Quantity of CCBs:** Unknown

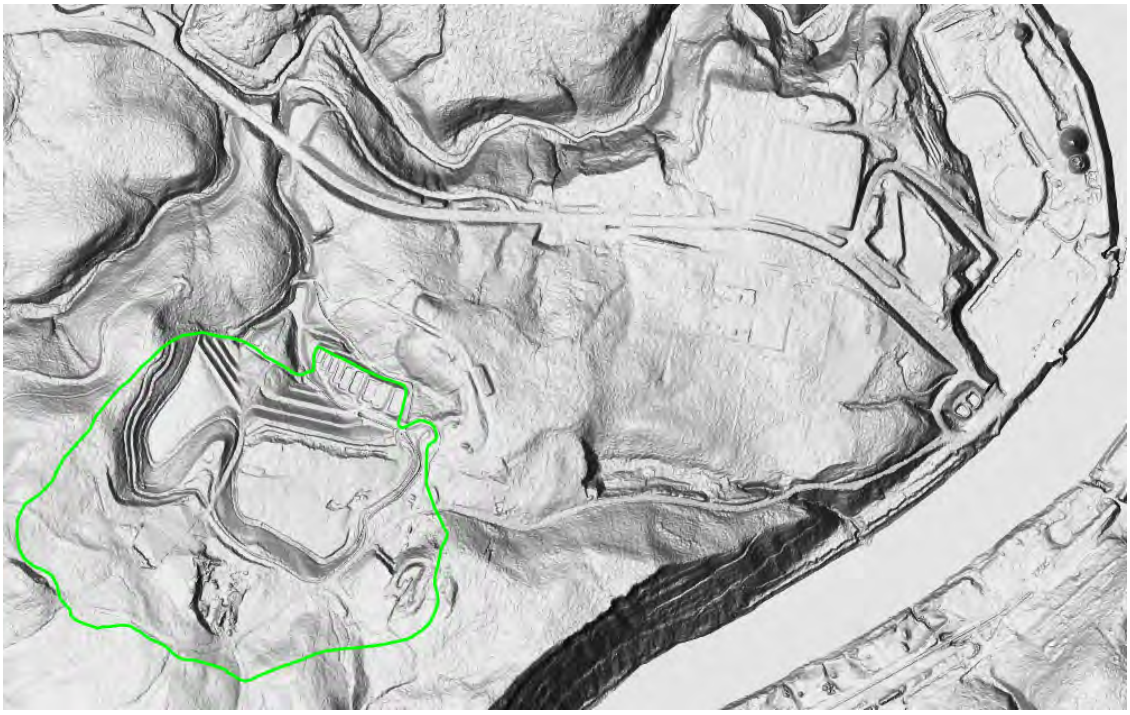
**Estimated Area:** Unknown

**Beneficial Use Projects:** Unknown

**CCB Compliance Website:** https://energyharbor.com/en/powering-the-grid/compliance-and-data-reporting

**Last Update:** September 2020

HATFIELD'S FERRY POWER STATION ASH DEPOSIT – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, Hillshade generated from PAMAP LIDAR 2006-08 data from Pennsylvania PASDA

*Site History:* The Hatfield's Ferry Power Station was a 1.7-gigawatt, 3 Unit, coal power plant located in Greene County, Pennsylvania. The plant was operated by FirstEnergy and began operations in 1969 and was shut down in 2013. The plant was decommissioned October 9, 2013.

The Hatfield's Ferry Coal Combustion Byproduct (CCB) Landfill is a captive facility. Presently, CCR and other permitted waste are being placed intermittently in the landfill as Hatfield's Ferry Power Station was deactivated.

FirstEnergy applied for a minor modification to the permit in 2015 to utilize the remaining disposal capacity at the Hatfield's Ferry Power Station CCB Landfill for disposal of Bruce Mansfield Plant flue gas desulfurization (FGD) material upon closure of the Little Blue Run Impoundment. The permit authorized modifications to allow for FGD material barged from the Bruce Mansfield Plant to be disposed of at the Hatfield's Ferry Power Station CCB Landfill.

*Environmental Impacts:* The Hatfield's Ferry Power Station CCB landfill has contaminated surface water around the facility with elevated levels of boron and molybdenum.

*Sources:* Frazier, 2017; FirstEnergy Generation, 2015; EarthJustice, 2017; Energy Harbor Generation, 2020; Wikipedia.org, 2020.

HOLTWOOD POWER PLANT ASH DEPOSIT


Source: Google Earth, 2020; Polygons: Western MD Regional GIS Center, 2020

**Site Name:** Holtwood Power Plant Ash Deposit

**State, County, City:** Pennsylvania, Lancaster County, Holtwood

**Site Address:** Old Pinnacle Road, Holtwood PA 17532

**Coordinates:** 39°49'50.84"N, 76°19'07.06"W

**Owner:** Brookfield Renewables

**Number and Type of CCB Storage Units Onsite:** One surface impoundment

**Accepted Materials (e.g., fly ash, gypsum):** Unknown, most likely only ash

**Estimated Quantity of CCB:** Unknown, PPL indicates the ash sludge has been removed and the basin filled with soil

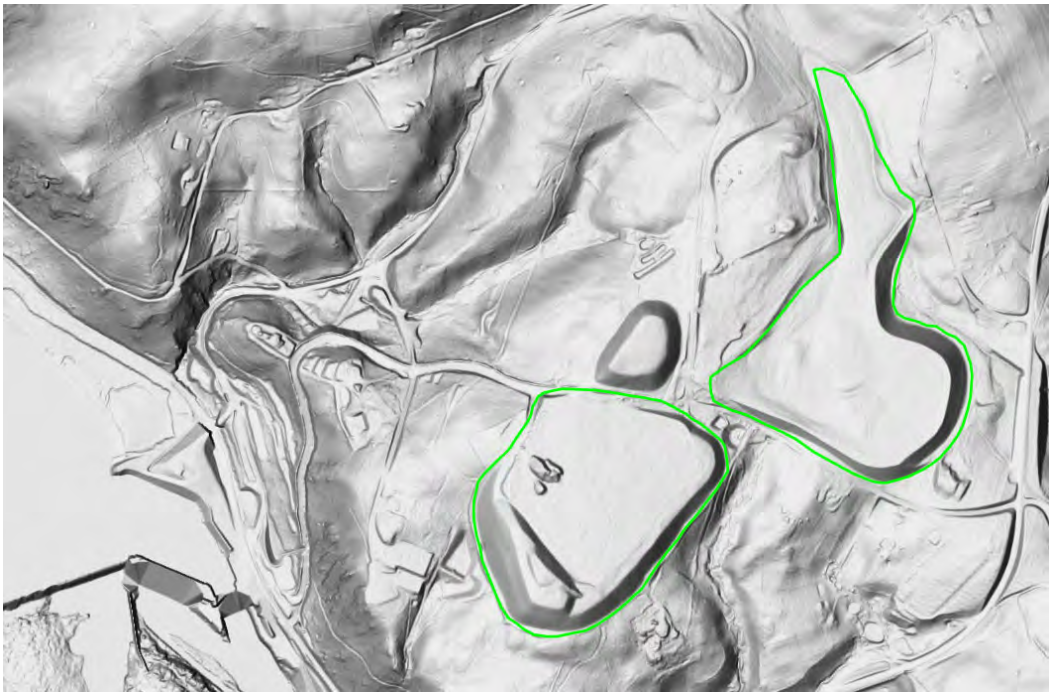
**Estimated Area:** Unknown

**Beneficial Use Projects:** Unknown

**CCB Compliance Website:** None

**Last Update:** October 2020

HOLDTWOOD POWER PLANT ASH DEPOSIT – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, PA PASDA, Hurricane Sandy 2015 LIDAR

**Notes**

*Site History*: In the 1920s, the Holtwood Coal Company began burning coal dredged from behind the adjacent dam on the Susquehanna River in their steam-generating facility. The plant continued to expand its steam-generating capacity through the 1940s and 1950s. Burning dredged coal ash was discontinued in the 1970s due to unavailability. The Holtwood Coal Power Plant was operated by Pennsylvania Power and Light (PPL) from 1954 to 1999. The coal plant was demolished and only the upgraded hydroelectric power plant remains.

The Holtwood Ash Basin is a 40-acre closed ash basin that held ash deposits from the Holtwood Dam (from 1980 to 1999) when the company retired the coal unit. No information on the size or volume of waste that was contained in the impoundment was provided. Holtwood used on average of 15 to 20 tons of the bottom ash per year during operations. PPL stated in a 2009 news article that the coal ash sludge was removed, and the basin filled with dirt several years ago.

The other manmade earthen structure directly west of the known ash basin has no further information. Topographic study of the site indicates it is a manmade structure similar to the known ash basin directly east of it.

*Environmental Impacts:* No current impacts noted

*Sources:* Lancaster County, 2019; Lewitt, 2011; Brubeker, 2002; The Coal Industry, 1920; Reilly, 2009; Shirk, 2009; PPL Generation, 2009a,b; Porse, 2010; NRC, 2009; Crable, 2009

HUNLOCK CREEK POWER PLANT ASH DEPOSIT


Source: 2010 Google Earth, Polygons: Western MD Regional GIS Center, 2020

**Site Name:** Hunlock Creek Power Plant

**State, County, City:** Pennsylvania, Luzerne County, Hunlock Creek

**Site Address:** 390 State Route 11, Hunlock Creek, PA 18621

**Coordinates:** 41°12'1.92"N, 76° 4'20.27"W

**Owner:** UGI

**Number and Type of CCR Storage Units Onsite:** 2 Surface impoundments

**Accepted Materials (e.g., fly ash, gypsum):** Fly ash, bottom ash

**Estimated Quantity of CCRs:** Reports indicated all ash removed as of 2013

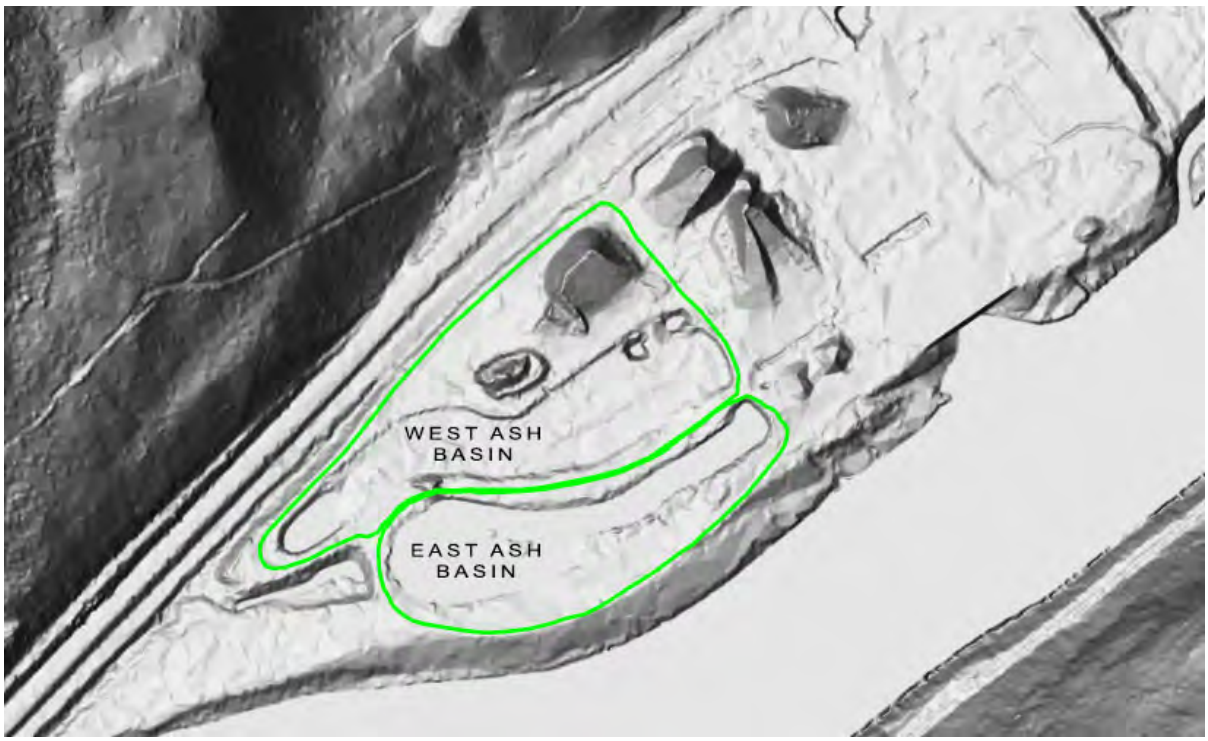
**Estimated Area:** Unknown

**Beneficial Use Projects:** Unknown

**CCB Compliance Website:** None

**Last Update:** September 2020

HUNLOCK CREEK POWER PLANT ASH DEPOSIT – LIDAR HILLSHADE




Source: Western MD Regional GIS Center, Hillshade generated from PAMAP LIDAR 2006-08 data from Pennsylvania PASDA

**Notes**

*Site History*: The station began generating electricity from coal in 1924, however the 50-Megawatt coal unit was not in operation until 1959. The station's coal units 1 & 2 were retired in 1975 and in 2010 unit 3 was converted to two gas turbines which ended coal use at this station.

The east and west basins were constructed in the early 1960s to collect Coal Combustion Residuals (CCR) from the power station. The basins were dredged regularly, approximately every two years, and the ash obtained was temporarily stored on-site for drying purposes, and later disposed of off-site.

The two ash basins stopped receiving ash, were emptied, and were in the process of being reclaimed as of 2011. According to a 2011 assessment conducted by the U.S. Environmental Protection Agency, ash from these basins was trucked off-site to a regulated mine reclamation facility and some of the bottom ash was used as anti-skid material on roads.

As of 2013 all ash has been removed and deposited in an approved mine site. During the time that the plant used coal, the plant burned 220,000 tons of coal annually, creating between 50,000 and 60,000 tons of ash per year.

*Environmental Impacts*: Potentially polluted ground & surface water at levels dangerous to human health.

*Sources:* EPA, 2011; EPA, 2012b; Ashtracker.org, 2017b

MONTOUR POWER PLANT COAL ASH DEPOSIT


Source: Google Earth 2020; Polygons Source: Western Maryland Regional GIS Center, 2018;

**Site Name:** Montour Power Plant Coal Ash Deposit

**State, County, City:** Pennsylvania, Montour County, Washingtonville

**Site Address:** 18 McMichael Rd, Washingtonville, PA 17884

**Coordinates**: 41°04'14.09"N 76°39'54.71"W

**Owner:** Talen Energy

**Number and Type of CCB Storage Units Onsite:** 2 Unlined ponds, 3 landfills

**Accepted Materials (e.g., fly ash, gypsum):** Fly ash, bottom ash fly ash, coal mill rejects, soils containing pyrites, and other industrial wastes

**Estimated Quantity of CCBs:** See Site History

**Estimated Area:** See Site History

**Beneficial Use Projects:** Unknown

**CCB Compliance Website:** https://www.talenenergy.com/ccr-montour/

**Last Update:** October 2020

MONTOUR POWER PLANT ASH DEPOSIT – LIDAR HILLSHADE

Source: Western MD Regional GIS Center, Pennsylvania PASDA, USGS LIDAR 2017

**Notes**

*Site History:* Ash Basin No. 1 is a 155-acre unlined, earthen dike disposal impoundment placed in service in 1971 and is located adjacent to the Montour Steam Electric Station.

A revised total storage capacity for Ash Basin No. 1 was granted by the DEP to be 9,642,000 cubic yards or roughly 10,510,044 tons. As of a 2017 inspection, an estimated 8,916,775 tons of CCR has already been deposited, resulting in a remaining storage capacity of 1,593,269 tons.

Ash Basin No. 2 is a 34-acre, clay/plastic lined CCR landfill that accepted ash from 1982-89.

Ash Basin No. 3 covers 50.6 acres and is divided into four disposal cells. As of the time of a 2017 inspection, approximately 1,139,838 tons of material had been landfilled in Basin No. 3 Cells A and B (about 56 percent of the capacity), and 23 percent of the total landfill storage capacity of 4,992,221 tons for Cells A, B, C, and D.

*Environmental Impacts:* Montour CCR compliance webpage indicates the Montour Power Plant is associated with concerning levels of groundwater pollutants.

*Sources:* SAIC, 1997; PPL, 2009b; Talen, 2016; HDP, 2016; Talen, 2020a; Talen, 2020b; Talen, 2021b

PIXELLE – SPRING GROVE POWER PLANT COAL ASH DEPOSIT


Source: Google Earth, 2020 Polygons: Western MD Regional GIS Center, 2020

**Site Name:** Pixelle – Spring Grove Power Plant

**State, County, City:** Pennsylvania, York County, Spring Grove

**Site Address:** 128 S. Main Street, Spring Grove, PA 17362

**Coordinates:** 39°52'16.69"N, 76°52'2.96"W

**Owner:** Pixelle Specialty Solutions LLC

**Number and Type of CCR Storage Units Onsite:** Ash is used for mine reclamation and agricultural applications

**Accepted Materials:** N/A

**Estimated Quantity of CCRs:** Daily production not known

**Estimated Area**: N/A

**Beneficial Use Projects:** Mine reclamation and agricultural applications

**CCR Compliance Website:** None

**Last Update:** November 2020

PIXELLE – SPRING GROVE POWER PLANT COAL ASH DEPOSIT LIDAR HILLSHADE


Source: Western MD Regional GIS Center, Hillshade generated from 2015 Hurricane Sandy LIDAR data from Pennsylvania PASDA

**Notes**

*Site History:* The P.H. Glatfelter Company, a producer of engineered papers (such as tobacco papers and sophisticated filter papers) and specialty printing papers, was founded in 1864 in Spring Grove, Pennsylvania. It has been family-owed since its beginning until it was sold to Lindsey Goldberg LLC in November of 2018. Boiler ash is used for strip mine reclamation and lime mud is applied in agricultural applications at the P H Glatfelter Plant. The location of the strip mines where the bottom ash is deposited is unknown. The P H Glatfelter Power Plant originally had four coal–fired powered boilers and one boiler that was fueled by black liquor. In December of 2016, the construction of two (2) Babcock & Wilcox (B&W), 405.8 MMBtu per hour each, natural gas-fired boilers and the installation of a hydrated lime injection system took place. As part of the project, three (3) coal-fired power boilers will be decommissioned leaving the plant with two (2) natural-gas boilers, two (2) coal–fired power boilers, and one (1) black liquor-fueled boiler. 2020 EIA data indicates Pixelle is down to one coal boiler.

*Environmental Impacts*: No impacts noted for current ash production.

*Sources:* epa.gov; eia.gov; gem.wiki; Glatfelter.com; power-eng.com; pennlive.com;

SHAWVILLE POWER PLANT ASH DEPOSIT


Source: Google Earth, 2020 Image Date, 2020

**Site Name:** Shawville Power Plant Ash Deposit

**State, County, City:** Pennsylvania, Clearfield County, Shawville

**Site Address:** 250 Power Plant Dr, Woodland, PA 16881

**Coordinates:** 41° 3'32.43"N, 78°21'56.23"W

**Owner:** NRG

**Number and Type of CCR Storage Units Onsite:** Appears to be one large landfill directly south of the power plant

**Accepted Materials (e.g., fly ash, gypsum):** Fly ash, bottom ash, and pyrites

**Estimated Quantity of CCRs:** At least 10 million tons (GIS measurements)

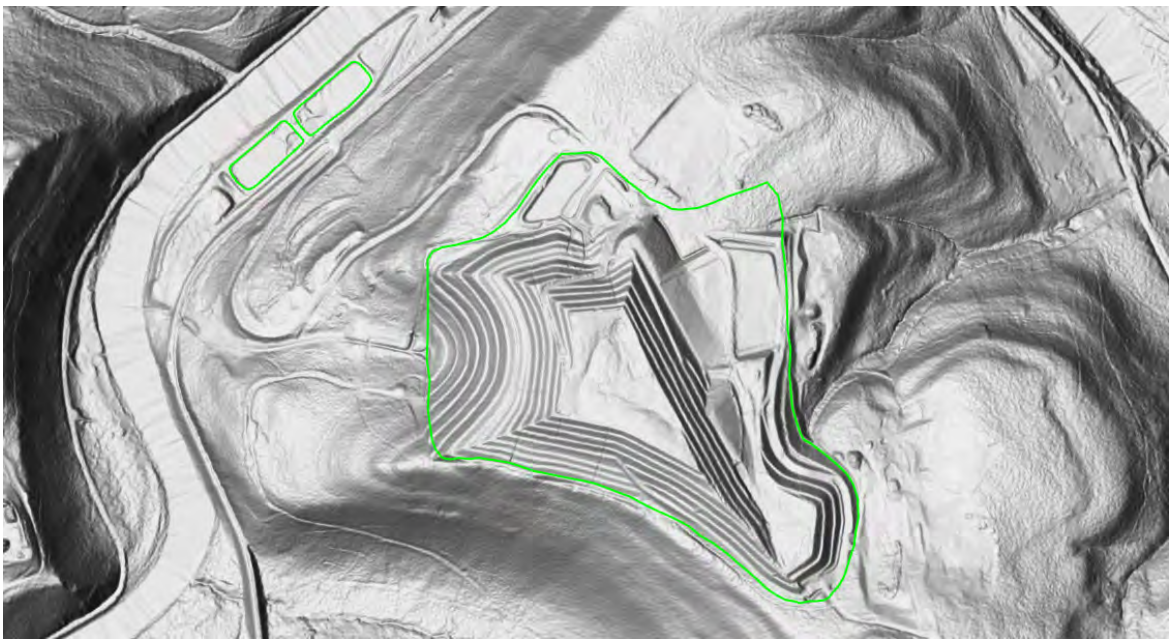
**Estimated Area:** See Site History

**Beneficial Use Projects:** None

**CCR Compliance Website:** None

**Last Update:** September 2020

SHAWVILLE POWER PLANT ASH DEPOSIT – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, Hillshade generated from USGS LIDAR 2017 data from Pennsylvania PASDA

**Notes**

*Site History:* In 1954, when coal was being used as fuel at the 625MW Shawville plant, fly ash was transported to a large "dry" landfill and bottom ash went to a single impoundment known as Ash Pond A & B. Prior to 1989, bottom ash and fly ash were sluiced to two impoundments known as Ponds 1 and 2. Pond 1 is now a stormwater management area and Pond 2 was converted into the new impoundment consisting of Ash Ponds A and B. The original landfill that began operation in the 1950s covers approximately 40.5 acres and is located about 0.75 miles from the Shawville Station.

Due to engineering issues, an alternative ash disposal landfill site was decided upon in the late 1980s, when PADEP agreed to the construction of a lined landfill over the old landfill. The newer portion of the landfill was issued a permit in 1992 and was allowed to be built over the old unlined disposal site. The permitted disposal area consists of 120 acres (15 acres closed disposal area, 50 acres active disposal area, 55 acres support activities). Approximately 217,000 tons of waste per year is disposed at the site and is comprised of fly ash (74%), bottom ash (18%), pyrites (8%) and minor quantities of miscellaneous, noncombustible solid waste. Company records indicate that approximately 11,000 dry tons of bottom ash was impounded annually.

*Environmental Impacts:* No information available.

*Sources:* SAIC, 1997; O'Brien and Gere, 2012; Energy Justice Network, Shawville Power Plant; Cassell, 2015a; Cassell, 2015b

SUNBURY POWER PLANT ASH DEPOSIT


Source: Google Earth, 2020 Image date: 2020

**Site Name:** Sunbury Power Plant Ash Deposit

**State, County, City:** Pennsylvania, Snyder County, Shamokin Dam

**Site Address:** 11th Ave, Shamokin Dam, PA 17876

**Coordinates:** 40°51'15.12"N, 76°50'34.10"W and 40°51'42.16"N, 76°49'58.56"W

**Owner:** Originally PPL, now Sunbury Generation (under 30-year lease w/ Panda Power Funds)

**Number and Type of CCR Storage Units Onsite:** Two landfills 1.3 miles northwest of the power plant. One surface impoundment (Ash Basin 1), not pictured, southwest of the plant, appears to have been removed.

**Accepted Materials (e.g., fly ash, gypsum):** Fly ash in the Northern and Southern basin, Basin 1 received fly and bottom ash, coal rejects, water treatment sludge, river silt, and construction debris.

**Estimated Quantity of CCRs:** Basin No.1 = 1200 acre-feet, landfills unknown

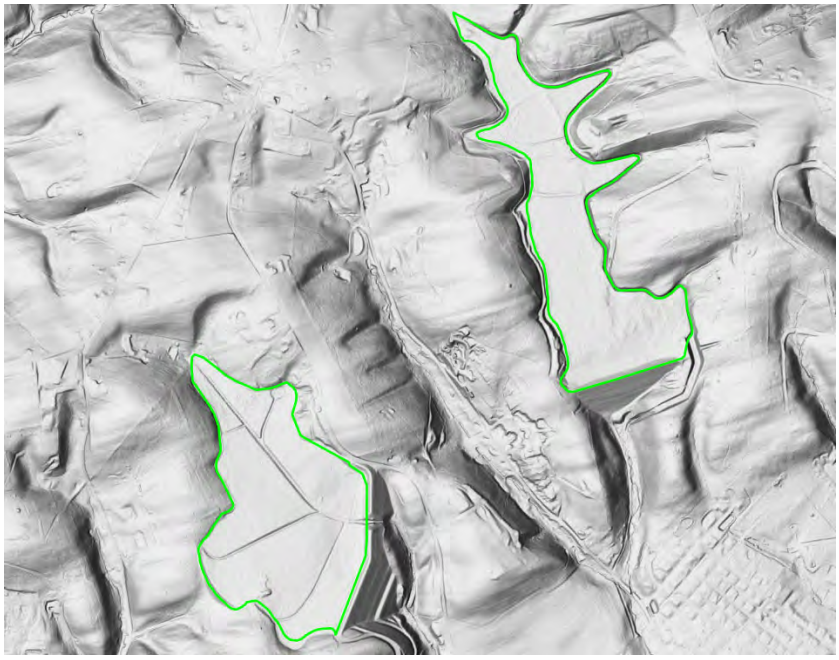
**Estimated Area:** 120 acres

**Beneficial Use Projects:** None

**CCB Compliance Website:** sunburygeneration.com/ccr-compliance-data-and-information/

**Last Update:** October 2020

SUNBURY POWER PLANT ASH DEPOSIT – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, Hillshade generated from USGS LIDAR 2017 data from Pennsylvania PASDA

**Notes**

*Site History:* The old Sunbury coal plant began operations in 1949 and was closed in 2014 after 65 years of operation. The 400-MW coal-fired Sunbury Power Plant was replaced with a three-unit, 1.1-GW combined cycle plant, called the Hummel Power Station, on Oct. 28, 2018. Originally built for Pennsylvania Power & Light, today the plant is owned by Sunbury Generation, a subsidiary of Corona Power, LLC.

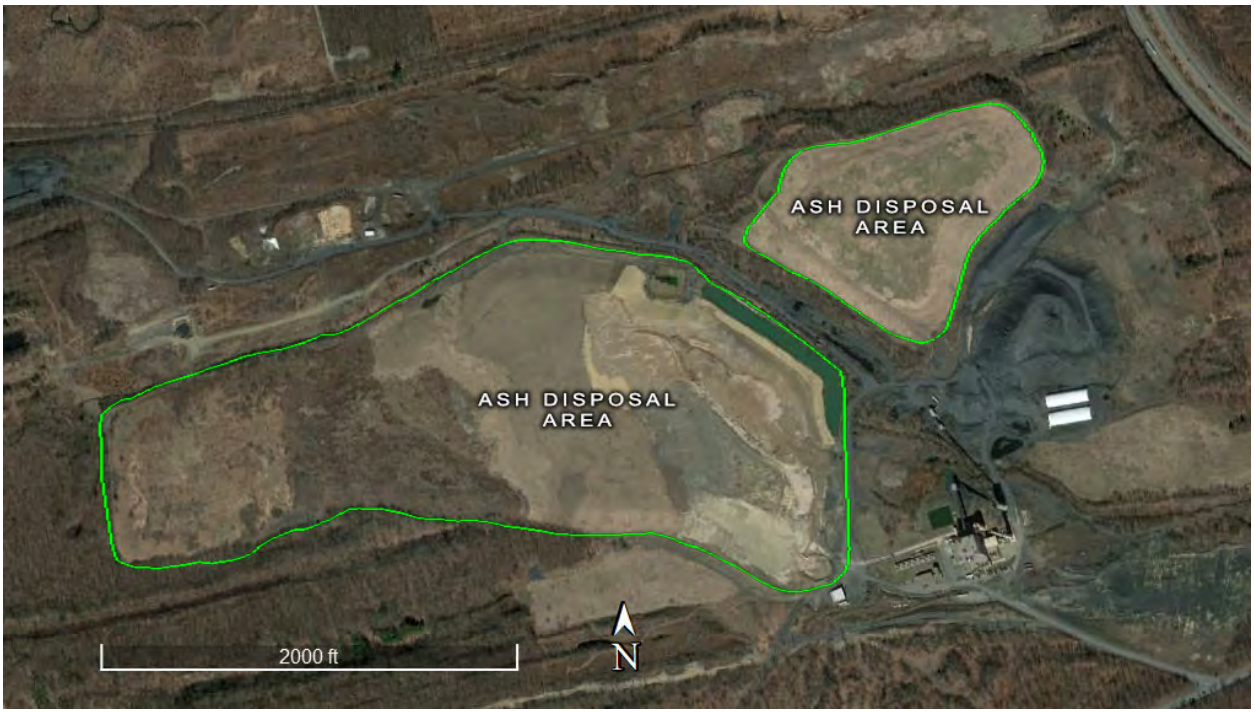
The two offsite landfills are located approximately 1.3 miles northwest of the power plant. These landfills (the Northern Ash Basin and the Southern Ash Basin) received fly ash and were closed in the late 1980s and 1990s respectively.

Residual Waste Ash Basin No.1 (not pictured) is an unlined, diked impoundment encompassing approximately 62.0 acres with 55 acres available for waste disposal. Ash Basin No. 1 received both bottom ash and fly ash, however, in 1955 PP&L (the facility's former owner) directed the fly ash to offsite disposal and beneficial use sites. Over the years Basin No. 1 also received coal rejects, Water Treatment Plant sludges, storm runoff and various treated plant waste. Since retirement of the Sunbury Power Plant in July of 2014, material placed in the Basin has consisted primarily of captive clean construction demolition wastes associated with construction of the Hummel Station Power Plant project. Based on the estimated bottom of the basin, there is approximately 1,200 acre-feet of disposed material within the impoundment. Approximately 55 acre-feet of the material is soil that is stockpiled for use during closure.

*Environmental Impacts*: No information available.

*Sources:* O'Brien and Gere, 2010b; PennDOT, 2017; Strawser, 2016; Cassell, 2015b

WESTWOOD POWER PLANT CCR DEPOSIT




Source: GoogleEarth, 2020; Polygons Source: Western Maryland Regional GIS Center, 2020

**Site Name:** Westwood Power Plant CCR Deposit

**State, County, City:** Pennsylvania, Schuylkill, Joliett

**Site Address:** Route 209 South, Tremont, PA 17981

**Coordinates**: 40°37'14.46"N, 76°27'5.52"W

**Owner:** WPS Power Development

**Number and Type of CCR Storage Units Onsite:** 2 Landfills

**Accepted Materials (e.g., fly ash, gypsum):** CCR leftovers from burning gob (culm) with limestone

**Estimated Quantity of CCRs:** Unknown

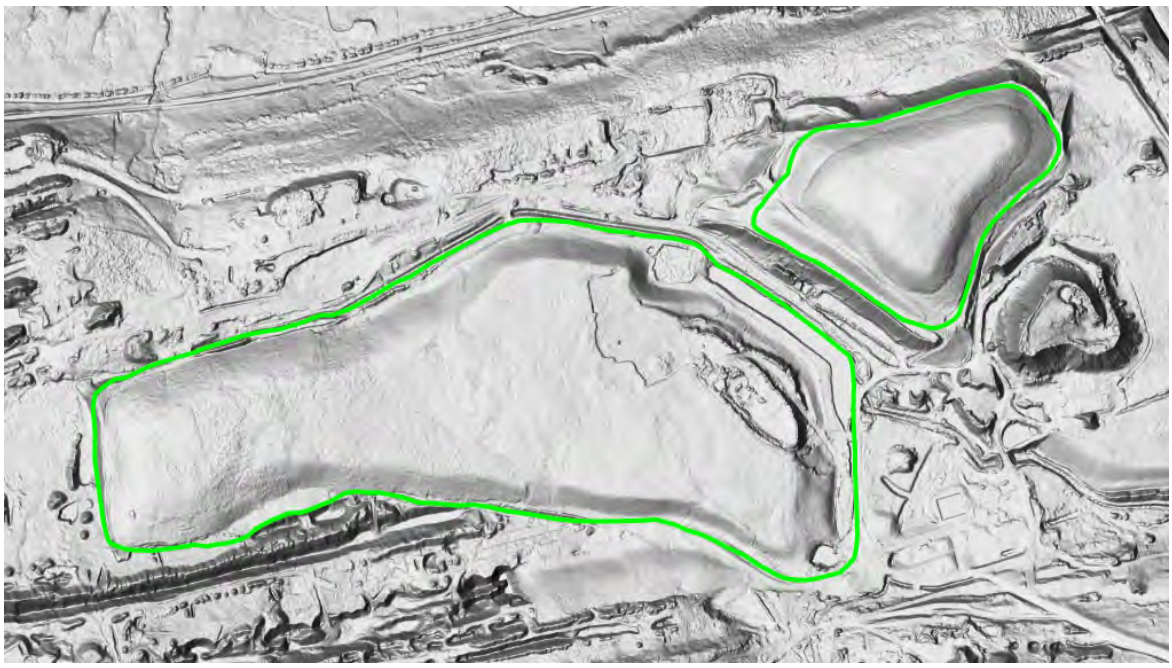
**Estimated Area:** 100 acres

**Beneficial Use Projects:** Mine reclamation

**CCB Compliance Website:** None

**Last Update:** November 2020

WESTWOOD POWER PLANT ASH DEPOSIT – LIDAR HILLSHADE



**Notes**

*Site History:* The Westwood Generating Station was built by CinCap VI, LLC and came online in 1987. It used waste anthracite coal to produce 36 megawatts of power. In September of 2000, WPS Power Development purchased the Westwood Generating Station from CinCap VI, LLC.

The coal combustion residuals (CCR) from this plant are deposited on site in landfills that have been permitted by the PADEP. The approximate locations of these permits are outlined on the aerial photo. The power plant uses a Circulating Fluidized Bed (CFB) boiler that converts waste coal into low-cost power. The plant burns waste anthracite coal (culm) in combination with crushed limestone, which reduces sulfur emissions during the combustion process. The plant burns approximately 1,200 tons of coal culm per day and 80 tons of limestone per day. The plant is equipped with an 8-module baghouse system with 2,016 filter bags, to further reduce plant emissions.

*Environmental Impacts:* No notable effects on water quality.

*Sources:* Legere, 2015; WPS Westwood Generation, 2021; Kraus, 1987; Kraus, 1986; Hornberg et al., 2005; USDOI, 2009.

*Virginia Sites*

AMELIA LANDFILL ASH DEPOSIT


Aerial Photo Source: Google Earth, 2019, Polygons: Source: Western MD Regional GIS Center, 2021

**Name:** Amelia Landfill

**State, County, City:** Virginia, Amelia, Jetersville

**Site Address:** 20221 Maplewood Rd, Jetersville, VA 23083

**Coordinates:** 37°18'20.82"N, 78° 3'48.51"W

**Owner:** Waste Management

**Number and Type of CCR Units Onsite:** County landfill

**Accepted Materials:** Fly and bottom ash

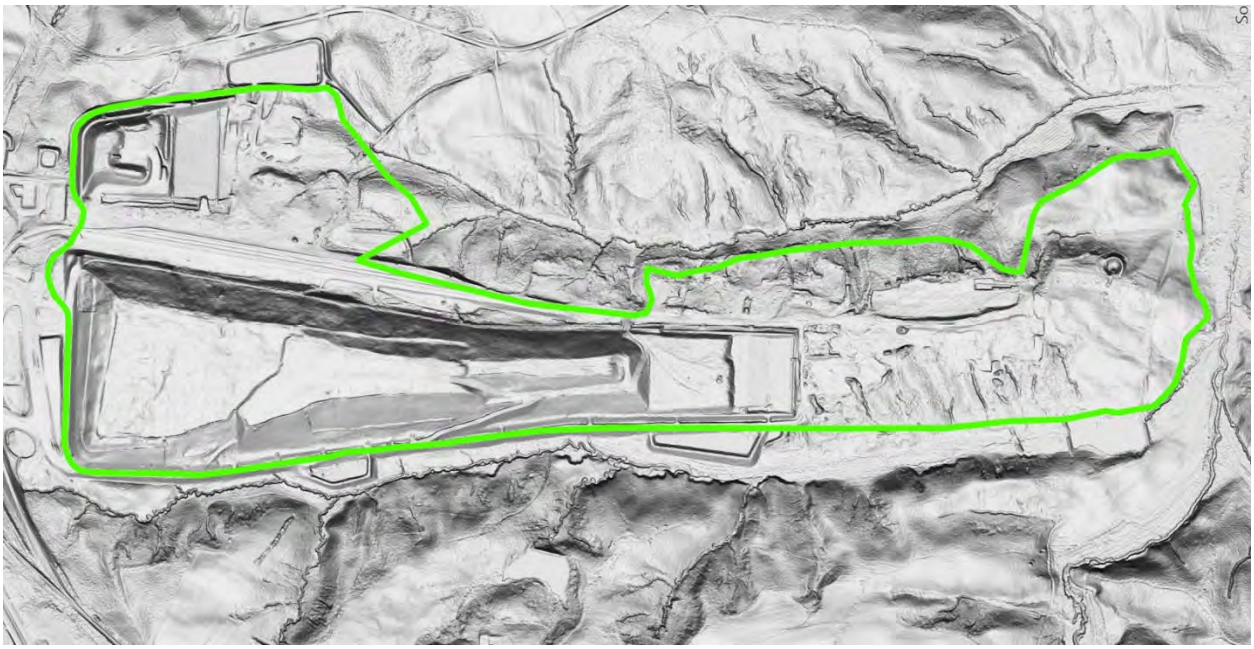
**Estimated Quantity of CCRs:** Over 1.5 million pounds

**Beneficial Use Projects:** Unknown

**CCR Compliance Website:** None

**Last Update:** February 2021

AMELIA LANDFILL ASH DEPOSIT– LIDAR HILLSDADE



*Site History:* The Maplewood Recycling and Waste Disposal Facility in Amelia County opened in 1993. It replaced the county-operated facility and privatized the disposal of the county's municipal solid waste. Amelia officials concurred with Waste Management and Federal officials that coal ash was not a hazardous waste and understood the county would generate extra revenue from the extra business of receiving ash.

Starting in 2015, the landfill received 1.5 million pounds from a Duke Energy coal ash impoundment at the Dan River Steam Station in Eden, North Carolina. Duke then agreed to close their pond, which had no liner, and move the ash to a modern landfill. It built one next to the former pond, but while construction was underway the utility shipped ash to the Amelia landfill. In addition to Duke Energy, the Amelia Landfill accepts ash from various Virginia power plants.

*Environmental Impacts:* No environmental concerns at this time.

*Sources:* Szkotak, 2016; Wastebins, 2021; Virginiaplaces.org, 2019; USAOC, 2016

BIRCHWOOD POWER PLANT CCR SITE


Source: Google Earth, 2020, Polygons: Source: Western MD Regional GIS Center, 2020

**Name:** Birchwood Power Plant

**State, County, City:** Virginia, King George County, King George

**Site Address:** 10900 Birchwood Drive King George, VA 22485

**Coordinates:** 38°16'34.57"N, 77°18'42.00"W

**Owner:** Co-owned by J-Power Development Company LTD and General Electric

**Number and Type of CCR Storage Units:** No onsite storage units. 1 offsite landfill.

**Accepted Materials:** Fly ash and bottom ash

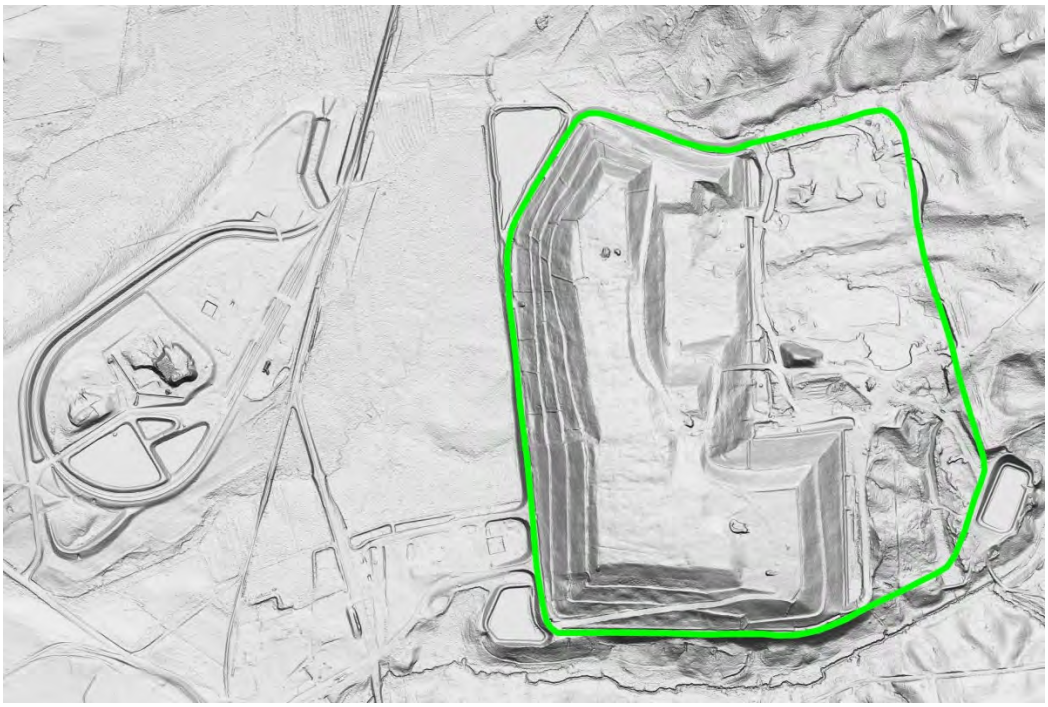
**Estimated Quantity of CCRs:** Unknown

**Beneficial Use Projects:** Partnered with a company for 4 years to beneficially use its ash to produce green products.

**CCR Compliance Website**: Unknown

**Last Update:** December 2020

BIRCHWOOD POWER PLANT CCR SITE – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, 2020, LIDAR data:

*Site History:* The Birchwood Power Plant was permitted and constructed in the early 1990s and began operation in 1996 as a high-efficiency plant with a full suite of emission controls for pollutants, including a high-efficiency fabric filter baghouse to control fly ash emissions. Introduced in 2016, GE Power's Digital Power Plant for Steam software, addressed machine performance to make the plant exceptionally efficient. It is scheduled to close in February 2021.

When the Birchwood Power Plant came online in 1996 it began depositing its ash in the King George County Landfill adjacent to the facility. This was done until 2005 when it partnered with Universal Aggregates to supply all of its ash for its facility that was constructed to turn ash into construction aggregate used to make lightweight, durable concrete blocks. Universal Aggregates processed all the ash produced at Birchwood (more than 100,000 tons a year) until 2009. Today the plant, once again, uses the landfill as a disposal site for its ash (see the figure above). There exists a $0.6-2MM / yr. ash disposal contract with the landfill & local trucking through until the plant closes in 2021.

*Environmental Impact:* The Birchwood Power Plant has no impact on the surrounding area. There has been no groundwater contamination, and no evidence of toxic chemicals present from the landfill.

*Sources:* Dennen, 2015; Dyson, 2020; Power Technoloy, 2017; Energy Justice Network, Birchwood Power; Gem.wiki, 2021; J-Power USA, 2021

BREMO POWER PLANT CCR SITE


Aerial Photo Source: Google Earth, 2020, Polygons: Source: Western MD Regional GIS Center, 2020

**Name:** Bremo Power Plant

**State, County, City:** Virginia, Fluvanna County, Bremo Bluff

**Site Address:** 1038 Bremo Rd., Bremo Bluff, VA 23022

**Coordinates:** 37°42'32.92"N, 78°17'14.34"W

**Owner:** Dominion Virginia Power

**Number and Type of CCR Storage Units Onsite:** 3 Ash ponds/impoundments

**Accepted Materials:** Fly ash and bottom ash

**Estimated Quantity of CCRs:** Ponds have either been dredged or are in the process of being dredged.

**Estimated Area of CCRs**: Over 40 acres

**Beneficial Use Projects:** Unknown

**CCR Compliance Website:** https://www.dominionenergy.com/projects-and-facilities/electric-projects/coal-ash/ccr-rule-compliance-data-and-information

**Last Update:** December 2020

BREMO POWER PLANT CCR SITE – LIDAR HILLSDADE

Source: Western MD Regional GIS Center, 2020, LIDAR data: vgin.maps.arcgis.com

*Site History:* The Power station was opened in 1931, and at the time had two units that strictly burned coal. These two units were shut down and replaced with two new coal-burning units in 1950 and 1958. In 2014 the two coal-powered units were converted to natural gas. In 2019 the two power units were placed in "cold reserve" to be used if more power is needed.

The West Ash Pond (WAP) is approximately 17 acres in size and was used as a water treatment pond to settle and manage low-volume wastewaters, including CCR. In 2014, the Station converted from a coal-fired power plant to a natural gas-fired power plant. No new CCR has been placed in the WAP after the conversion. The WAP contained approximately 327,000 cubic yards (CY) of CCR prior to the start of excavation activities.

The East Ash Pond (EAP) is an approximately 26.5-acre impoundment that was used for the storage of CCR from the Bremo Power Station. The pond was placed into service in the 1930s and was capped with soil fill in the mid-1980s except for the eastern portion of the pond, which remained wet, allowing pass-through of drainage from the adjacent area to the north. The EAP contained approximately 1,800,000 cubic yards of CCR prior to the start of excavation activities.

As of 2019, the majority of CCR in the West and East Ash Ponds has been emptied and removed to other sites or relocated to the North Ash Pond (NAP). Final CCR removal of all CCR will be disposed of in a designated off-site facility.

*Environmental Impacts:* After the remediation of the ash ponds, with the exception of the North Ash Pond, the only deleterious effect on the environment is a slightly elevated lithium level in the groundwater.

*Sources:* Ashtracker.org, 2017a; Golder Associates Inc., 2019a; Golder Associates, Inc., 2015; Golder Associates Inc., 2016; Gem.wiki, 2020a

CHESAPEAKE ENERGY CENTER CCR SITE


Aerial Photo Source: Google Earth, 2014, Polygons: Western Maryland Regional GIS Center, 2021

**Name:** Chesapeake Energy Center

**State, County, City:** Virginia, City of Chesapeake

**Site Address:** 2701 Vepco Street, Chesapeake, VA 23323

**Coordinates:** 36°45'47.84"N, 76°18'8.58"W

**Owner:** Dominion Virginia Power

**Number and Type of CCR Storage Units:** 1 Ash landfill and 1 ash impoundment

**Accepted Materials:** Bottom ash and Fly ash (Landfill)

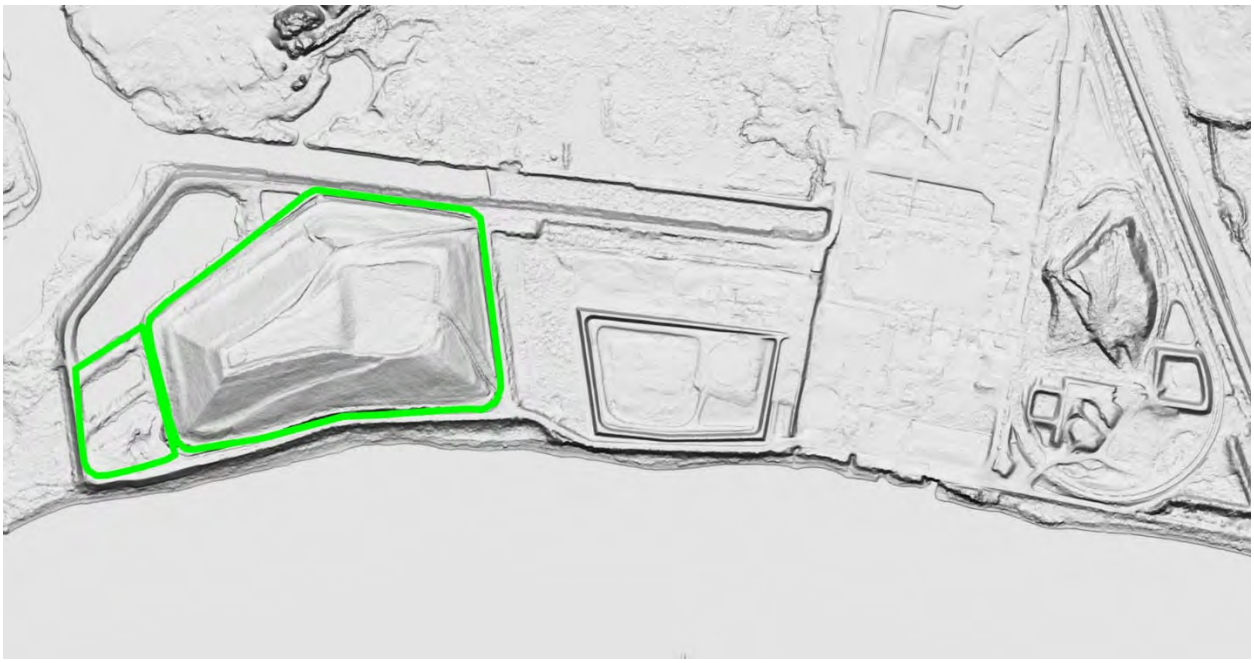
**Estimated Quantity of CCRs:** As of November 2018, the landfill contains approximately 975,000 cubic yards of CCR.

**Beneficial Use Projects:** Fly ash was used in the construction of the Battlefield Golf Course in Chesapeake, Virginia as well as in the making of concrete blocks.

**CCB Compliance Website:** https://www.dominionenergy.com/projects-and-facilities/electric-projects/coal-ash/ccr-rule-compliance-data-and-information

**Last Update:** January 2021

CHESAPEAKE ENERGY CENTER CCR SITE – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, 2021, LIDAR data: vgin.maps.arcgis.com

*Site History:* The CEC was developed in the early 1950s and operated on coal until the late 1960s. The station converted to oil in the 1970s and re-converted to coal in the 1980s. The four coal-fired generating units were removed from service as of 23 December 2014 and decommissioned as of 2016.

Prior to the 1980s, CCR from Chesapeake Energy Center (CEC) generating units was routed to the Historic Pond located on the peninsula. In the mid-1980s, a lined landfill, an unlined bottom ash pond, and an unlined sedimentation pond were constructed over the Historic Pond at CEC. During active plant operation, the Bottom Ash Pond received sluiced bottom ash from the plant, which was allowed to settle before being excavated and hauled to the adjacent CCR landfill for disposal or marketed for beneficial reuse. The Chesapeake Energy Center stopped producing CCR as it was decommissioned and demolished.

*Environmental Impact:* The following constituents were detected at levels above the Groundwater Protection Standard Exceedance at the Bottom Ash Pond: Arsenic, Beryllium, Cobalt, Lithium, Selenium, and Radium 226 and 228 (combined).

*Sources:* Golder Associates, Inc., 2020d; O'Brien and Gere, 2010a.

CHESTERFIELD POWER PLANT CCR SITE


Source: Google Earth, 2020, Polygons: Source: Western MD Regional GIS Center, 2020

**Name:** Chesterfield Power Plant

**State, County, City:** Virginia, Chesterfield County, Chester

**Site Address:** 500 Coxendale Rd., Chester, VA 23836

**Coordinates:** 37°22'55.86"N, 77°22'58.05"W

**Owner:** Dominion Virginia Power

**Number and Type of CCR Storage Units:** 2 Unlined ponds and 1 lined landfill along with a gypsum storage silo.

**Accepted Materials:** Fly & bottom ash, boiler slag, coal mill rejects, coal fines, and dredge materials.

**Estimated Quantity of CCRs:** Unknown

**Beneficial Use Projects:** Gypsum is collected and sent to be used in wallboard. Other by-products (fly ash) are used to make concrete blocks.

**CCR Compliance Website:** https://www.dominionenergy.com/projects-and-facilities/electric-projects/coal-ash/ccr-rule-compliance-data-and-information

**Last Update:** December 2020

CHESTERFIELD POWER PLANT CCR SITE – LIDAR HILLSHADE

Source: Google Earth, 2020, Polygons: Source: Western MD Regional GIS Center, 2020

*Site History*: The Chesterfield Power Station is Virginia's largest coal-fired power plant. By 1949, the site had a second coal-fired generator. Those units have been retired and replaced over the years with a set of six generators, two of which burn natural gas. Today, Chesterfield operates 2 gas generators and 2 coal-fired generators. The coal-fired generators will be retired in 2021.

Legislation passed during the 2019 Virginia General Assembly requires Dominion Energy to remove approximately 15 million cubic yards of coal ash currently stored in two closed coal ash ponds at Chesterfield Power Station within 15 years and directs the company to consult with Chesterfield County regarding a plan to address various transportation-related concerns, including fugitive dust. The coal ash must be recycled or placed in a lined landfill that meets Federal Coal Combustion Residuals (CCR) and Virginia CCR regulations.

In 2017 the upper and lower ponds were discontinued, and a 66-acre lined landfill was built. As of now only dry ash is being produced from the power plant. All of this ash is deposited in this landfill. Additionally, some ash from the two closed ponds was deposited at this site.

*Environmental Impacts:* Seepage from unlined ponds into the groundwater along the shoreline of the James River near the Chesterfield Power Station took place. Also, in 2016 certain groundwater monitoring wells at this site showed unsafe levels of manganese, arsenic, ammonia, and molybdenum.

*Sources:* Southern Environmental Law Center, 2017; Ashtracker.org, 2019b; GAI, 2016; GAI, 2018; Golder Associates, 2017; Golder Associates, 2020a, Golder Associates, 2020b; Geosyntec Consultants, 2018; Energy Justice Network, Chesterfield Power Station; Gem.wiki, 2020c

CLOVER POWER PLANT COAL ASH DEPOSIT


Aerial Photo Source: Google Earth, 2020, Polygons: Source: Western MD Regional GIS Center, 2020

**Site Name:** Clover Power Plant
**State, County, City:** Virginia, Halifax County, Clover
**Site Address:** 4091 Clover Road, Clover, VA 24534
**Coordinates:** 36°52'41.34"N, 78°42'59.18"W
**Owner:** Dominion Virginia Power 50%, Old Dominion Electric Cooperative 50%
**Number and Type of CCR Storage Units Onsite:** 1 Ash landfill, 5 settling ponds, and 2 sedimentation ponds
**Accepted Materials:** The landfill contains fly ash, bottom ash, gypsum, and coal mine rejects while the sedimentation ponds accept sludge from the plant. The settling ponds accept runoff (ash fines) from the landfill. The undefined landfill requires more investigation.
**Estimated Quantity of CCBs:** There were 6,420,000 cubic yards of ash in the landfill in 2019.
**Estimated Area of CCRs:** 78 Acres
**Beneficial Use Projects:** Unknown
**CCB Compliance Website:** https://www.dominionenergy.com/projects-and-facilities/electric-projects/coal-ash/ccr-rule-compliance-data-and-information
**Last Update:** November 2020

CLOVER POWER PLANT COAL ASH DEPOSIT – LIDAR HILLSHADE

Hillshading generated from LIDAR data from: vgin.maps.arcgis.com

**Notes**

*Site History:* The 881-MW Clover Power Station came online in 1995 and operates two primary pulverized coal-fired boilers nominally each rated at 4,085 MMBtu/hr for the purpose of generating electricity. The current landfill was developed and permitted as an industrial landfill for the management of CCR on October 17, 2000. There is also an undefined landfill south of the current landfill that must be investigated further.

Dominion has operated the Stage 3 landfill for disposal of CCRs produced at the Station since June 2002. The CCRs include fly ash, bottom ash, coal mill rejects, and gypsum. All ash produced by the power plant is trucked to the landfill as is the sludge from two nearby sedimentation ponds. The permitted area of the landfill comprises approximately 78.5 acres designated for CCR disposal. The area was subdivided into phases, all of which have now been constructed. Dominion plans to continue filling the Stage 3 landfill until it reaches its final design grades. At final capacity, this landfill will contain approximately 8,000,000 cubic yards of CCR material. As of 2019, ash-filled 80% of the landfill. The settling ponds are essentially stormwater runoff ponds and do not contain ash.

*Environmental Impact:* Although Clover's two sediment ponds do not meet EPA rules for handling and storage of coal ash waste, no notable water quality impacts have been found.

*Sources*: South Boston News & Mecklenburg Sun, 2020; Proctor, 2020; Energy Justice, 2021a; Old Dominion Electric Corporation, 2021; Earth Justice, 2014; Golder Associates, 2018a; Golder 2019b; TRC Environmental Corporation, 2018

PORTSMOUTH GENCO POWER PLANT CCR SITE


Source: Google Earth, 2020; Image Date, 2019, Polygons: Source: Western MD Regional GIS Center, 2020

**Name:** Portsmouth Genco Power Plant

**State, County, City**: Virginia, Portsmouth City, Portsmouth

**Site Address:** 1 Wild Duck Ln., Portsmouth, VA 23703

**Coordinates:** 36°52'9.77"N, 76°21'21.77"W

**Owner:** Quantum Energy Partners LLC

**Number and Type of CCR Storage Units:** Onsite fly ash impoundment (inactive), 1 landfill in North Carolina

**Accepted Materials:** Bottom ash and fly ash (impoundment)

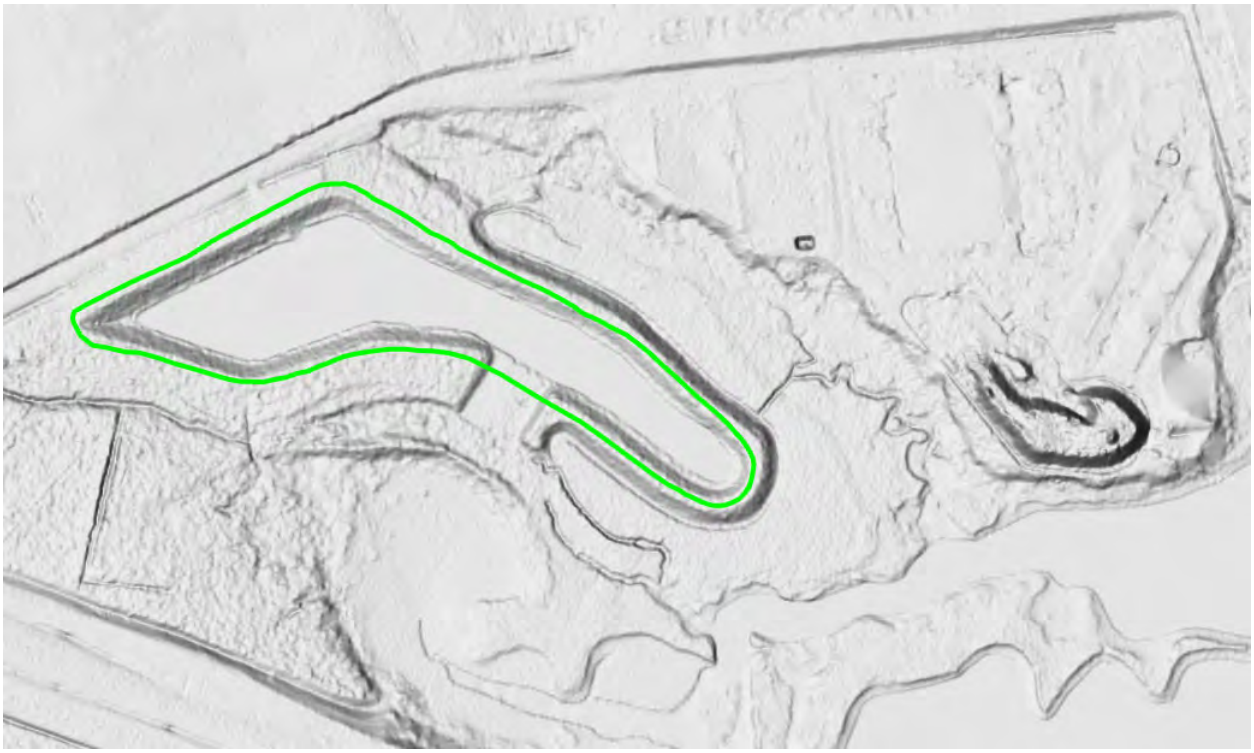
**Estimated Quantity of CCR:** Unknown

**Beneficial Use Projects:** Unknown

**CCB Compliance Website:** Unknown

**Last Update:** January 2021

PORTSMOUTH GENCO POWER PLANT CCR SITE – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, 2020, LIDAR data:

*Site* History: The Portsmouth Genco, LLC facility was an upgraded version of the plant originally developed and constructed by Cogentrix in 1988. The plant was a stoker coal-fired cogeneration facility. Although originally designed and commissioned as a cogeneration plant, Portsmouth no longer is operating and was decommissioned in June of 2015. In March of 2016, the plant was sold to Quantum Energy Partners LLC, a biomass developer.

When the Portsmouth GENCO Power Plant was in operation, bottom ash was deposited in an onsite ash impoundment that was subsequently dredged and hauled to an offsite landfill. Fly ash created from boilers was also hauled to an offsite landfill in North Carolina. According to a 2010 report, about 45,000 tons of coal ash from small power plants owned by Cogentrix (previous owner of Portsmouth GENCO) were used as structural fill on 12.8 acres of land at Alamac Road in Robeson County, North Carolina. This may or may not be the site where Portsmouth's ash was transported.

*Environmental Impact:* No environmental impact data currently available.

*Sources:* Walzer, 2012; BBEDL, 2021; Energy Justice Network, 2021b; Balasta, 2016; Sourcewatch Organization, 2020a; Southeast Coal Ash Organization, 2010; Newman et al.; 2021.

POSSUM POINT POWER PLANT COAL ASH DEPOSIT


Aerial Photo Source: Google Earth, 2020, Polygons: Source: Western MD Regional GIS Center, 2020

**Site Name:** Possum Point Power Plant

**State, County, City:** Virginia, Prince William, Dumfries

**Site Address:** 19000 Possum Point Road Dumfries, VA 22026

**Coordinates:** 38°32'52.24"N, 77°17'7.51"W

**Owner:** Dominion Virginia Power

**Number and Type of CCR Storage Units Onsite:** 1 Active impoundment – Pond D

**Accepted Materials:** Unspecified CCR, likely fly ash and bottom ash

**Estimated Quantity of CCRs:** 4 Million cubic yards (Pond D)

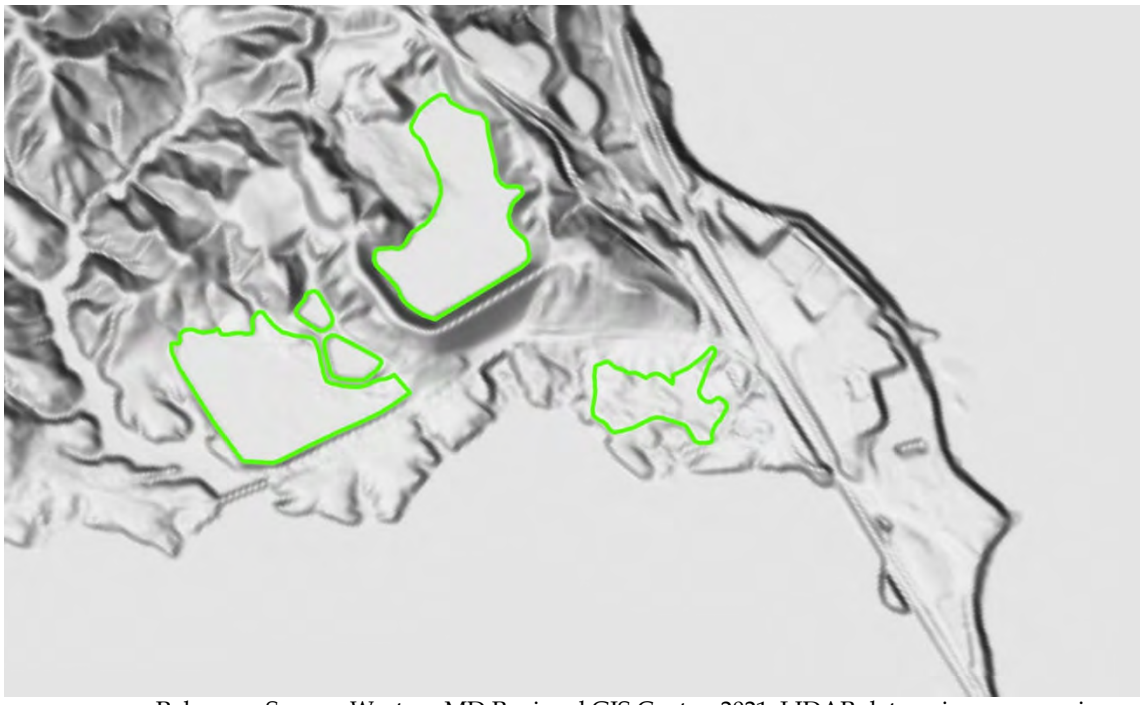
**Estimated Area of CCRs:** 64 Acres

**Beneficial Use Projects:** Dominion mentions recycling but nothing specific to this site

**CCR Compliance Website:** dominionenergy.com

**Last Update:** February 2021

POSSUM POINT POWER PLANT COAL ASH DEPOSIT – LIDAR HILLSHADE



Polygons: Source: Western MD Regional GIS Center, 2021; LIDAR data vgin.maps.arcgis.com

*Site History:* The Possum Point Power Plant was built in 1948 with two coal-fired boilers, Units 3 (107 MW) & 4 (232 MW), going online in 1955. These two coal units were converted to natural gas in 2003.

CCRs were first managed in Ponds A, B, & C, which were constructed in 1955, and closed several years later after they reached capacity. In later years, CCR went to Ponds D and E until the plant converted to natural gas in 2003. Pond E operated from 1968 to 2013. Beginning in 2015, CCR from impoundments A, B, C, and E were removed and consolidated to Pond D, which was reconstructed in 1988 with a clay liner. The 64-acre Pond D is estimated to contain 4 million cubic yards of CCR that are to either be recycled or moved to an approved, lined landfill. EPA and state regulations require the impoundment to be removed within 15 years. Dominion has not announced a closure plan as of February 2021. Recent legislation has prohibited Dominion from simply draining and capping Pond D.

*Environmental Impact:* Pollution from Pond D travels into nearby water bodies and groundwater. The Possum Point Power Station has 25 groundwater monitoring wells. Ten of these have been polluted above federal advisory levels. Groundwater at this site contains unsafe levels of manganese, nickel, cobalt, cadmium, arsenic, boron, and radium. Dominion has been ordered to pay for water testing for nearby residents and provide city water hookups where water wells have been contaminated.

*Sources*: Dominion Energy, 2020a; Energy Justice Network, Possum Point Power Station; IndustryAbout, 2015; Aquilogic, 2018; US Department of Energy, 1994; Berti, 2020

RIVERTON POWER PLANT CCR SITE


Aerial Photo Source: Google Earth, 2020, Polygons: Source: Western MD Regional GIS Center, 2020

**Site Name:** Riverton Power Plant

**State, County, City:** Virginia, Warren County, Riverton

**Site Address:** None, 0.5 miles south of Warren Co. Power Station

**Coordinates:** 38°57'40.97"N, 78°10'35.15"W

**Owner:** Unknown

**Number and Type of CCR Storage Units Onsite:** 1 Probable ash landfill

**Accepted Materials:** Unknown

**Estimated Quantity of CCRs:** Unknown

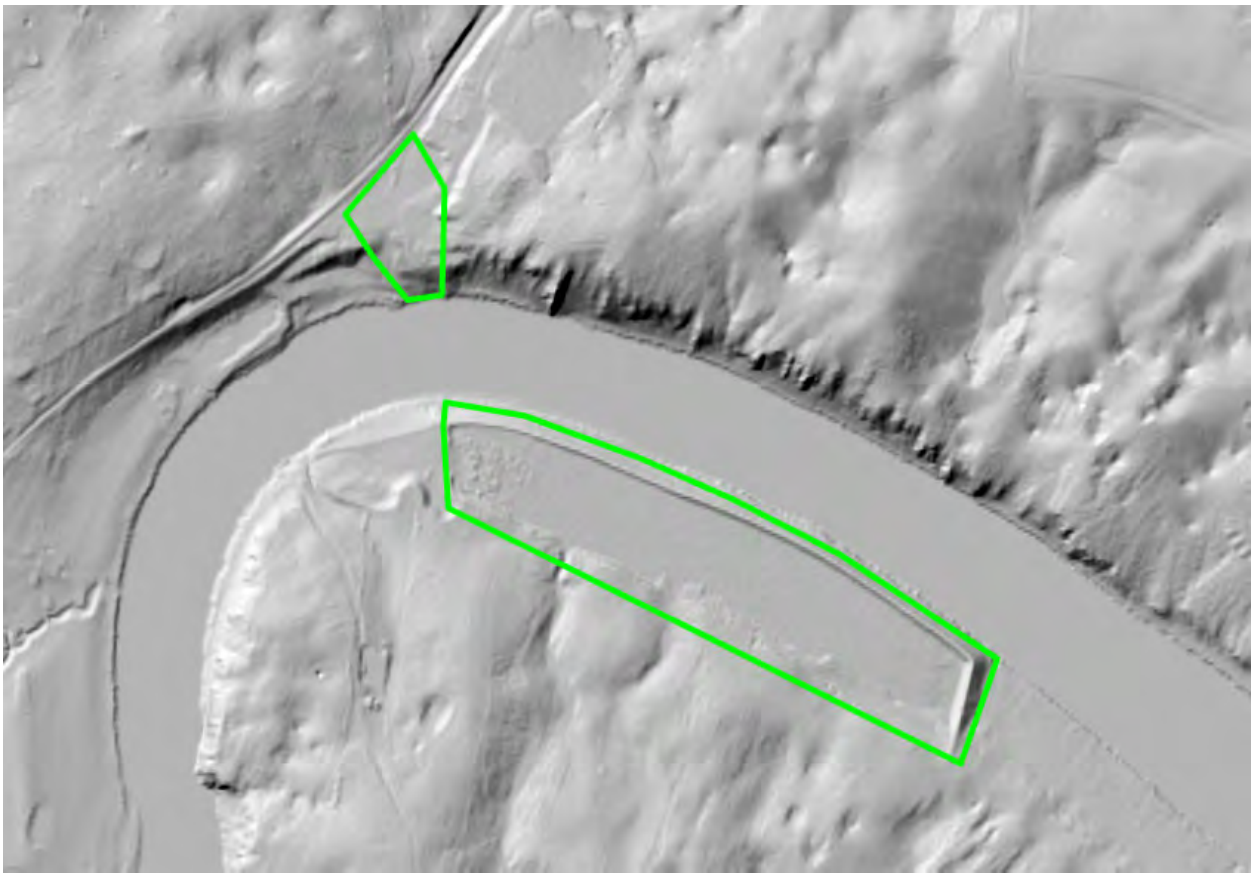
**Estimated Area of CCRs:** 20 Acres

**Beneficial Use Projects:** Unknown

**CCR Compliance Website:** None

**Last Update:** January 2021

RIVERTON POWER PLANT CCR SITE – LIDAR HILLSHADE



Polygons: Source: Western MD Regional GIS Center, 2020; LIDAR Hillshade server elevation.nationalmap.gov

*Site History:* The coal-fired, 35 megawatt Riverton Power Station was built by Potomac Edison of Virginia in 1949. The station, which was situated on limestone bluffs overlooking the Shenandoah River, was converted to burn oil in 1973. Operations continued until the plant was retired in 1983. A GIS investigation suggests the suspected CCR site is an impoundment/landfill directly south of the power plant across the Shenandoah River.

*Environmental Impact:* unknown

*Sources*: Small Town Papers, 1982

WESTROCK PAPER MILL POWER PLANT CCR SITE


Aerial Photo Source: Google Earth, 2016, Polygons: Source: Western MD Regional GIS Center, 2020

**Name:** Westrock Paper Mill

**State, County, City:** Virginia, Alleghany County, Covington

**Site Address:** 104 W. Riverside Street, Covington, VA 24426

**Coordinates:** 37°48'19.25"N, 80° 0'12.64"W

**Owner:** Westrock

**Number and Type of CCR Storage Units Onsite:** 3 Fly ash landfills

**Accepted Materials**: The newest Landfill would take fly ash, lime mud, wastewater treatment sludge, and general mill trash such as office paper and demolition debris. Older landfill's contents are unknown other than fly ash.

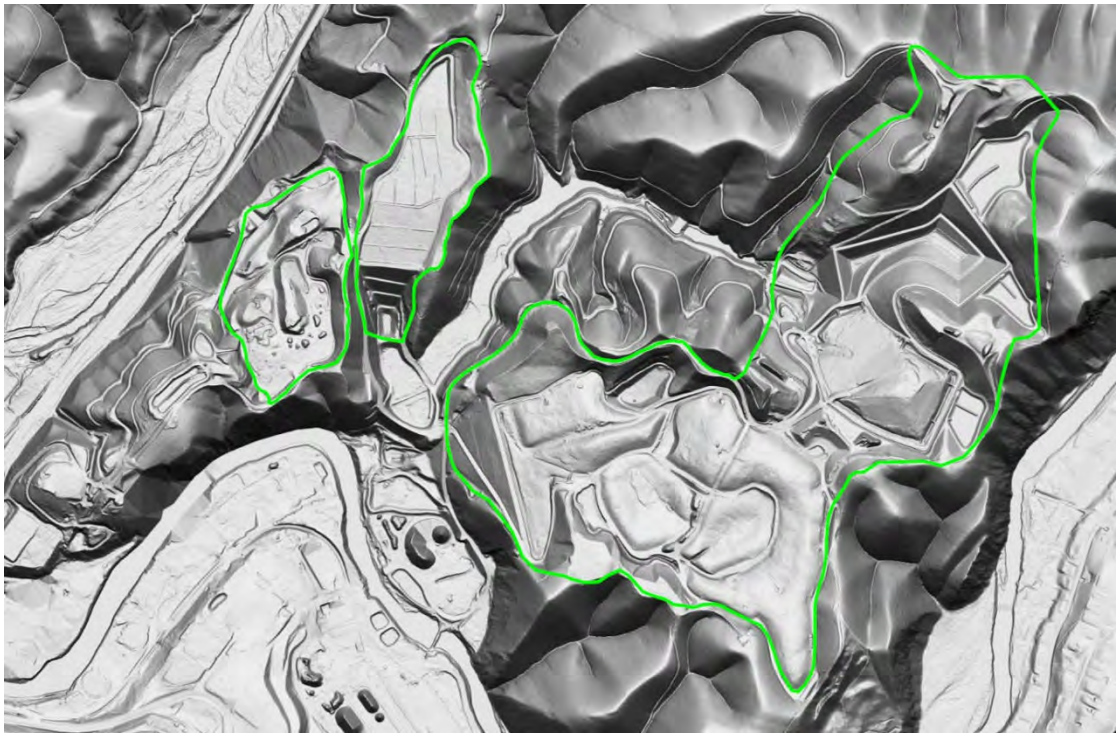
**Estimated Quantity of CCRs**: Unknown

**Beneficial Use Projects:** Some fly ash is used beneficially but no specific projects are known.

**CCR Compliance Website:** None

**Last Update:** December 2020

WESTROCK PAPER MILL POWER PLANT CCR SITE – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, 2020, LIDAR data: vgin.maps.arcgis.com

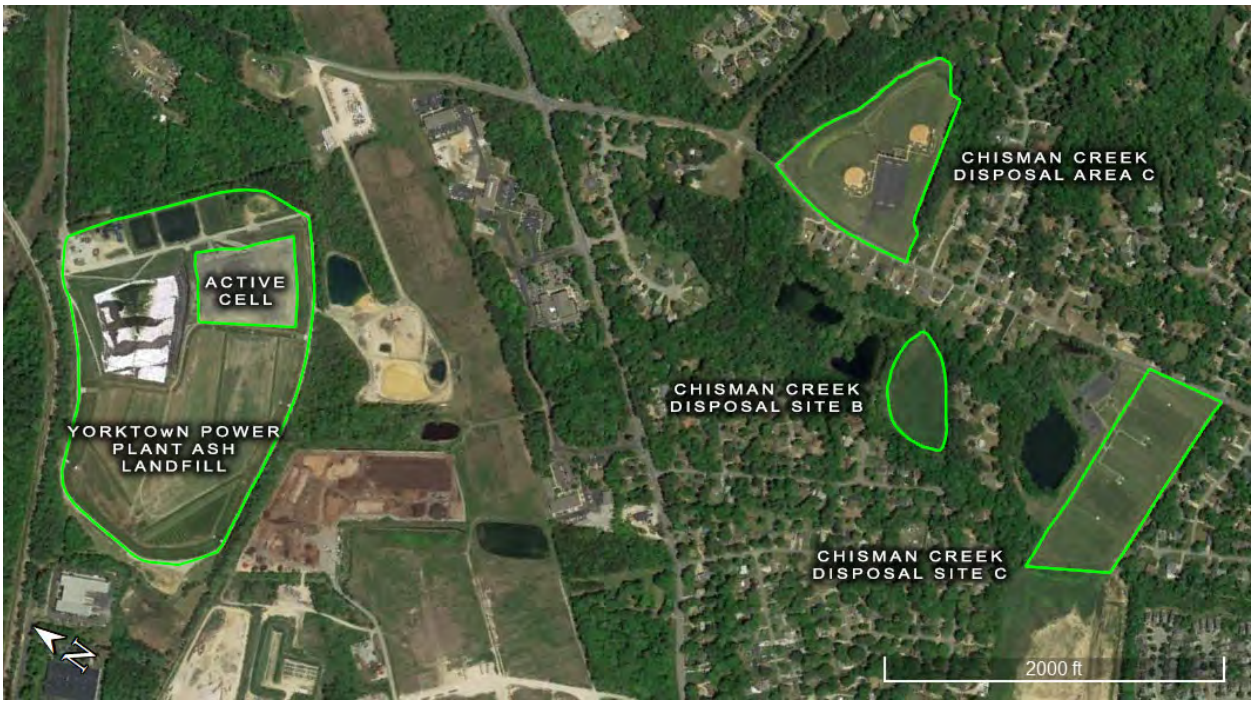
*Site History:* Prior to constructing and placing its open-loop biomass cogeneration facility into service in 2013, WestRock's (Mead/Westvaco at the time) paper mill had eight boilers that burned various types of fuel, including coal, natural gas, fuel oil, and black liquor that met the paper mill's steam needs. WestRock began constructing its open-loop biomass cogeneration facility in October 2011. WestRock also retrofitted one of its pre-existing boilers to supply steam to a new steam turbine generator to generate electricity. The corporation Westrock was formed in 2015 after the merger of Mead/Westvaco and RockTenn. Currently, the plant only uses a small bit of coal for heating purposes.

In 1994 Westvaco built a 66-acre state-of-the-art landfill on a 228-acre site behind the mill. The landfill replaced three old ones, also built before state rules took effect. The new landfill would take fly ash, lime mud, which is a calcium carbonate byproduct of wastewater treatment sludge, and general mill trash such as office paper and demolition debris. The landfill has liners made of impermeable plastic and a drain system to collect liquid and pipe it back to Westrock's wastewater treatment plant. There is no information regarding the specific makeup of the older landfills. To optimize its management of fly ash the mill converted its boiler ash handling system from a water-managed to a dry ash system in 2017 enabling lagoons to be closed. The dry ash can then be used as cement aggregate.

*Environmental Impact:* As of 2020 Westrock has cleaned up its water quality problems and now does not emit chemicals above EPA standards.

*Sources:* Easton, 2017; Easton, 2015; Reid, 2014; Energy Justice Network, Westvaco Covington; MeadWestvaco Corporation, 2011; Chittum, 2012; Watro, 2017; Griggsby, 2018; McCue, 1994

YORKTOWN POWER PLANT CCR SITE




Aerial Photo Source: Google Earth, 2018, Polygons: Source: Western MD Regional GIS Center, 2020

**Name:** Yorktown Power Plant

**State, County, City:** Virginia, York County, Yorktown

**Site Address:** 1600 Waterview Rd., Yorktown, VA 23692

**Coordinates:** 37°11'11.36"N, 76°28'18.72"W

**Owner:** Dominion Virginian Power

**Number and Type of CCR Storage Units:** 1 Offsite landfill and 3 historic landfills

**Accepted Materials:** Fly ash, bottom ash, pyrites, and limestone injection multi-stage burner ash (current landfill).

**Estimated Quantity of CCRs:** Unknown

**Estimated Area:** 48 Acres

**Beneficial Use Projects:** Unknown

**CCR Compliance Website:** https://www.dominionenergy.com/projects-and-facilities/electric-projects/coal-ash/ccr-rule-compliance-data-and-information

**Last Update:** January 2021

YORKTOWN POWER PLANT CCR SITE – LIDAR HILLSHADE

Source: Western MD Regional GIS Center, 2020, LIDAR data: vgin.maps.arcgis.com

*Site History:* The Yorktown Power Station has been burning coal and oil at various times in its long history of operation (since 1957). On Sept. 1, 2011, Dominion announced plans to close one of two coal-fired units at the Yorktown Power Station by 2015 and convert the second coal-fired unit to natural gas. In 2015 Dominion received an exemption to operate the two coal units of Yorktown into the spring of 2017. However, in June 2017 the plant received an emergency order by the U.S. Department of Energy to operate through September 14, 2017, on a "very limited basis" as necessary if electrical loads are high over the summer. Both coal units will be retired for good in 2021.

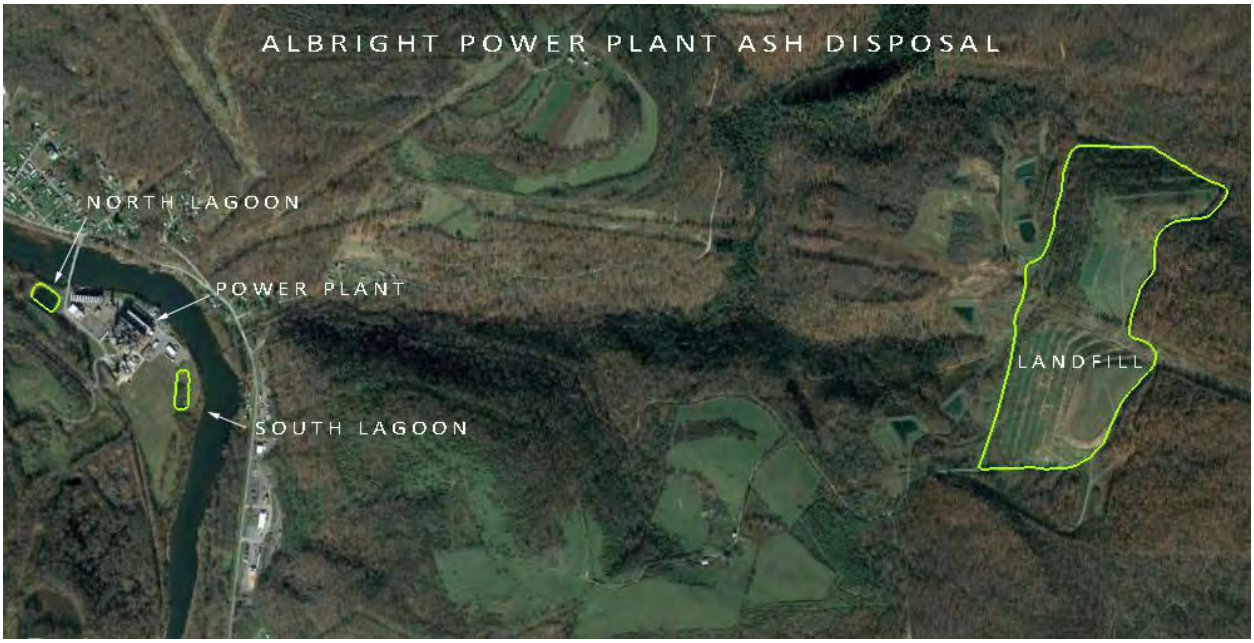
Dominion has operated the landfill for disposal of CCBs produced at the power plant since the early 1980s. The CCBs include fly ash, bottom ash, pyrites, and limestone injection multi-stage burner ash. The permitted area of the landfill comprises approximately 48 acres designated for placement of CCBs. The area is divided into 12 cells. Cells 1 through 11 have received CCBs and are covered with intermediate cover soil. Cell 12 is currently open and active (see Figure above). There are three other sites near Chisman Creek where 500,000 tons of coal combustion residuals from the Yorktown Power Generating Station were disposed of from 1957 to 1974. The CCBs included fly ash and bottom ash from burning coal mixed with petroleum coke. These sites are now considered Superfund Sites.

*Environmental Impacts:* The Yorktown Landfill has several groundwater monitoring wells. One of these wells has been polluted above federal advisory limits. Groundwater at this site contains unsafe levels of molybdenum. The Superfund Sites continue to be monitored for any groundwater problems.

*Sources:* Fearing, 2019; EPA, 2021; Dominion Energy, 2020a; Gem.wiki, 2020f; Golder Associates, 2018b; Golder Associates, 2020c

*West Virginia Sites*

ALBRIGHT POWER PLANT ASH DEPOSIT




Aerial Photo Source: Google Earth, Polygons: Western MD Regional GIS Center, 2020

**Site Name:** Albright Power Plant Ash Deposit

**State, County, City:** West Virginia, Preston County, Albright

**Site Address:** 530 Power Plant Rd., Albright, WV 26519

**Coordinates:** 39°29'16.15"N, 79°36'16.58"W

**Owner:** Monongahela Power Company

**Number and Type of CCB Storage Units Onsite:** Appears to be one landfill approximately 1.75 miles east of the power plant two small impoundments.

**Accepted Materials:** Fly ash and bottom ash in landfill

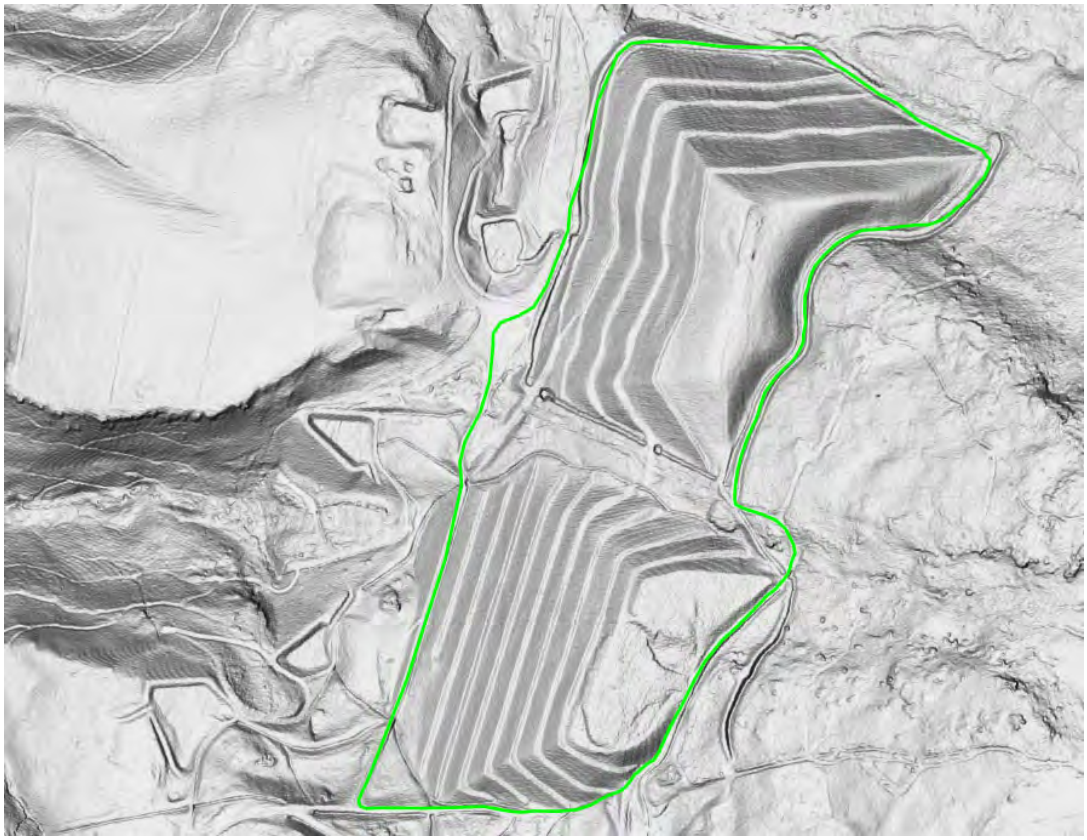
**Estimated Quantity of CCBs:** Ponds were dredged in 2012, landfill not known

**Beneficial Use Projects:** Some ash was taken for beneficial use but no further details are available

**CCR Compliance Website:** https://armgroup.net/projects/albright-power-station-closed-landfill/

**Last Update:** September 2020

ALBRIGHT POWER PLANT ASH DEPOSIT – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, Pennsylvania PASDA, USGS LIDAR 2017

**Notes:**

*Site History:* At one time impoundments on the premises of the Albright Power Plant held coal combustion residuals (CCR). When the plant ceased operations in 2012 CCR was no longer handled at the facility. The power plant has not operated since August 2012 and the decommissioning of the plant took place at that time. The decommissioning process included the removal of all coal, dredging of the two impoundments, and removal of all chemicals from the property. During the operation of the facility, CCR was trucked to a nearby landfill.

*Environmental Impacts:* Groundwater at the landfill site contains unsafe levels of nickel, manganese, thallium, sulfate, antimony, chromium, lead, arsenic, boron, and selenium. FirstEnergy admitted that discharges from Albright's landfills contaminated groundwater in excess of state standards for thallium and federal standards for chromium and nickel. In 2011, the facility was the subject of a citizen suit alleging violations of the Clean Water Act imposed limits on arsenic discharges from its impoundments. As a result of this suit, FirstEnergy agreed to close the power plant and stop disposing of coal combustion waste at this facility. (ashtracker.org)

*Sources:* Ashtracker.org, 2020a; ARM Group, 2020; MonPower, 2014; Global Energy Monitor, 2020

MT STORM POWER PLANT ASH DEPOSIT


Aerial Photo Source: Google Earth, Polygons: Western MD Regional GIS Center, 2020

**Site Name:** Mt Storm Power Plant Ash Deposit

**State, County, City:** West Virginia, Grant County, Mt. Storm

**Site Address:** 436 Dominion Boulevard, Mt. Storm, West Virginia

**Coordinates:** 39°11'34.68"N, 79°16'54.25"W

**Owner:** Dominion

**Number and Type of CCR Storage Units Onsite:** 2 Onsite landfills, 5 onsite low volume waste ponds

**Accepted Materials:** Fly & bottom ash, FGD materials

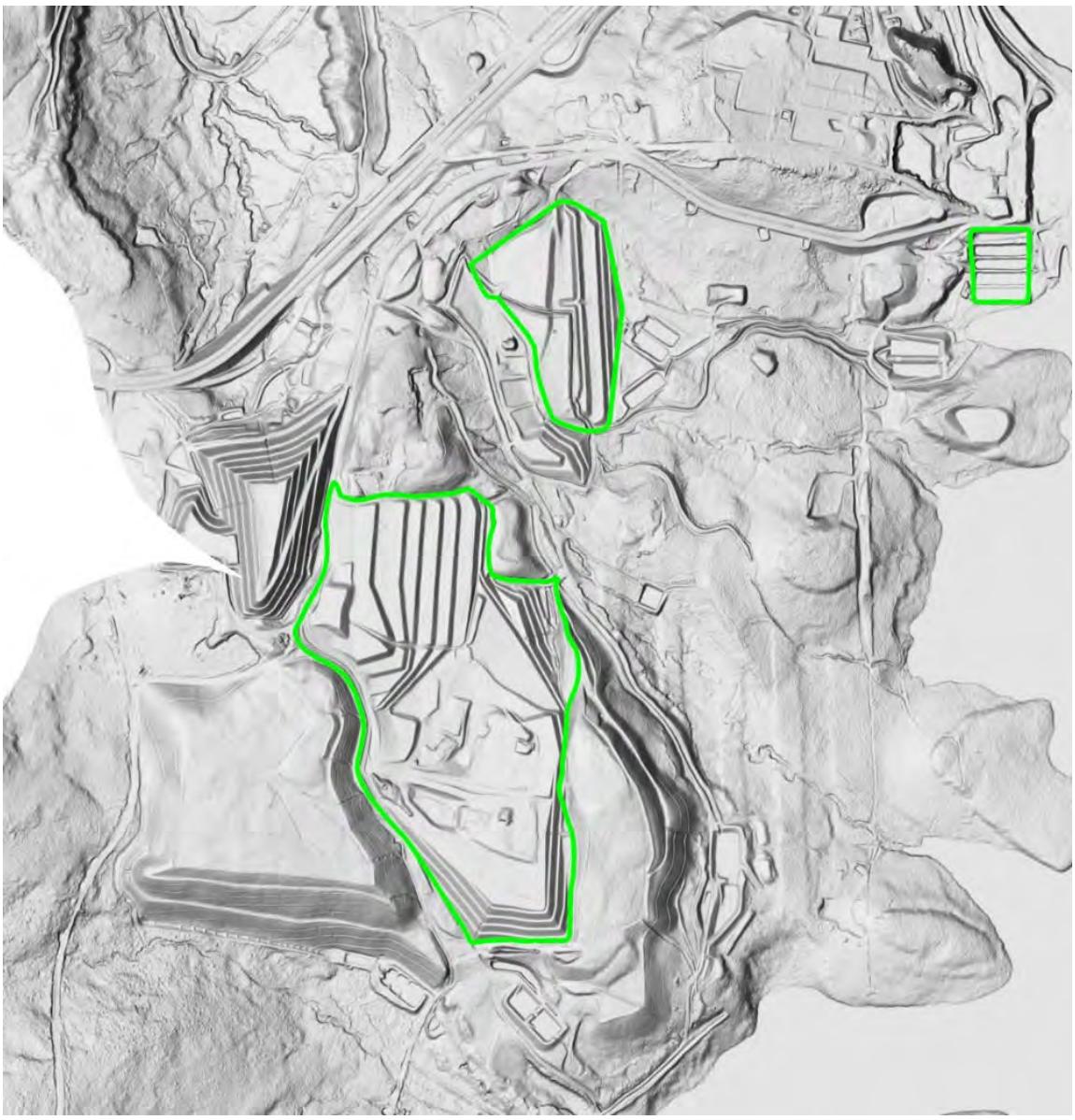
**Estimated Quantity of CCRs:** 50 Million tons

**Beneficial Use Projects:** FGD sludge used for mine reclamation and cement

**CCB Compliance Website:** https://www.dominionenergy.com/projects-and-facilities/electric-projects/coal-ash/ccr-rule-compliance-data-and-information

**Last Update:** February 2021

MT STORM POWER PLANT ASH DEPOSIT – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, WV LIDAR

*Site History:* The three boiler, 1,662 megawatt, coal-fired Mt. Storm Power Station and adjoining 1,200-acre Mt. Storm Lake were constructed in 1965. The Station is located approximately 40 miles south-southwest of Cumberland, Maryland. The first power generation turbine at the Station went online in September 1965 and was followed by the second turbine in June 1966. The third turbine went online in December 1973.

The Mt. Storm Power Station consists of four major areas which include the Powerhouse, the active Phase A Flue Gas Desulfurization (FGD) By-Product Disposal Facility, the Closed Five-Year Storage Disposal Facility site, and the active Phase B Ash Disposal Facility. The Phase A facility encompasses an approximate permitted area of 235 acres and the Phase B landfill contains approximately 426 acres. The Low Volume Sedimentation Ponds, fly ash and bottom

ash hoppers, and FGD building are included in the Powerhouse area of the facility. Fly ash, bottom ash, and FGD are designed to be transported by truck to the onsite Phase A or Phase B landfills. Bottom ash is either transported to an onsite bottom ash screening operation for off-site beneficial reuse or to the Phase B Landfill for disposal. FGD material is either transported off-site for beneficial reuse or sent to the Phase A Landfill for disposal. The Phase A and B landfill facilities consist of active waste disposal areas, sediment ponds, and leachate management areas. The Station Low Volume Sedimentation Ponds receive a variety of Power Station wastewaters for treatment. Included in the wastewater streams received is bottom ash dewatering water, including bottom ash fines, which are settled out in the ponds. Periodically, the ponds are dredged of settled solids, which are then transported by truck to the Phase B Landfill for disposal.

Calculations from historical Energy Information Administration coal consumption data indicate approximately 50 million tons of may be present.

Older ash landfills exist onsite and not covered here due to the lack of publicly available information. Further research is necessary.

*Environmental Impacts:* Ashtracker.org reports several monitoring locations to have pollutants exceeding water quality standards.

*Sources:* Ashtracker.org, 2020b; Dominion Energy, 2015; Dominion Energy, 2020a; McElhinny, 2020; Earth Justice, 2020

RP SMITH POWER PLANT ASH DEPOSIT


Aerial Photo Source: Google Earth, Polygons: Western MD Regional GIS Center, 2021

**Site Name:** RP Smith Power Plant Ash Deposit

**State, County, City:** Facilities east of river: Maryland, Washington County, Williamsport

Facilities west of river: West Virginia, Berkeley County, Marlowe

**Site Address:** Ripple Way Road, Marlowe, WV 25419

**Coordinates:** 39°35'19.62"N, 77°50'0.22"W

**Owner:** FirstEnergy

**Number and Type of CCR Storage Units Onsite:** 4 Impoundments, 1 landfill

**Accepted Materials:** Fly ash and bottom ash

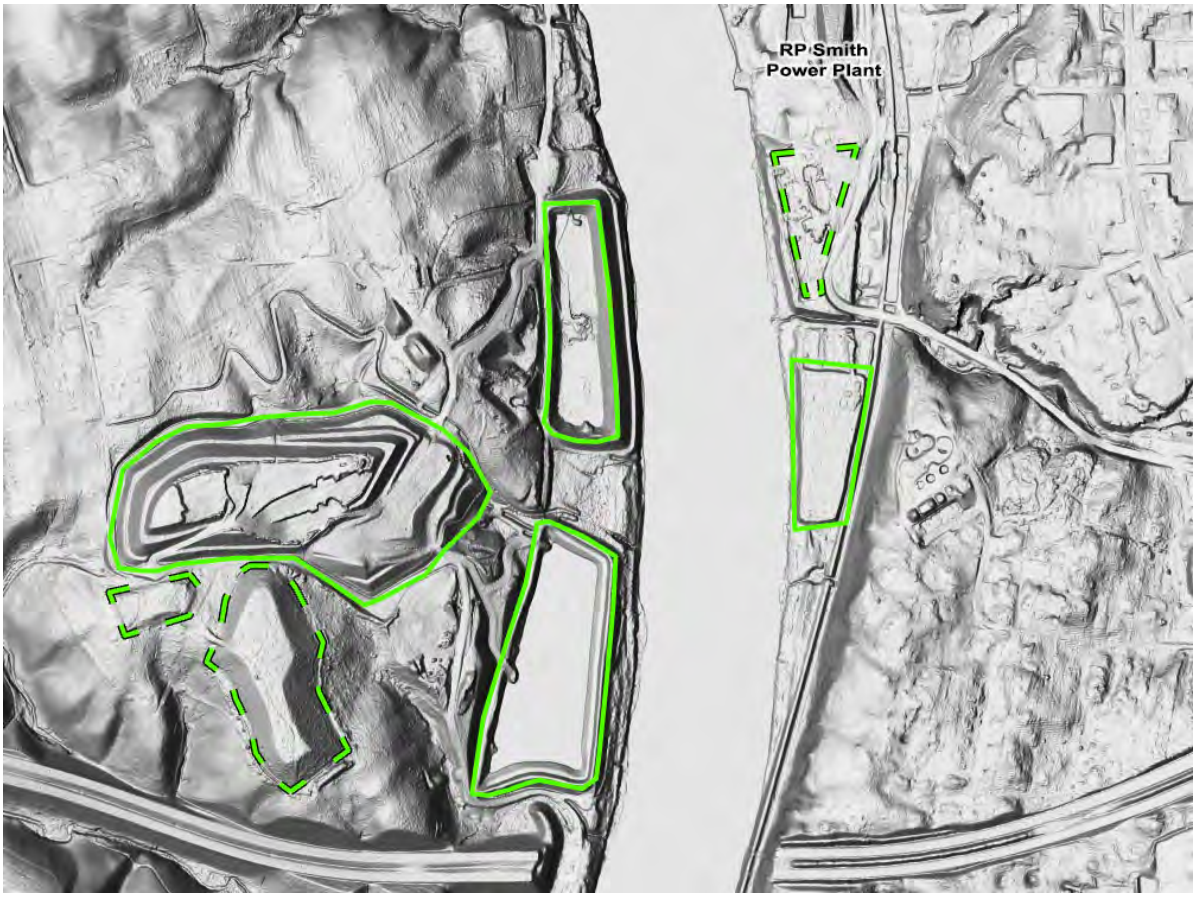
**Estimated Quantity of CCRs:** The CCR landfill has been removed. CCR remains on the Maryland side in a retired impoundment.

**Beneficial Use Projects:** The CCR landfill has been recycled into cement.

**CCR Compliance Website:** None

**Last Update:** February 2021

RP SMITH PLANT ASH DEPOSIT – LIDAR HILLSHADE




Source: Site Polygons - Western MD Regional GIS Center, LIDAR MD IMAP

*Site History:* The first generating unit at the RP Smith Plant began service in 1927 as part of the West Penn Electric Company. The 1927 unit was replaced by a new unit in 1947 with a nameplate capacity of 34.5 MW. An additional 75 MW operating unit was constructed in 1958, bringing the capacity to 115 MW. In 1960 the West Penn Electric Company was renamed Allegheny Power System, Inc. The RP Smith station was one of six FirstEnergy stations to be retired in 2012. In its last years, the plant was operated intermittently. FirstEnergy ceased plant operations on September 1, 2012.

Up to 50,000 tons of CCR were generated annually. Ash Ponds #3 and #4 were constructed in the 1960s to receive ash sluiced from the power plant across the river. Allegany Energy noted in one report, that Pond #1 (removed) and Pond #2 (filled with soil and covered with grass) used to exist on the Maryland side at the power plant site, but they were retired in the 1960s (2012 Dam Assessment Report). GIS measurements indicate there may be over 800,000 cubic yards of material present at the southern impoundment on the Maryland side. It is unknown how much of this material is ash vs. soil fill. Removal and recycling of the 30-acre CCR landfill on the West Virginia side of the river began in 2009 and was nearly complete as of 2020. More than 3 million tons of CCR were delivered to the cement industry for recycling into cement.

*Environmental Impacts:* none known

*Sources:* CHA Consulting, 2010; MDE, 2008-2017; Lee et al, 2015

*References*

## *5.0 REFERENCES*


Allegany County, Maryland, 2011. Solid Waste Management Plan: Revised 2/2011 for the 2011-2021 Planning Period.

Allegany County, Maryland, 2021. https://gov.allconet.org/305/Mountainview-Landfill, accessed 2/15/21.

Aquilogic, 2018. Memorandum: Review of Groundwater Conditions, Ash Pond D at the Possum Point Power Station, Project No. 019-08, January 15, 2018. https://www.southernenvironment.org/uploads/words_docs/Expert_Memo_Possum_Point.pdf, accessed 4/21/21.

ArchCoal, 2012. Arch Coal's Vindex Energy Earns Third State Maryland Excellence in Reforestation Award. http://news.archcoal.com/news-releases/news-release-details/arch-coals-vindex-energy-earns-third-state-maryland-excellence?ID=1710600&c=107109&p=irol-newsArticle, accessed 7/7/17.

ARM Group, LLC, 2020. Albright Power Station Closed Landfill. https://armgroup.net/projects/albright-power-station-closed-landfill/, accessed December 2020.

Ashtracker.org, 2017a. Bremo Power Plant. https://ashtracker.org/facility/233/bremo-power-station, accessed 4/20/21.

Ashtracker.org, 2017b. Hunlock Power Station. https://ashtracker.org/facility/186/hunlock-power-station, accessed 4/8/21.

Ashtracker.org, 2017c. Weber Ash Disposal Site. https://ashtracker.org/facility/218/weber-ash-disposal-site, accessed 3/15/20.

Ashtracker.org, 2019a. Brunner Island Power Plant. https://ashtracker.org/facility/241/brunner-island-power-plant, accessed 4/15/21.

Ashtracker.org, 2019b. Chesterfield Power Plant. https://ashtracker.org/facility/105/chesterfield-power-station, accessed 4/22/21.

Ashtracker.org, 2020. Mount Storm Power Station. https://ashtracker.org/facility/461/mount-storm-power-station, accessed 4/27/21.

Balasta, Selene, 2016. Biomass developer wins FERC approval to acquire deactivated coal plant. S&P Global Market Intelligence. May 31, 2016.

https://www.spglobal.com/marketintelligence/en/news-insights/trending/zcbavmkxatzzfmus9thmaw2, accessed 4/28/21.

Barr, Sheryl, 2012. Crownsville tire dump owners face $32M in penalties. *Capital Gazette*, December 1, 2012. http://www.capitalgazette.com/cg2-arc-02ec36c8-f4cd-5e5e-80cf-d7eb2fa9d890-20121128-story.html, accessed 7/5/17.

Berti, Daniel, 2020. No decision yet on plans for Possum Point coal ash, Dominion says. *Prince William Times*, December 23, 2020. https://www.princewilliamtimes.com/news/no-decisions-yet-on-plans-for-possum-point-coal-ash-dominion-says/article_3eb0fc10-15df-11ea-a3cc-37e628cc8547.html, accessed 4/21/21.

Blue Ridge Environmental Defense League (BREDL), 2021. Coal Fired Electric Power Plants in Virginia. https://www.bredl.org/air/coal-fired_powerplants/va-portsmouth.asp, accessed 4/28/21.

Brubaker, Jake, 2002. Down the Susquehanna to the Chesapeake. *The Pennsylvania State University Press*. https://www.google.com/books/edition/Down_the_Susquehanna_to_the_Chesapeake/l3VccowaxDoC?hl=en&gbpv=0&kptab=overview#spf=1619530125191, accessed 4/27/21.

Cassell, Barry, 2012. Court Approves AES Eastern Sale of Four Dead Coal Plants. https://www.transmissionhub.com/articles/2012/10/court-approves-aes-eastern-sale-of-four-dead-coal-plants.html, accessed 3/15/21.

Cassell, Barry, 2015a. "NRG permits coal to gas conversion at Shawville plant in Pennsylvania." Power Magazine, September 28, 2015. https://www.power-eng.com/2015/09/28/nrg-permits-coal-to-gas-conversion-at-shawville-plant-in-pennsylvania/#gref, accessed 4/15/21.

Cassell, Barry, 2015b. "NRG permits coal to gas conversion at Shawville plant in Pennsylvania." Utility Products, September 28, 2015. https://www.utilityproducts.com/home/article/16005658/nrg-permits-coaltogas-conversion-at-shawville-plant-in-pennsylvania, accessed 4/15/21.

CHA Consulting, Inc., 2010. Assessment of Dam Safety Coal Combustion Surface Impoundments (Task 3) Final Report: Allegheny Energy R. Paul Smith Station, April 21, 2010. https://archive.epa.gov/epawaste/nonhaz/industrial/special/fossil/web/pdf/ae-paul-final.pdf, accessed 4/29/2021.

Chittum, Matt, 2012. Mill goes the extra environmental mile. *The Roanoke Times*. 21 July 2012. https://roanoke.com/webmin/business/mill-goes-the-extra-environmental-mile/article_3486a5e5-652b-5294-978c-28628498a501.html, accessed 4/21/21.

Coal Diver, 2020. Carlos Surface Mine. http://coaldiver.org/msha-id/1800769, accessed December 2020.

The Coal Industry, 1920. Yearly Index: Volume 3. https://www.google.com/books/edition/The_Coal_Industry/TaQyAQAAMAAJ?hl=en&gbpv=0&kptab=overview#spf=1619530618139, accessed 4/27/21.

Crable, AD, 2009. Ash basin passes test. *Lancaster Online*. 29 January 2009. https://lancasteronline.com/news/ash-basin-passes-test/article_47688f38-934e-575c-b4ee-60d34aa700bd.html, accessed December 2020.

Cumberland Times, 2010. $8 Million Lawsuit Filed Against Tri-Star Mining. *The Cumberland Times*, April, 15, 2010. http://www.times-news.com/news/local_news/new-million-lawsuit-filed-against-tri-star-mining/article_2d8053fe-1ad4-518d-9f72-fceca71595c0.html, accessed 7/22/17.

Dennen, Rusty, 2015. "Gray ash to 'green' blocks Many Uses for Coal-Plant Ash." *The Free Lance - Star*, May 8, 2015. https://www.fredericksburg.com/local/gray-ash-to-green-blocks-many-uses-for-coal-plant/article_582f729d-cc27-5df4-a263-fac8e1ef2104.html, accessed 4/20/21.

Dominion Energy, 2020a. CCR Rule Compliance Data & Information. https://www.dominionenergy.com/projects-and-facilities/electric-projects/coal-ash/ccr-rule-compliance-data-and-information, accessed 4/21/20.

Dominion Energy, 2020b. Coal Ash. https://www.dominionenergy.com/projects-and-facilities/electric-projects/coal-ash, accessed 4/27/21.

DuPont Seaford Plant (Invista), 2006. April 18, 2006. http://www.dnrec.state.de.us/dnrec2000/divisions/awm/hw/hw/pdf%5CDuPont%20Seaford%20Plant.pdf, accessed 4/7/21.

Dyson, Cathy, 2020. Birchwood Power Plant in King George will close next year. *The Free Lance – Star*, February 21, 2020. https://fredericksburg.com/news/local/birchwood-power-plant-in-king-george-will-close-next-year/article_87d135f4-c3af-57d2-bd90-66daef5aedbc.html, accessed 4/20/21.

Earth Justice, 2014. Virginia Coal Ash Disposal in Ponds and Landfills. https://earthjustice.org/sites/default/files/files/Virginia-Ash-Fact-Sheet-2014-12.pdf, accessed 4/28/21.

Earth Justice, 2017. New safeguards at Hatfield's Ferry Coal ash lagoon. September 20, 2017. https://earthjustice.org/news/press/2017/new-safeguards-at-hatfield-s-ferry-coal-ash-landfill, accessed 4/29/21.

Earth Justice, 2020. List of Plants Where Coal-Ash Contaminated Groundwater Exceeds Allowable State and/or Federal Limits. October 5, 2020. https://earthjustice.org/sites/default/files/files/admissions_124-plants_coal-ash_10.05.2020.pdf, accessed 4/27/21.

Easton, Katharine, 2015. WestRock Company Wins 2015 AF&PA Sustainability Award for Energy Efficiency and Greenhouse Gas Reduction. *American Forest & Paper Association: Media*. November 16, 2015. https://afandpa.org/media/2015/11/16/westrock-company-wins-2015-af-pa-sustainability-award-for-energy-efficiency-and-greenhouse-gas-reduction, accessed 4/21/21.

Easton, Katharine, 2017. WestRock Company Wins Two 2017 AF&PA Sustainability Awards. *American Forest & Paper Association: Media*. November 6, 2017. https://www.afandpa.org/media/news/2017/11/06/westrock-company-wins-two-2017-af-pa-sustainability-awards, accessed 4/21/21.

Energy Harbor Generation, LLC, 2020. 2020 CCR Annual Inspection Report: Hatfield CCB Landfill, Masontown, Greene County, PA. Operating Requirements, Annual Inspections. https://energyharbor.com/en/powering-the-grid/compliance-and-data-reporting.

Energy Justice Network. AES Hickling, LLC. http://www.energyjustice.net/map/displayfacility-65167.htm, accessed 3/15/21.

Energy Justice Network. AES Jennison, LLC. http://www.energyjustice.net/map/displayfacility-65169.htm, accessed 3/15/21.

Energy Justice Network. Birchwood Power. http://www.energyjustice.net/map/displayfacility-68118.htm, accessed 3/15/21.

Energy Justice Network. Chesterfield Power Station. http://www.energyjustice.net/map/displayfacilityadvanced-65737.htm, accessed 4/26/21

Energy Justice Network. Possum Point Power Station. http://www.energyjustice.net/map/displayfacility-65742.htm, accessed 4/21/21.

Energy Justice Network. Shawville Power Plant. http://www.energyjustice.net/map/displayfacility-65448.htm, accessed 4/15/21.

Energy Justice Network. Westvaco Covington. http://www.energyjustice.net/map/displayfacilityadvanced-76659.htm, accessed 4/21/21.

Energy Justice Network, 2021a. Clover Power Station. http://www.energyjustice.net/map/displayfacility-66328.htm, accessed 4/28/21.

Energy Justice Network, 2021b. Cogentix Virginia Leasing Corporation. http://www.energyjustice.net/map/displayfacilityadvanced-66823.htm, accessed 4/28/21.

Environmental Integrity Project, 2019. *Coal's Poisonous Legacy*. March 4, 2019. https://environmentalintegrity.org/reports/coals-poisonous-legacy/. Accessed 5/3/21.

Fearing, Sarah, 2019. No more coal: Yorktown Power Station units 1, 2 shut down after power line energizes. *WY Daily*, March 18, 2019. https://wydaily.com/local-news/2019/03/18/no-more-coal-yorktown-power-station-units-1-2-shut-down-after-power-line-energizes/, accessed 4/29/21.

FirstEnergy Generation, LLC, 2015. Minor Modification for acceptance of Coal Combustion Waste from FirstEnergy Generation, LLC Operated Power Stations: Hatfield's Ferry Power Station CCB Landfill Monongahela Township, Green County, PA. http://files.dep.state.pa.us/RegionalResources/SWRO/SWROPortalFiles/Hatfield'sFerryPermitMod/Hatfield'sFerryCCBLandfillCRDocument.pdf.

Frazier, Reid, 2017. Future in Limbo for Coal Ash Site. NPR StateImpact Organization Pennsylvania. https://stateimpact.npr.org/pennsylvania/2017/10/24/future-in-limbo-for-coal-ash-site/.

GAI Consultants, Inc., 2016. Chesterfield Power Station Upper Pond Closure Plan. https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/projects-and-facilities/electric-projects/coal-ash/chesterfield/upper-pond-closure-plan.pdf?la=en&rev=59e483367682499dbc0c007ab0ca4d80&hash=D742D53CF1B1825F1038935592C2DC8C, accessed 4/22/21.

GAI Consultants, Inc., 2018. Coal Combustion Residuals Unit Locations Restrictions Assessment. Virginia Electric and Power Company Chesterfield Power Station Upper Ash Pond. https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/projects-and-facilities/electric-projects/coal-ash/chesterfield/upper-pond-location-restrictions.pdf?la=en&rev=586d557c526045d19961c1984eee0f77&hash=C1B6F682FD2E78569C6D0D8EA450724B, accessed 4/22/21.

Gem.wiki, 2019a. AES Westover Generation Plant. https://www.gem.wiki/AES_Westover_Generation_Plant, accessed 3/15/21.

Gem.wiki, 2019b. AES Jennison Generation Plant. https://www.gem.wiki/AES_Jennison_Generation_Plant, accessed 3/15/21.

Gem.wiki, 2020a. Bremo Bluff Power Station. https://www.gem.wiki/Bremo_Bluff_Power_Station, accessed 3/15/21.

Gem.wiki, 2020b. Chesapeake Energy Center. https://www.gem.wiki/Chesapeake_Energy_Center, accessed 4/26/21.

Gem.wiki, 2020c. Chesterfield Power Station. https://www.gem.wiki/Chesterfield_Power_Station, accessed 4/26/21.

Gem.wiki, 2020d. Invista Seaford Power Plant. https://www.gem.wiki/Invista_Seaford_Power_Plant, accessed 4/7/21.

Gem.wiki, 2020e. Main Page. https://www.gem.wiki/Main_Page, accessed December 2020.

Gem.wiki, 2020f. Yorktown Power Station. https://www.gem.wiki/Yorktown_Power_Station, accessed 4/29/21.

Gem.wiki, 2021. Birchwood Power Facility. https://www.gem.wiki/Birchwood_Power_Facility, accessed 4/26/21.

Geosyntec Consultants, 2018. Chesterfield Power Station Lower Ash Pond Location Restrictions. https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/projects-and-facilities/electric-projects/coal-ash/chesterfield/lower-pond-location-restrictions.pdf?la=en&rev=67f205677afe444da118f79ec75dfe02&hash=2F3E1FDEA6DC43EF6C38FC9560CA0348, accessed 4/22/21.

Gingerich, J.C., 2000. Beneficial Use of Solid Wastes at P.H. Glatfelter Company's Glatfelter Division, 2000 Environmental Conference. https://imisrise.tappi.org/TAPPI/Products/env/ENV0055.aspx, accessed 4/12/21.

Golder Associates, Inc., 2015. Notice of Intent to Close Inactive Surface CCR Impoundments. Bremo Power Station. https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/projects-and-facilities/electric-projects/coal-ash/bremo/bremo-noi-to-close-archive.pdf, accessed 4/20/21.

Golder Associates Inc., 2016. Closure Plan. Bremo Power Station CCR Surface Impoundment: North Ash Pond. https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/projects-and-facilities/electric-projects/coal-ash/bremo/closure-plan-oct.pdf?la=en&rev=37b46bf9b5464c708c4c5fd3081e5a23&hash=756027B5850AABA5A8A0A4D023644127, accessed 4/20/21.

Golder Associates, Inc., 2017. CPS FFCP CCR Location Certifications. https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/projects-and-facilities/electric-projects/coal-ash/chesterfield/cps-ffcp-ccr-location-certifications.pdf?la=en&rev=7640b6dc0a8a4f51932bcae0c6770352&hash=B8E403ABF3874DDAB18AEA84F5911CDD, accessed 4/22/21.

Golder Associates Inc., 2018a. Clover Power Station Phase III Landfill Unstable Areas Documentation. https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/projects-and-facilities/clover-power-station/phase-3-landfill-unstable-areas-documentation.pdf?la=en&rev=c1201426cc6846468a2c87073590651a&hash=E54E04927083B191B27B20705F3A951F, accessed 4/28/21.

Golder Associates, Inc., 2018b. Unstable Areas Documentation Yorktown Power Station Ash Landfill. https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/projects-and-facilities/electric-projects/coal-ash/yorktown/yorktown-power-station-unstable-areas-documentation.pdf?la=en&rev=202d6b6bf33d4f9cb04c347d803fe87d&hash=0E441C48F09BE4E2BD9DF74214E139A7.

Golder Associates Inc., 2019a. Annual Inspection Report for Existing Surface CCR Impoundment. Bremo East Ash Pond. https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/projects-and-facilities/electric-projects/coal-ash/bremo/2019-bremo-east-annual-pe-inspection.pdf?la=en&rev=2dd3aadf720f46ae87c8a9dcf7bc10cd&hash=6C0294FAC70D9E3F6BFA5E455E17D9CF, accessed 4/20/21.

Golder Associates Inc., 2019b. Clover Stage 3 Landfill 2019 Inspection Form. https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/projects-and-facilities/clover-power-station/2019-cl-stage-3-landfill-inspection-form.pdf?la=en&rev=42b5b0577ff447f29c9805884f57d775&hash=1C47C2C3649421E14A0BDC8798F948B1, accessed 4/28/21.

Golder Associates, Inc., 2020a. Annual Inspection Report for Existing CCR Surface Impoundment. https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/projects-and-facilities/electric-projects/coal-ash/chesterfield/2020_cps_uap_annual-pe-inspection-form.pdf?la=en&rev=62b30e7e98f14e70ad0cdbc97bc4578f&hash=1278B8E819E1FBCE896D17C99131787E, accessed 4/22/21.

Golder Associates, Inc., 2020b. Annual Inspection Report for Existing CCR Surface Impoundment. https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/projects-and-facilities/electric-projects/coal-ash/chesterfield/2020_cps_lap_annual-pe-inspection-form.pdf?la=en&rev=b4bde0b5528f45058ed40dab2944634b&hash=EAE1D4BFDFFFF78489B6FE9A10CC5035, accessed 4/22/21.

Golder Associates, Inc., 2020c. Closure Plan: Yorktown Power Station Ash Landfill. https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/projects-and-facilities/electric-projects/coal-ash/yorktown/2020-yorktown-closure-plan.pdf?la=en&rev=ffdb12c1b25c436088ef735583e77d4c&hash=50700059BDD1B81CBC593E0D4B20E337.

Golder Associates, Inc., 2020d. Location Restrictions Documentation. Chesapeake Energy Center: Bottom Ash Pond. https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/projects-and-facilities/electric-projects/coal-ash/chesapeake/cec-bottom-ash-pond-location-restrictions-final.pdf?la=en&rev=120acb2af25149438f670a0c559d5c4c&hash=6B279624295EE2390CC10338EAC9B7CD, accessed 4/20/21.

Griggsby, Lydia, 2018. Memorandum Opinion and Order. *Westrock Virginia Corp., vs U.S.* No. 15-355C. February 9, 2018. https://www.leagle.com/decision/infdco20180212953, accessed 4/21/21.

HDR, 2016. 2016 Annual USEPA CCR Landfill Inspection Report Montour Ash Disposal Area No. 3. Prepared by HDR for Montour, LLC. https://s3.amazonaws.com/tln-environmental/Montour+AA3/Montour-AA3-2017-Landfill-Report-and-Appendices.pdf, accessed 4/12/21.

Hooker, Alan, 2017. Personal Communication, email and attached data files from Alan Hooker (MDE) to Robin Lee (ERM) dated 6/9/17.

Hornberger, Roger J., Dalberton, A.D., Menglhini, M.J., Kania, T.C., Scheetz, B.E., and T.D. Owen, 2005. Coal Ash Beneficial Use at Mine Sites in Pennsylvania. Presented at the World of Coal Ash Conference, April 11-15, 2005, Lexington, KY. http://www.flyash.info/2005/222hor.pdf, accessed 4/29/21.

Hoyt, Brian, 2017. Personal communication, email from Brian Hoyt (Raven) to Robin Lee (ERM) dated 6/2/17.

Independent Regulatory Review Commission (IRRC), 2009. Environmental Quality Board #7-442 (#2808) Beneficial Use of Coal Ash Corrected Comment and Response Document. http://www.irrc.state.pa.us/docs/2808/AGENCY/2808FF.pdf, accessed 4/29/21.

Industryabout.com, 2014a. Hickling Coal Power Plant (Shutdown). https://www.industryabout.com/country-territories-3/873-usa/fossil-fuels-energy/10491-hickling-coal-power-plant-shutdown, accessed 3/15/21.

IndustryAbout.com, 2014b. Westover Coal Power Plant. https://www.industryabout.com/country-territories-3/873-usa/fossil-fuels-energy/10551-westover-coal-power-plant, accessed 3/15/21.

IndustryAbout.com, 2015. Possum Point Oil Power Plant. https://www.industryabout.com/country-territories-3/873-usa/fossil-fuels-energy/21568-possum-point-oil-power-plant. Last updated May 1, 2015, accessed 4/21/21.

Jackson, Alex, 2012. Fight to clean up Crownsville dump continues 30 years later. *Capital Gazette*, September 2, 2012. http://www.capitalgazette.com/cg2-arc-dbac2518-b392-50a6-ba2f-abd461210d36-20120902-story.html, accessed 7/5/17.

J-PowerUSA, 2021. Birchwood Solar & Storage. https://jpowerusa.com/projects/birchwood-power/, accessed 4/26/21.

Justia, 2017. Memorandum and Order: Gmmm Westover LLC v New York State Elec & Gas Corp. https://law.justia.com/cases/new-york/appellate-division-third-department/2017/524599.html, accessed 3/15/21.

Kraus, Walter, 1986. Culm Will Vanish Power Plant Will Burn It. *The Morning Call*. https://www.mcall.com/news/mc-xpm-1986-07-18-2542170-story.html.

Kraus, Walter, 1987. Coal Plants, Prisons give Schuylkill a Life. *The Morning Call*. November 30, 1987. http://www.mcall.com/news/mc-xpm-1987-11-30-2600637-story.html, accessed 4/29/21.

Lancaster County, 2019. Lancaster County Hazard Mitigation Plan. January 2019. http://hmp.lancema.us/2019docs/22%20Section%204.3.12%20-%20Dam%20Failure%20Jan19.pdf, accessed 4/14/21.

Lee, Robin; Rafalko, Lenny; Erbe, M.; and Petzrick, Paul, 2015. Transforming CCBs in Maryland to Enhance Beneficial Use. Presented at 2015 World of Coal Ash (WOCA), Nashville, TN, May 5-7, 2015. http://www.flyash.info/2015/031-lee-2015.pdf, accessed 4/27/21

Legere, Laura, 2015. Waste coal plants a poor fit with carbon emission rules. *The Pittsburgh Post-Gazette*, January 6, 2015. https://www.post-gazette.com/business/powersource/2015/01/06/Waste-coal-plants-a-poor-fit-with-carbon-emission-rules/stories/201501060014, accessed 4/29/21.

Levy Konigsburg LLP. Asbestos Exposures at the AES Hickling Generation Plant - Corning, NY. https://www.levylaw.com/asbestos-exposures-aes-hickling-generation-plant-corning-new-york/, accessed 3/15/21.

Lewitt, Mark, 2011. Opportunities for fine coal utilization. August 2011. https://usea.org/sites/default/files/082011_Opportunities%20for%20fine%20coal%20utilisation_ccc185.pdf, accessed 4/27/21.

Knight, Debbie, 2017. Personal communication, email from Debbie Knight (NRG) to Robin Lee (ERM) dated 6/9/17.

Maryland Department of the Environment, BFI Factsheet. Browning Ferris Industries-Solley Road Landfill Glen Burnie, MD. http://msa.maryland.gov/megafile/msa/speccol/sc5300/sc5339/000113/001000/001784/unrestricted/20061232e.pdf, accessed 6/7/17.

Maryland Department of the Environment, Norris Farm Landfill/Chemical Processing Center (MD-18), Dundalk, Baltimore County, MD. http://textonly.mde.state.md.us/assets/document/brownfields/Norris_Farm_Landfill.pdf, accessed 6/8/17.

Maryland Department of the Environment, 2008-2017. MDE CCB Tonnage Reports. http://mde.maryland.gov/programs/land/SolidWaste/Pages/ccbs.aspx, accessed 6/6/17.

Maryland Department of the Environment, 2009a. Facts About: Pennington Avenue Landfill, November 2009. http://websrvr.mde.md.gov/assets/document/Pennington%20Avenue%20Landfill.pdf, accessed 7/5/17.

Maryland Department of the Environment, 2009b. Maryland Historic Landfill Initiative. March 25, 2009. https://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Documents/1%20HIST_LNDFLL_INI09rev.pdf, accessed 3/11/21.

Maryland Department of the Environment, 2010. Facts About: Coal Combustion Byproduct Sites in Maryland, August 2010. https://www.mde.state.md.us/programs/Land/SolidWaste/Documents/www.mde.state.md.us/assets/document/FactSheetCCBSites.pdf, accessed 7/5/17.

Maryland Department of the Environment, 2013. Facts About: Rossville Coal Ash Structural Fill Site, November 2013. https://mde.maryland.gov/programs/Land/MarylandBrownfieldVCP/Documents/Rossville%20Coal%20Ash%20Structural%20Fill%20Site.pdf, accessed 7/5/17.

Maryland Department of the Environment, 2014a. Facts About: BFI Quarantine Road Site, May 2014. https://mde.maryland.gov/programs/Land/MarylandBrownfieldVCP/Documents/QUARANTINE%20ROAD.pdf, accessed 7/5/17.

Maryland Department of the Environment, 2014b. Facts About: Old Cumberland City/County Dump, December 2014. https://mde.maryland.gov/programs/Land/MarylandBrownfieldVCP/Documents/OLD%20CUMBERLAND%20DUMP.pdf, accessed 7/5/17.

Maryland Department of the Environment, 2014c. Facts About: Reedbird Landfill Site, December 2014. https://mde.maryland.gov/programs/Land/MarylandBrownfieldVCP/Documents/REEDBIRD.pdf, accessed 7/5/17.

Maryland Department of the Environment, 2019. Closed Solid Waste Acceptance Facilities Contact List. Last updated October 24, 2019. https://mde.maryland.gov/programs/LAND/SolidWaste/Documents/Closed_Facilities_Contact_List.pdf, accessed December 2020.

Maryland Department of the Environment, 2020a. Brownfields Master Inventory (BMI). https://mde.maryland.gov/programs/Land/MarylandBrownfieldVCP/Pages/BrownfieldMasterInventory.aspx, accessed December 2020.

Maryland Department of the Environment, 2020b. Permitted Solid Waste Acceptance Facilities, April 28, 2020. https://mde.maryland.gov/programs/LAND/SolidWaste/Documents/Permitted_Solid_Waste_Facilities.pdf, accessed December 2020.

Maryland Department of the Environment, 2020c. Solid Waste Management in Maryland. Amcelle Rubble Landfill Ground Water Discharge Permit, updated September 2020. https://mde.maryland.gov/programs/LAND/SolidWaste/Pages/index.aspx#Amcelle, accessed December 2020.

Maryland MERLIN Online. https://www.arcgis.com/home/item.html?id=1038dd7a924b46899d23053dbc4c6dd6, accessed 6/6/17.

McCue, Cathryn, 1994. Westvaco Mill Plans "Cadillac" New Landfill. *The Roanoke Times*, December 31, 1994. https://scholar.lib.vt.edu/VA-news/ROA-Times/issues/1994/rt9412/941231/01030055.htm, accessed 4/21/21.

McElhinny, Brad, 2020. House again considers tax breaks for aging, struggling coal-fired power plants. *WV Metro News*. https://wvmetronews.com/2020/02/18/house-again-considers-tax-breaks-for-aging-struggling-coal-fired-power-plants/, accessed 4/24/21.

MeadWestvaco Corporation, 2011. MWV to Improve Power Infrastructure at Covington, Virginia Mill. *Business Wire*, June 27, 2011. https://www.businesswire.com/news/home/20110627006883/en/MWV-Improve-Power-Infrastructure-Covington-Virginia-Mill, accessed 4/21/21.

Missimer, Skip Ph.D., 2009. Comments on Proposed Rulemaking 25 PA Code Chs. 287 and 290 Beneficial Use of Coal Ash - Pennsylvania Bulletin November 7, 2009. http://www.irrc.state.pa.us/docs/2808/COMMENTS_PUBLIC/2808%2012-23-09%20C%20L%20SKIP%20MISSIMER%20PHD.pdf, accessed 4/29/21.

MonPower, 2014. Comments to the April 30, 2014 letter and final report regarding the Coal Combustion Residual (CCR) Site Assessment. Correspondence with the United States EPA, June 18, 2014. https://archive.epa.gov/epawaste/nonhaz/industrial/special/fossil/web/pdf/albright_pwr_action_pln.pdf, accessed 4/27/21.

Newman, Barry; McGee, Jack; and Burns, Dana, 2021. Civil Engineering Database: Embankment Over Fly Ash Ponds at Portsmouth Power Station. https://cedb.asce.org/CEDBsearch/record.jsp?dockey=0052550, accessed 4/28/21.

Nycourts.gov, 2006. Pozzment Corp. v AES Westover, LLC. http://www.nycourts.gov/reporter/3DSERIES/2006/2006_02266.htm, accessed 3/15/21.

O'Brien and Gere Engineers, Inc., 2010a. Dam Safety Assessment of CCW Impoundments, Chesapeake Energy Center. https://archive.epa.gov/epawaste/nonhaz/industrial/special/fossil/web/pdf/dom-chesa-power-draft.pdf, accessed 4/20/21.

O'Brien and Gere Engineers, Inc., 2010b. Dam Safety Assessment of CCW Impoundments, Sunbury Generation LP. https://archive.epa.gov/epawaste/nonhaz/industrial/special/fossil/web/pdf/sunbury-final.pdf, accessed 4/14/21.

O'Brien and Gere Engineers, Inc., 2012. Dam Safety Assessment of CCW Impoundments, GenOn Energy - Shawville Generating Station. https://archive.epa.gov/epawaste/nonhaz/industrial/special/fossil/web/pdf/nrg_shawville_drft_rpt.pdf, accessed 4/15/21.

Old Dominion Electric Corporation, 2021. Generation Facilities. https://www.odec.com/generation-transmission-overview/generation-facilities/, accessed 4/28/21.

Open Jurist. 819 F. 2d 1138 – Joppa Sand Gravel Corporation v. State of Maryland R C. http://openjurist.org/819/f2d/1138/joppa-sand-gravel-coproration-v-state-of-maryland-r-c, accessed 6/9/17.

Pennsylvania Department of Transportation (PennDOT), 2017. Public Meeting Handout. SR 15 Section 088 CSVT Southern Section. http://www.csvt.com/resources/pdfs/2017-02-15%20-%20Public%20Mtg%20Handout.pdf, accessed 4/15/21.

Porse, N. Christian, 2010. Hydro Hall of Fame: Taking Holtwood Next into the Century. Hydro Review. June 1, 2010. https://www.hydroreview.com/world-regions/hydro-hall-of-fame/, accessed 4/27/21.

Power Technology, 2017. Birchwood Power Facility: GE's coal efficiency showcase. https://www.power-technology.com/features/birchwood-power-facility-ges-coal-efficiency-showcase/, accessed 4/20/21.

Power Plant Environmental Review (PPER), 1994. Environmental Aspects of the Brandon Woods Coal Ash Site. May 1994. Report No. PPER-MP-60.

PPL Generation, 2009a. Response to Information Under Section 104€ of the Comprehensive Environmental Response, Compensation and Liability Act. Correspondence from D. Murphy (PPL) to R. Kinch (EPA), March 26, 2009.

https://archive.epa.gov/epawaste/nonhaz/industrial/special/fossil/web/pdf/ppl-holtwood.pdf, accessed 4/8/21.

PPL Generation, 2009b. Response to Information Under Section 104€ of the Comprehensive Environmental Response, Compensation and Liability Act. Correspondence from D. Murphy (PPL) to R. Kinch (EPA), March 26, 2009. https://archive.epa.gov/epawaste/nonhaz/industrial/special/fossil/web/pdf/ppl-montour.pdf, accessed 4/12/2021.

Power Plant Research Program (PPRP), 2004. Evaluation of Water Quality Conditions Associated with the use of Coal Combustion Products as Structural Fill at the Routes 213/301 and Interstate 695 Overpass. September 2004. Report No. PPRP-132.

PPRP, 2007. Assessment of Water Quality Impacts Associated with Use of Coal Combustion Products as Structural Fill at the BBSS Site, June 2007. Report Nos. DNR 12-6182007-221 and PPRP-142.

PPRP, 2017a. Draft Technical Report Update Evaluation of Water Quality Conditions Associated with the Use of Coal Combustion By-products as Structural Fill at the Interstate 695 Key Bridge Approach.

PPRP, 2017b. Draft Technical Report Update Evaluation of Water Quality Conditions Associated with the Use of Coal Combustion By-products as Structural Fill at the Route 213/301 Overpass.

Power Plant Siting Program (PPSP), 1982a. Coal Ash Disposition in Maryland 1950 through 1980, Vol. 1 and 2, September 1982. Report No. PPSP-MP-41.

PPSP, 1982b. Vienna Fly Ash Disposal Site Problem Definition Study Final Report, June 1982. Report No. PPSP-V-82-1.

PPSP, 1983. Environmental Aspects of the Faulkner Fly Ash Storage Site, Report No. PB-83-184374.

Proctor, Darrell, 2020. Virginia Commits to End Coal-Fired Generation. Power Magazine, April 13, 2020. https://www.powermag.com/virginia-commits-to-end-coal-fired-generation/, accessed 4/28/21.

Reid, John, 2014. MeadWestvaco plans job cuts; Covington Mill unclear. *The Roanoke Times*, January 16, 2014. https://roanoke.com/business/news/meadwestvaco-plans-job-cuts-effects-on-covington-mill-unclear/article_3c5b0b40-7ec3-11e3-8755-001a4bcf6878.html, accessed 4/21/21.

Reilly, P.J., 2009. DEP checking coal-ash basins: Inspection comes in wake of dam failure in Tennessee. *Lancaster Online*. January 26, 2009. https://lancasteronline.com/news/dep-checking-coal-ash-basins/article_6d3d6376-3c2d-592d-9d47-984fd6e89cf2.html, accessed 4/27/21.

Science Applications International Corporation (SAIC), 1997. Draft Technical Background Document on the Efficiency and Effectiveness of CKD Landfill Design Elements. https://archive.epa.gov/epawaste/nonhaz/industrial/special/web/pdf/ckdp0099.pdf, accessed 4/15/21.

Shirk, Wills, 2009. Holtwood Hydroelectric Power Plant. Pennsylvania Heritage and Museum Commission. http://www.phmc.state.pa.us/portal/communities/pa-heritage/holtwood-hydroelectric-power-plant.html, accessed 4/27/21.

Siegel, Andrew, 1996. County allows BGE to put coal ash at Brandon Woods Community hails ruling, which followed long battle with utility. *Baltimore Sun*, December 10, 1996. http://articles.baltimoresun.com/1996-12-10/news/1996345101_1_fly-ash-coal-ash-bge, accessed 7/5/17.

Simonson, Mark, 2010. Jennison Plant Generated Electrical Power From 1945 to 2000. *Daily Star*, Nov. 29, 2010. https://www.thedailystar.com/opinion/columns/jennison-plant-generated-electrical-power-from-to/article_b069d86c-2d63-512f-888f-85ae4dbd8fae.html, accessed 3/15/21.

Small Town Papers, Inc., 1982. Potomac Energy Closing Riverton Power Station. *Spirit of Jefferson Farmer's Advocate*. Charles Town, WV. http://sjf.stparchive.com/Archive/SJF/SJF12021982P14.php.

Sourcewatch Organization, 2020a. Cogentrix. https://www.sourcewatch.org/index.php?title=Cogentrix, accessed 4/28/21.

SourceWatch Organization, 2020b. P.H. Glatfelter Spring Grove Power Plant. https://www.sourcewatch.org/index.php/P.H._Glatfelter_Spring_Grove_Power_Plant, accessed 4/29/21.

South Boston News & Record and Mecklenberg Sun, 2020. Dominion signals end of Clover Project by 2025. July 8, 2020. http://www.sovanow.com/index.php?/news/article/dominion_signals_end_for_clover_project_by_2025/, accessed 4/28/21.

Southeast Coal Ash Organization, 2010. Unlined Landfills? The Story of Coal Ash Waste in our Backyard. http://www.southeastcoalash.org/wp-content/uploads/2012/05/NC-Coal-Ash-Landfill-Report-2010.pdf.

Southern Environmental Law Center, 2017. Effluent Limitations Guidelines Comments, RE: Postponement of Certain Compliance Dates for the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category. https://www.southernenvironment.org/uploads/words_docs/ELG_Comments.pdf, accessed 4/22/21.

Sterns and Wheeler, 2010. Broome County Solid Waste Management Plan Update, February 20, 2010. https://www.gobroomecounty.com/sites/default/files/dept/dpw/pdfs/Draft%20Online%20Version%20Redo.pdf, accessed 4/7/21.

Strawser, Justin, 2016. "Fly ash pits present unique challenge for Thruway." *The Daily Item*, September 15, 2016. https://www.dailyitem.com/news/snyder_county/fly-ash-pits-present-unique-challenge-for-thruway/article_9299277d-db99-57bf-88c3-cd017e84e6b9.html, accessed 4/15/21.

Szkotak, Steve, 2016. Rail cars laden with coal ash rolling into Amelia landfill. *The Richmond Times-Dispatch*, January 28, 2016. https://richmond.com/news/virginia/ap/rail-cars-laden-with-coal-ash-rolling-into-amelia-landfill/article_07dd2182-2b76-5e4a-bbad-c9788c337e9a.html.

Talen Energy, 2016. Closure Plan Per Requirements of 40 CFR 257.7c, Montour SES Ash Landfill 3. Prepared by Geosyntec Consultants for Talen Energy, October 2016. https://2b8c7m21kpn72va5h73tnwgz-wpengine.netdna-ssl.com/wp-content/uploads/montour-lf-3-closure-plan-final.pdf, accessed 4/12/21.

Talen Energy, 2020a. CCR Rule Compliance Data and Information – Montour. https://www.talenenergy.com/ccr-montour/, accessed December 2020.

Talen Energy, 2020b. 2019 Groundwater Monitoring and Corrective Action Report Ash Basin 1, Montour Steam Electric Station. Prepared by Civil & Environmental Consultants, Inc. for Montour, LLC, January 31, 2020. https://tln-environmental.s3.amazonaws.com/Montour+AB1/2019+Annual+Groundwater+And+Corrective+Action+Report+Basin+1.pdf, accessed 4/12/21.

Talen Energy, 2021a. CCR Rule Compliance Data and Information – Brunner Island. https://www.talenenergy.com/ccr-brunner-island/, accessed 4/15/21.

Talen Energy, 2021b. CCR Rule Compliance Data and Information - Montour. https://www.talenenergy.com/ccr-montour/, accessed 4/12/21.

Tedsoutfit Wiki. AES Jennison Generation Plant. https://tedsoutfit.fandom.com/wiki/AES_Jennison_Generation_Plant, accessed 3/15/21.

Tedsoutfit Wiki. AES Westover Generation Plant. https://tedsoutfit.fandom.com/wiki/AES_Westover_Generation_Plant, accessed 3/15/21.

TRC Environmental Corporation, 2018. Clover Power Station Sedimentation Basins Location Restrictions. https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/projects-and-facilities/sedimentation-basins/sed-basins-location-restrictions.pdf?la=en&rev=ddca0e4f0dab40cba70294f807c15792&hash=67FD476474CFDB0F07A330559E687D60, accessed 4/28/21.

United States Army Corps of Engineers (USACE), 2016. NAO-1990-2297 – Maplewood Landfill, January 7, 2016. https://www.nao.usace.army.mil/Media/News-Stories/Article/641791/nao-1990-2297-maplewood-landfill/, accessed 4/29/21.

United States Department of Energy: Office of Scientific and Technical Information, 1994. *Acid Precipitation*. DOE/APC—94/1 (PB94-901001). January 1994. https://www.google.com/books/edition/Acid_Precipitation/-BRRAAAAYAAJ?hl=en&gbpv=0#spf=1619027135730, accessed 4/21/21.

United States Department of the Interior (USDOI), 2009. Office of Hearings and Appeals. Robert Gadinski vs OSM, June 26, 2009. https://www.oha.doi.gov/IBLA/Ibladecisions/177IBLA/177IBLA373.pdf.

United States Environmental Protection Agency, 2011. Request for Action Plan regarding UGI Development Company's Hunlock Power Station. https://archive.epa.gov/epawaste/nonhaz/industrial/special/fossil/web/pdf/ugi_hunlock_letter.pdf, accessed 4/8/21.

United States Environmental Protection Agency, 2012a. Final Decision and Response to Comments, Solley Road Landfill, Browning Ferris, Inc., Glen Burnie, MD. EPA ID MDD000797365, July 2012.

https://www.epa.gov/sites/production/files/2015-09/documents/fdrtc_mdd00797365.pdf, accessed 4/29/21.

United States Environmental Protection Agency, 2012b. Final Report Round 10 Dam Assessment UGI Development Company, Hunlock Creek Power Station Ash Basin 003 (EAST BASIN) & Ash Basin 005 (WEST BASIN) Hunlock Creek, Pennsylvania. https://archive.epa.gov/epawaste/nonhaz/industrial/special/fossil/web/pdf/ugi_hunlock_final.pdf, accessed 4/12/21.

United States Environmental Protection Agency, 2016a. Coal Combustion Residuals Impoundment Assessment Reports. https://archive.epa.gov/epawaste/nonhaz/industrial/special/fossil/web/html/index-4.html, accessed 4/27/21.

United States Environmental Protection Agency, 2016b. Fifth Five-Year Review Report for Chisman Creek Superfund Site York County, Virginia. https://semspub.epa.gov/work/03/2240450.pdf.

United States Environmental Protection Agency, 2019. TRI Facility Report: PIXELLE SPECIALTY SOLUTIONS LLC. https://enviro.epa.gov/facts/tri/ef-facilities/#/Water/17362PHGLT228SO.

United States Environmental Protection Agency, 2020a. Hazardous Waste Cleanup: Browning Ferris Incorporated Solley Road Landfill in Glen Burnie, MD. https://www.epa.gov/hwcorrectiveaction/hazardous-waste-cleanup-browning-ferris-inc-bfi-solley-road-glen-burnie-md, last updated May 22, 2020, accessed 5/3/21.

United States Environmental Protection Agency, 2020b. Hazardous Waste Cleanup: Hawkins Point Hazardous Waste Landfill in Baltimore, Maryland. Last Updated June 29, 2016. https://www.epa.gov/hwcorrectiveaction/hazardous-waste-cleanup-mes-hawkins-point-hazardous-waste-landfill-baltimore-md, accessed 6/9/17.

United States Environmental Protection Agency, 2020c. Hazardous Waste Cleanup: INVISTA Seaford Plant in Seaford, Delaware. https://www.epa.gov/hwcorrectiveaction/hazardous-waste-cleanup-invista-seaford-plant-seaford-de, accessed 4/7/21.

United States Environmental Protection Agency, 2021. Superfund Site: Chisman Creek, York County, Virginia. Cleanup Activities. https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.cleanup&id=0302756.

United States Nuclear Regulatory Commission, 2009. PPL Holtwood. https://www.nrc.gov/docs/ML0930/ML093080205.pdf, accessed 4/27/21.

United States Securities and Exchange Commission, 1999a. Annual Report Pursuant to Section 13 or 15 (d) of the Securities Exchange Commission Act of 1934. https://www.sec.gov/Archives/edgar/data/1093799/000095012399009528/0000950123-99-009528.txt, accessed 4/7/21.

United States Securities and Exchange Commission, 1999b. Form S-4 Registration Statement Under the Securities Act of 1933. https://www.sec.gov/Archives/edgar/data/1093799/000095012399009528/0000950123-99-009528.txt, accessed 3/15/21.

United States Securities and Exchange Commission, 2001. Annual Report Pursuant to Section 13 or 15 (d) of the Securities Exchange Commission Act of 1934. https://www.sec.gov/Archives/edgar/data/1093799/000089383802000024/aes10k2001.txt, accessed 3/15/21.

Virginiaplaces.org, 2019. Maplewood Recycling and Waste Disposal Facility in Amelia County. http://www.virginiaplaces.org/waste/maplewood.html.

Walzer, Phil, 2012. Carlyle Group to buy power plant in Portsmouth. *The Virginian-Pilot*, September 8, 2021. http://www.pilotonline.com/business/article_ac839689-ce98-54ff-8459-b1bd81a8bd1d.html, accessed 4/28/21.

Wastebits, 2021. Amelia Landfill. https://wastebits.com/locator/location/amelia-landfill, accessed 4/29/21.

Watro, Rick, 2017. A New Fly Ash System to Reduce Water Use. *American Forest & Paper Association: Media*, November 6, 2017. https://www.afandpa.org/media/blog/bloga/2017/11/06/a-new-fly-ash-system-to-reduce-water-use, accessed 4/21/21.

Wheeler, Timothy, 2010. MD. Sues Mirant over pollution from Prince George's landfill. *The Baltimore Sun*, April 3, 2010. http://articles.baltimoresun.com/2010-04-03/features/bal-md.gr.coalash03apr03_1_coal-ash-disposal-300-acre-landfill-dawn-stoltzfus, accessed 7/5/17.

Wheeler, Timothy, 2013. Coal-ash pollution at three Maryland landfills to be cleaned up. *The Baltimore Sun*, January 13, 2013. http://www.baltimoresun.com/features/green/blog/, accessed 7/5/17.

Wikipedia.org, 2020. Hatfield's Ferry Power Station. https://en.wikipedia.org/wiki/Hatfield%27s_Ferry_Power_Station, last edited December 18, 2020.

WPS Westwood Generation, 2021. https://slideplayer.com/slide/9170176/27/images/8/WPS+Westwood+Generation+LLC.jpg, accessed 4/29/21.