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# PPRP

## Coal Combustion By-Product Storage, Use, and Disposal Sites in Maryland

August 2019

**MARYLAND POWER PLANT  
RESEARCH PROGRAM**





LARRY HOGAN, GOVERNOR  
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in Maryland**

**PREPARED FOR:**

**POWER PLANT RESEARCH PROGRAM  
MARYLAND DEPARTMENT OF NATURAL RESOURCES**

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## *Abstract*

Coal combustion by-products (CCBs) are the solid residuals that remain when coal is burned to produce electricity. They present environmental challenges in that they can leach naturally occurring heavy metals into ground waters if they are not properly managed. However, they also have physical and chemical properties that make them valuable raw materials for certain industries (i.e. cement and ready-mix concrete manufacture). Using CCBs in these types of applications not only lowers industry demand for virgin raw materials, but has the added benefit of encapsulating the CCBs, essentially immobilizing any metals or other constituents that they could contain.

In 1982, the Maryland Power Plant Research Program (PPRP), then known as the Power Plant Siting Program (PPSP) published a report titled: *Coal Ash Disposition in Maryland 1950 through 1980*. This report detailed known CCB storage, use, and disposal sites across the state of Maryland. As concerns have been raised in recent years about the potential of CCBs to impact ground water, and as commercial technologies have improved to utilize previously ponded or landfilled CCBs as raw materials; there is renewed interest in maintaining a catalog of both active and legacy CCB fill areas.

This report represents an update to the information provided in the 1982 report. It provides updated information on CCB sites within the state, their current status, and a preliminary assessment of their potential for CCB recovery.





The Maryland Power Plant Research Program (PPRP) was established in 1971 as part of the Maryland Department of Natural Resources. PPRP's mission is to ensure reliable and efficient power supply to Maryland citizens while also protecting the state's natural resources. As such, PPRP has a vested interest in monitoring all aspects of power generation within the state, particularly as they relate to potential impacts to the environment.

Approximately one half of the electricity generated in Maryland comes from coal-fired power plants. As of the publication of this report, there are seven active coal-fired power plants in Maryland, though historically, there have been more. As of 2016, 80 percent of the CCBs produced in the state were being beneficially used (MDE, 2008-2017). Two major users of CCBs are the cement and ready-mix concrete industries, which use fly ash as pozzolan to improve the quality of their products. Using CCBs in this way not only results in a superior commercial product but also prevents them from taking up landfill space and encapsulates them into monolithic forms that are not easily leachable. In 2016 cement and ready-mix concrete production consumed over 300,000 tons of freshly produced CCBs. During the same year, another 450,000 tons of comingled Class F fly ash and bottom ash were mined from the landfill of the former R. Paul Smith power plant and sold to cement manufactures as kiln feed stock. It is anticipated that all CCBs will be removed from this landfill by the end of 2020 (Ellman, 2017). As the R. Paul Smith landfill approaches final removal of CCB materials and as power generators increase their reliance on natural gas rather than on coal as a fuel source; commercial users of CCBs have expressed interest in locating other sources of CCBs that may be suitable for their operations.

In the early 1980s, PPRP, then known as the Power Plant Siting Program (PPSP) performed a survey of sites where CCBs had been stored, disposed, or used as fill across the state. The report was titled: *Coal Ash Disposition in Maryland 1950 through 1980* (PPSP, 1982a). Its purpose, at the time, was to document all known locations where CCBs had been placed, in the event that concerns may arise in the future with regard to environmental impacts. While this remains an important goal, the success of CCB recovery at the R. Paul Smith landfill, combined with local industry demand for the material, as well as advances in CCB beneficiation that allow for processing of previously landfilled or ponded material offer additional value to updating and maintaining such records. For these reasons, PPRP has conducted this survey to update and supplement the information provided in PPSP, 1982a.

## **1.1**      ***REPORT PURPOSE***

This document updates the information provided in PPSP, 1982a; adding new CCB sites and updating status information on the sites that were included in that report (i.e. closure and/or redevelopment of sites). Furthermore, this document includes an assessment of the potential appropriateness of each site for CCB recovery, a factor that was not considered during the 1982 assessment.

## **1.2**      ***REPORT ORGANIZATION***

The remainder of this report is organized as follows:

- Section 2: Survey Methods – Discusses the primary sources of information and research methods used to conduct this survey.
- Section 3: Results – Presents a brief summary of the findings of the survey (detailed information gathered during the survey will be provided in Appendices A, B, and C).
- Section 4: Conclusions and Next Steps – Summarizes the most significant findings of the survey and presents recommendations for next steps toward recovery and use of CCBs from sites where this is determined to be potentially feasible.

## 2.0

## *SURVEY METHODS*

The primary sources used to identify CCB sites as well as research methods used to determine up-to-date information on the status of these sites are described below.

### 2.1

#### *PRIMARY SOURCES*

The following three sources were the primary sources used to identify CCB sites within Maryland. Additional resources were used to fill in data gaps and update the status and land uses at each site.

- *Coal Ash Disposition in Maryland: 1950 through 1980* (PPSP, 1982a): This report provided the original basis for the current survey. It listed a total of 38 sites where CCBs had been used, stored, or disposed across the state. Information was obtained from utilities, state and local officials, hauling contractors, and Federal Energy Regulatory Commission (FERC) files. The report included a brief description of each site including the source of CCBs placed there and the approximate size of the site (in acres) as well as a map showing its location.
- *Facts About: Coal Combustion Byproduct Sites in Maryland* (MDE, 2010): This fact sheet was published by the Maryland Department of the Environment (MDE). It listed a total of 33 CCB sites, most of which were not represented in PPSP, 1982a. The fact sheet contained a brief description of each site, including an address or other location information, the source of the CCBs for the site, and in some cases, information on the quantity of CCBs present. It did not contain maps, coordinates, or permit numbers (where applicable) for the sites.
- *Maryland Department of the Environment Abandoned Mine Lands Division Files* (Hooker, 2017): The Mining Program at MDE issues permits for the use of alkaline CCBs to reclaim coal mines in Maryland. The agency also tracks the source and quantities of CCBs used. MDE provided permit data as well as shapefiles for CCB coal mine reclamation sites that were used to verify the locations presented in this report. These files provided additional information on coal mine reclamation sites that were included in MDE, 2010. MDE also provided information on three sites that were not included in MDE, 2010 and allowed for one site to be removed because, while it had been permitted to receive CCBs and was thus included in MDE, 2010, no CCBs have been reported as placed there as of July 2017.



## 2.2

### *DESKTOP RESEARCH METHODS*

This updated CCB site survey began with desktop research using satellite and aerial photograph imagery to examine the land use at the CCB sites identified in the above sources. Imagery resources included Google Earth Pro® as well as ArcGIS® software. The website Maryland MERLIN Online was also used, particularly for locating current landowner information where it was not available from other sources.

In addition to image searches, searches were performed to identify regulatory and legal information about the sites. Internet searches of MDE and United States Environmental Protection Agency (US EPA) websites were performed to locate factsheets and information pages, wherever available. In some cases, news media articles on sites were available for review and were included in this assessment. Information on permits, investigations, lawsuits, and enforcement actions were all noted.

The information obtained from this desktop research was used to place all sites into one of two categories based on the potential for CCBs to be recovered:

1. **Potentially Recoverable** – This category includes sites where only CCBs (or CCBs and soil) were placed and the sites are either still active, inactive, capped and vegetated, or capped with minimal redevelopment (i.e. portions paved). Because the primary industries that have expressed interest in CCB recovery are cement and ready-mix concrete manufacturers, sites that received CCBs that are known to be unsuitable for these uses (i.e. alkaline fluidized bed combustion (FBC) material from the Warrior Run power plant, which does not meet the ASTM standards for fly ash in concrete) were excluded from this category.
2. **Not Recoverable** - This category includes sites where CCBs were disposed along with other industrial or domestic waste materials. It also includes sites that have been redeveloped with buildings or public roads. In addition, it includes sites in which CCBs were co-mingled with surface mine overburden in a manner that makes it impracticable to recover the CCBs, i.e. FBC ash from the Warrior Run Power Plant.

## 2.3

### *WINDSHIELD SURVEYS*

After completion of the desktop study a portion of sites were selected for windshield surveys to verify current site conditions. The criteria for selecting sites for windshield surveys were as follows:

- Only sites categorized as “Potentially Recoverable” were considered for windshield surveys.

- CCB storage sites known to be currently or very recently active (i.e. Faulkner Fly Ash Storage Site, Brandywine Fly Ash Storage Site, Westland Fly Ash Storage Site, and the Fort Armistead Lot 15 Industrial Landfill) were eliminated from consideration, as a windshield survey would not likely produce additional useful information.
- Preference was given to sites within the general Baltimore region, with the expectation that these locations would be closer to potential CCB users and therefore be more financially attractive for use to replace virgin raw materials.

A total of nine sites were selected for windshield surveys.

*Sites Selected for Windshield Surveys*

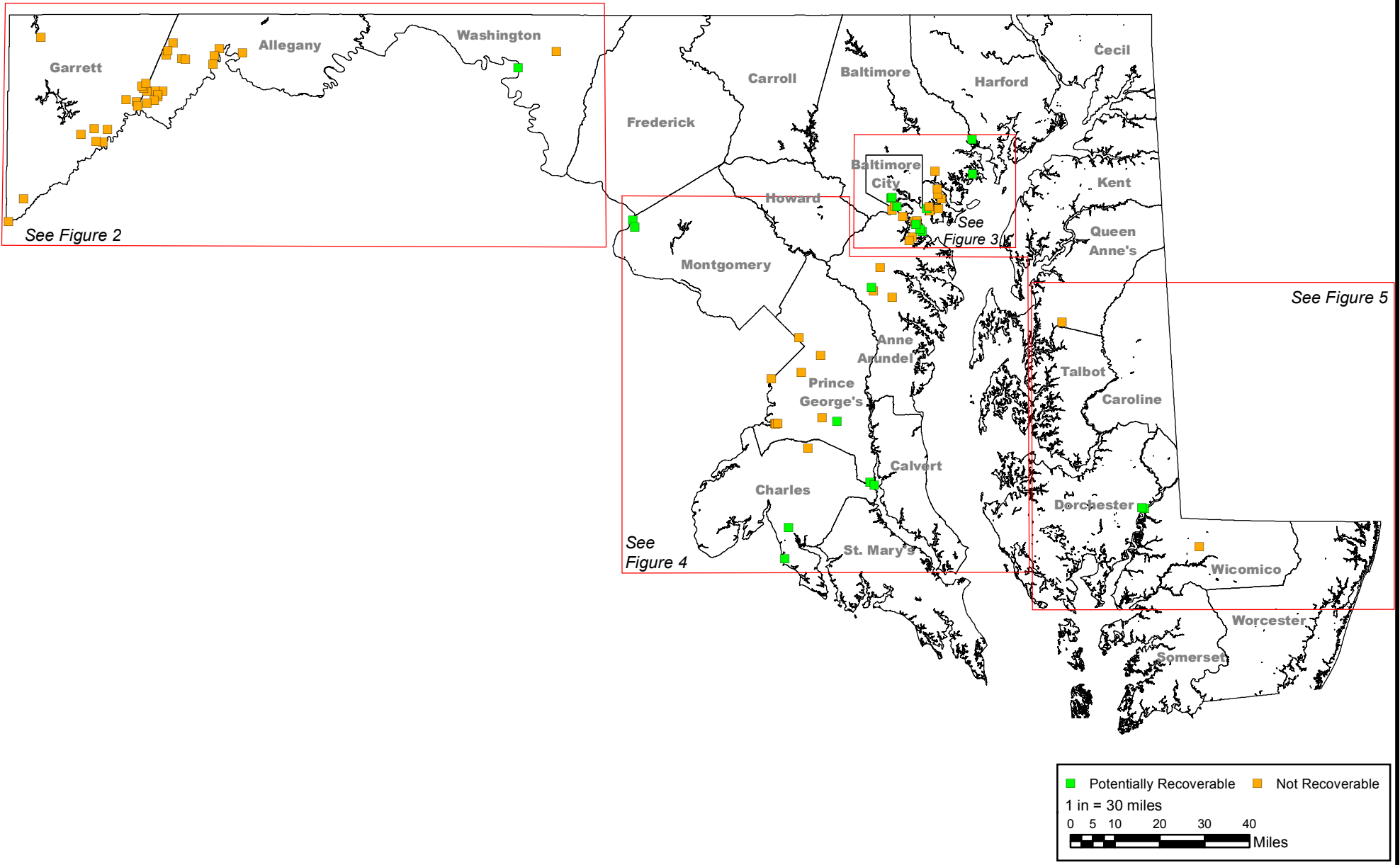
<i>County</i>	<i>Site Name</i>	<i>Current Land Owner</i>
Anne Arundel	Turner Pit (West)	LOBS, LLC
Anne Arundel	Waugh Chapel Pit	BBSS, LLC and LOBS, LLC
Baltimore City	Westport Site 1	Inner Harbor West II, LLC
Baltimore City	Westport Site 2	Inner Harbor West II, LLC
Harford	Joppa Sand & Gravel	State of Maryland
Prince George's	Dyson Road Site	Marlboro Tobacco Market, Inc. and Dyson Road, LLC
Prince George's	Piscataway 1	United States of America and Piscataway Hills Citizens Assoc.
Prince George's	Piscataway 2	Pardo Marianita A, et al.
Prince George's	Piscataway 3	Maryland National Capital Park & Planning Commission

The windshield surveys involved only viewing sites from publicly accessible roadways and parking areas. No attempt was made to contact site owners or to obtain access onto private property. Observations for each site were recorded in a windshield survey form, to which an aerial image of the site and any site photos obtained were also attached.

A total of 79 sites were reviewed for this survey, nearly double the number that was included in PPSP, 1982a (Figures 1 through 5). Of these 79 sites: 20 were classified as Potentially Recoverable and 59 were classified as Not Recoverable. Note that both classifications are based upon current technologies and current land use at each site. A “Not Recoverable” classification does not necessarily rule out recovery of CCBs at the site in the future, should technology or land use conditions change. The sites classified as “Potentially Recoverable” are considered to be the most technically feasible targets for CCB recovery at the time of this report.

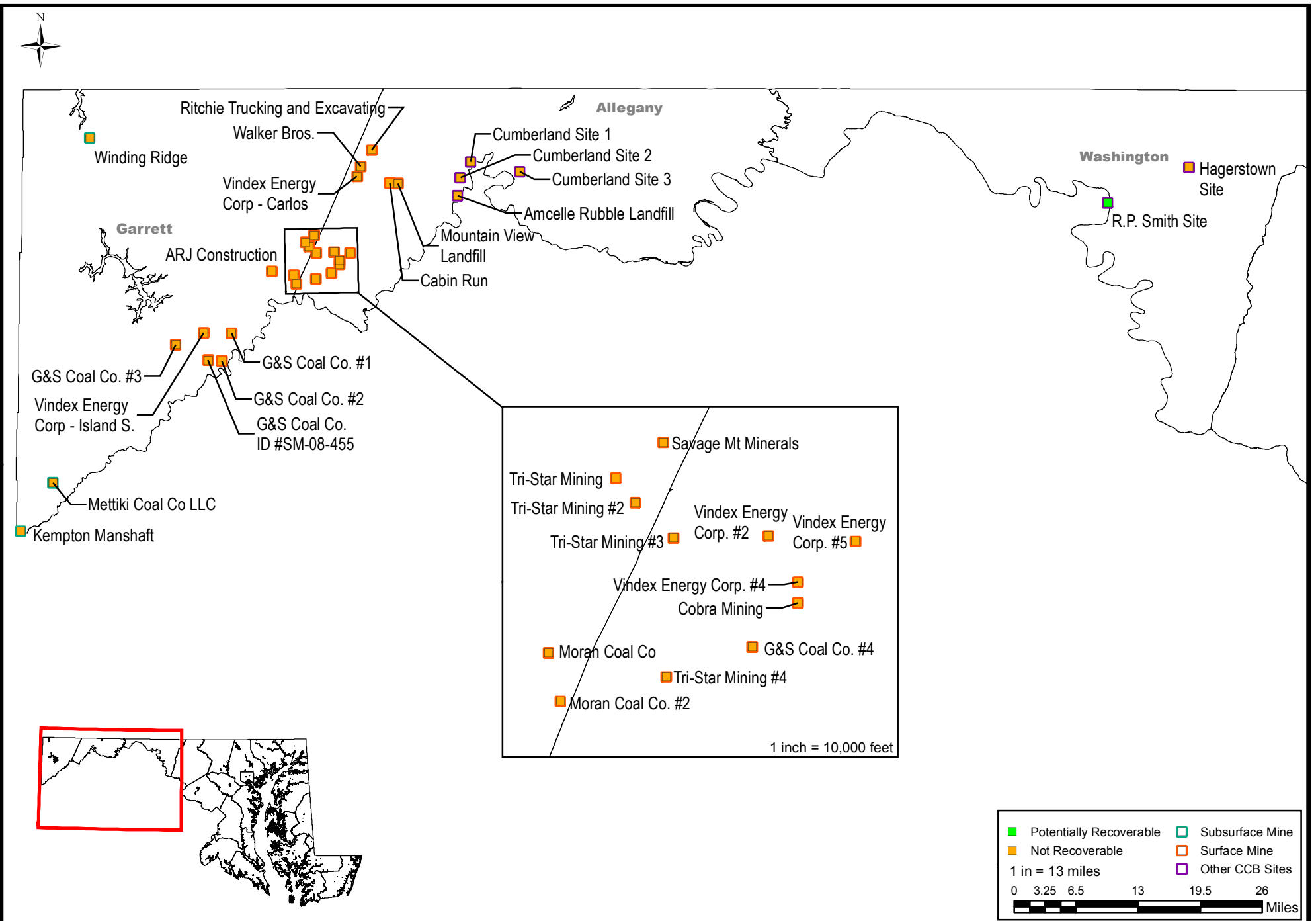
A matrix containing all information obtained about each site as well as its CCB recoverability determination and the rationale for that determination is provided as Appendix A. Recent satellite images of each site obtained as part of the desktop study are provided in Appendix B. Completed windshield survey forms and photos are provided in Appendix C. Brief descriptions of the sites determined to contain potentially recoverable CCBs are provided in the following maps and the subsequent county sections.





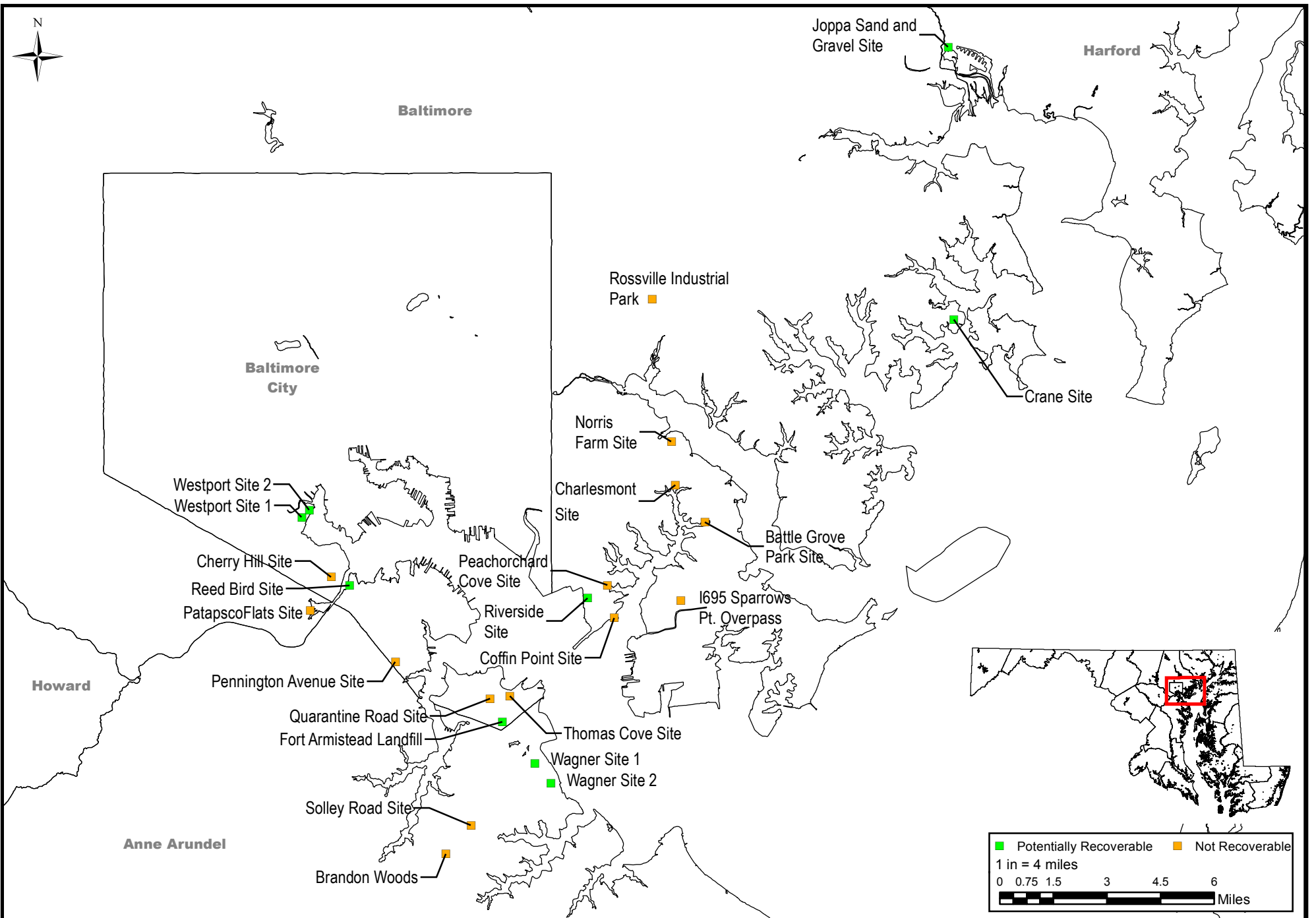
**Figure 1 - Known CCB Sites Across Maryland**

January 2018



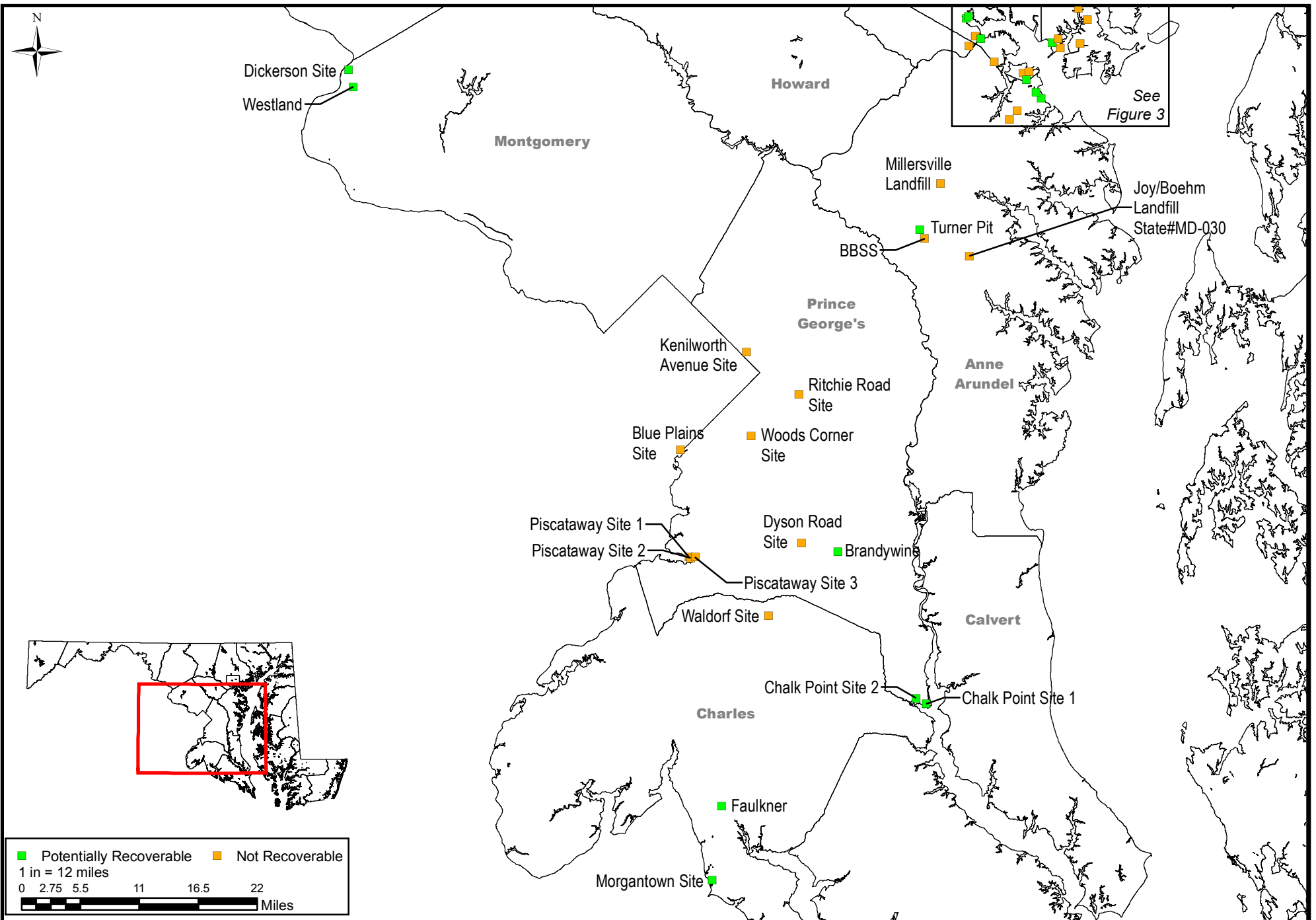
**Figure 2 - Known CCB Sites in Western Maryland**

January 2018



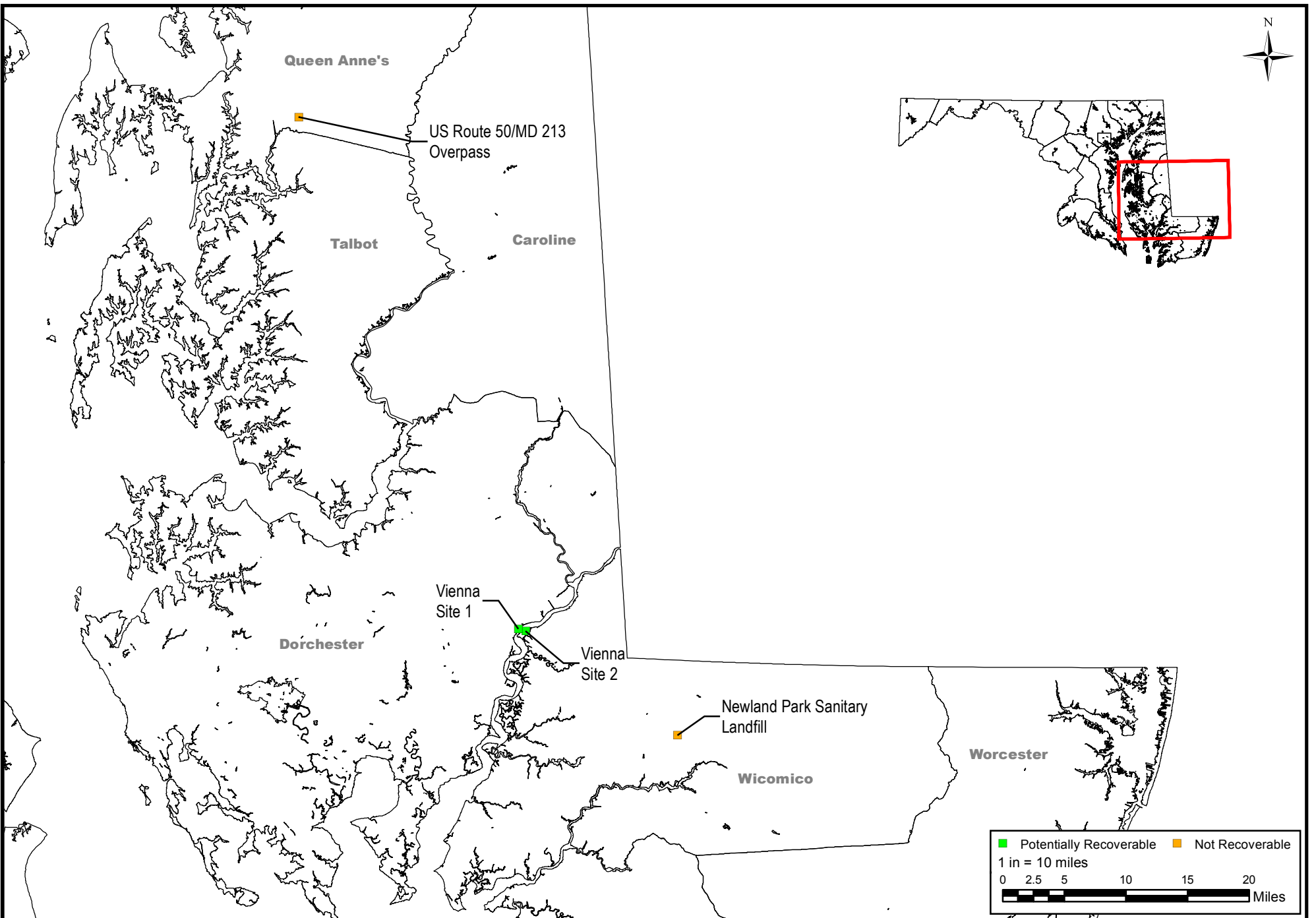
**Figure 3 - Known CCB Sites in the Baltimore Region**

January 2018



**Figure 4 - Known CCB Sites in DC/Southern Maryland**

January 2018



**Figure 5 - Known CCB Sites on the Eastern Shore**

January 2018

## Allegany County

- **Amcell Rubble Landfill** (MDE, 2010; Allegany County, 2011): CCBs from the former Celanese plant (located nearby) were disposed of in two CCB lagoons. The Amcell Rubble Landfill was constructed on top of one of the former lagoons. At one time, Allegany County intended to construct a municipal waste landfill over the second lagoon, but it was never completed. It is this second lagoon that could potentially be accessed for CCB recovery. No maps showing the exact locations of the lagoons could be located; therefore, the location indicated in Appendix B is approximate and is based upon the site address.
- **Cumberland Site 1** (PPSP, 1982a): CCBs from the former Cumberland power plant were placed at this location during the late 1950s and early 1960s. The site is currently a vegetated open field.
- **Cumberland Site 2** (PPSP, 1982a): CCBs from the former Cumberland power plant were placed at this location during the late 1950s and early 1960s. The site is currently a vegetated open field.

## Anne Arundel County

- **Turner Pit (West)** (MDE, 2010; Stewart, 2008): This site is part of one of the two pits that comprise the former BBSS site. The BBSS site was a former sand and gravel mine that was reclaimed using CCBs. Between 1995 and 2007 approximately 2.4 million tons of CCBs from the Brandon Shores and Wagner power plants were used for site reclamation, although the exact tonnage placed in each pit is uncertain. The majority of the Turner Pit has been capped and the land has been developed for use as a shopping center; however, the western portion of the Turner Pit has not been developed. During the windshield survey visit on 25 July 2017, one pond (which appears to be a storm water management pond) was noted as well as active earth-moving activity on portions of the site north and east of the pond. Earth moving activity was being performed on what appeared to be a mounded area and the visible materials being moved were red-brown in color and are believed to be native soil or soil fill, and are not CCBs.
- **Waugh Chapel Pit** (MDE, 2010, Stewart, 2008): This site is the second of two pits that make up the former BBSS site, a former sand and gravel mine that was reclaimed using CCBs. Between 1995 and 2007 approximately 2.4 million tons of CCBs from the Brandon Shores and Wagner power plants were used for site reclamation. BBSS sold the land

with the former Turner Pit for redevelopment but retains ownership of the Waugh Chapel pit. The exact tonnage of CCBs placed in the Waugh Chapel pit is uncertain. Satellite imagery of the Waugh Chapel Pit (dated 2015) suggested that this area had not been redeveloped. During the windshield survey visit on 25 July 2017 visibility of the site was limited by vegetation along the roadway. A private entrance labeled “Reliable Construction: Waugh Chapel Plant” was observed along with active truck traffic entering and leaving the site.

## Baltimore City

- **Fort Armistead Road Lot 15 Industrial Landfill** (MDE, 2008-2017; MDE WMS, 2017): This landfill was the first permitted CCB landfill constructed in the state of Maryland in compliance with the MDE CCB disposal regulations passed in 2008. Multiple types of CCB materials are disposed at the landfill, including Class F fly ash, Class C fly ash, bottom ash, boiler slag, and flue gas desulfurization (FGD) material. It is active as of the preparation of this report.
- **Rossville Industrial Park** (MDE, 2010; MDE, 2013; MDE, 2017): Between 1983 and 1995, CCBs from the C.P. Crane power plant were used to reclaim a former clay mine. Records indicate approximately 45,000 tons of material were placed at the site. Records also indicate that during the period of placement, the C.P. Crane power plant had received approval to co-burn oils containing some PCBs.
- **Westport Site 1** (PPSP, 1982a): This site represents onsite disposal of CCBs from the Westport power plant (which stopped burning coal in 1970). During the 1960s CCBs from the Westport power plant were used to fill cooling ponds and low areas adjacent to the plant. Satellite imagery indicates that less than one half of the site is covered by a parking lot, while the remainder is vegetated. This was confirmed by the windshield survey performed on 26 July 2017.
- **Westport Site 2** (PPSP, 1982a): This site represents onsite disposal of CCBs from the Westport power plant (which stopped burning coal in 1970). During the 1960s CCBs from the Westport power plant were transported by narrow gauge railroad to the edge of the plant property, where they were disposed. A windshield survey of the site was performed on 26 July 2017. Approximately 60 percent of the site appeared to be paved with the remainder vegetated. A ravine containing a vegetated area that looks wetlands-like was also observed.

## Baltimore County

- **Riverside Site** (PPSP, 1982a): This site represents onsite disposal of CCBs from the Riverside power plant (which stopped burning coal in 1970). PPRP, 1982a indicates that this disposal occurred in the early 1950s, but provides little information about exactly where at the power plant site disposal occurred. A windshield survey was performed on 25 July 2017. Paved areas, buildings, power lines, and above-ground storage tanks (ASTs) were confirmed to still be present on portions of the site. BGE maintains a presence at the site, as several work trucks were observed to be parked there.

## Charles County

- **Faulkner Fly ash Storage Site** (PPSP, 1982a; MDE, 2010; Wheeler, 2013): Ash storage facility where CCBs from Morgantown power plant were stored from 1975 through at least 2010. Recent satellite imagery indicates that, while the site may no longer be actively receiving CCBs, capping and closure of the site are not yet complete. A consent decree was issued for the site (along with Westland and Brandywine) by the United States District Court in 2013, which settled lawsuits filed by the MDE and environmental groups.

## Dorchester County

- **Vienna Site 2** (PPSP, 1982a; PPSP, 1982b): This unlined, diked area is located southeast of the Vienna power plant, on the opposite side of the Nanticoke River. CCBs were transported via sluice from the power plant to the diked area between 1966 and 1972. PPSP, 1982b report notes that several breaches of the dike occurred during this time. PPSP, 1982b report further indicates that several environmental investigations of the site were performed. Recent maps and satellite imagery suggest that all or portions of this site are located in wetlands.

## Garrett County

- **Moran Coal Company** (MDE, 2010; Hooker, 2017): CCBs from the private Verso power plant are being used to reclaim a former coal mine. The Site is currently active. Visual observations of the CCBs being placed here indicate that they are of a dark, black color, suggesting elevated levels of unburned carbon. Prior to beneficial use, this material would need to be tested for suitability.



## Harford County

- **Joppa Sand and Gravel Site** (PPSP, 1982a; Open Jurist, 819 F.2d118-Joppa Sand Gravel Corporation v. State of Maryland R C): During the 1980s, CCBs from the Wagner power plant were used to reclaim a former sand and gravel mine. The legal action referenced does not appear to be related to CCB placement, but rather to use of the site for sand and gravel mining prior to CCB placement. A windshield survey of the site was performed on 28 July 2017; the majority of the site was confirmed to be vegetated, with one paved private access road noted, as well as signs indicating that some recreational use of the site is occurring.

## Montgomery County

- **Westland Fly Ash Site** (PPSP, 1982a; MDE, 2010; Wheeler, 2013): Active CCB storage site receiving CCBs from Dickerson power plant since 1981. A consent decree was issued for the site (along with Faulkner and Brandywine) by the U.S. District Court in 2013, which settled lawsuits filed by the MDE and environmental groups.

## Prince Georges County

- **Brandywine Fly Ash Storage Site** (PPSP, 1982a; MDE, 2010; Wheeler, 2013): Active CCB storage site receiving CCBs from the Morgantown and Chalk Point power plants since 1970. A consent decree was issued for the site (along with Faulkner and Westland) by the United States District Court in 2013, which settled lawsuits filed by the MDE and environmental groups. A separate consent decree was also filed in Prince Georges County Circuit Court in 2013 settling a separate lawsuit filed by MDE related to the site.
- **Dyson Rd. Site** (PPSP, 1982a): The PPSP, 1982a report indicates that this was a relatively small site where CCBs were used to fill low-lying areas. A windshield survey was performed at the site on 27 July 2017. The majority of the site was confirmed to be forested. One building is present onsite (Prestige 24/7 Auto Center). Multiple overhead and underground utilities were observed along the roads surrounding the site. Hummocky and uneven terrain was also visible in some of the wooded areas.
- **Piscataway Site 1** (PPSP, 1982a): The PPSP, 1982a report notes that this was a relatively small site where CCBs were used to fill low-lying areas. A windshield survey was performed at the site on 27 July 2017. The site was inaccessible because the one public access road (Piscataway Dr.) ends before reaching the site.

- **Piscataway Site 2** (PPSP, 1982a): The PPSP, 1982a report indicates that this was a relatively small site where CCBs were used to fill low-lying areas. A windshield survey was performed at the site on 27 July 2017. The site is located between two residences. Visibility of the site was limited due to heavy vegetation; however, majority of site appeared to be vegetated. The only public access road near this site (Piscataway Dr.) is narrow with no shoulder and the site appears to have steep terrain.
- **Piscataway Site 3** (PPSP, 1982a): This is the largest of the three Piscataway sites (10 acres). The PPSP, 1982a report indicates that this was a relatively small site where CCBs were used to fill low-lying areas. A windshield survey was performed of the site at 27 July 2017. Visibility of site was limited by heavy vegetation; however, the Site appears to be wooded with steep terrain. The only public access road near the site (Piscataway Dr.) is narrow with no shoulders.

As stored CCBs are a potential economic resource to cement and ready-mix concrete manufacturers, an estimate of the total quantity of potentially recoverable CCBs was made. At some sites, the quantity of CCBs placed was well documented, at other sites, it was not. For sites where CCB quantities were not documented an estimate of CCB quantities was made using the site acreage and the following assumptions:

- CCB thickness of 1-5 feet for “fill of low lying areas”
- CCB thickness of 10-20 feet for reclamation of sand, gravel, or clay mines
- An average density of compacted CCBs of 1 ton per cubic yard.

Using these assumptions and the reported data, it is estimated that 20-25 million tons of potentially recoverable CCBs are present in legacy CCB fill, storage, and disposal sites across the state of Maryland.

This updated catalog of CCB storage, fill, and disposal sites in Maryland contains 79 locations where CCBs have been reportedly placed. More than two thirds (59) of these sites are not feasible targets for CCB recovery and beneficial re-use at this time because: 1) they were co-disposed with other wastes, 2) the CCBs themselves have limited commercial value due to inherent chemical properties or economic value, or 3) because of further land development at the site prohibiting recovery. The remaining 20 sites were determined to have some potential for CCB recovery and beneficial use and are estimated to contain between 20 and 25 million tons of material in total. These sites vary in location, age, size, and original source of CCBs. This report represents only the first phase of assessment of these sites. The next steps that must be taken before any of the potentially recoverable sites could be considered for CCB recovery and beneficial use are as follows:

- Assess transportation methods and distances from the site to potential users. Bulk transport of raw materials can represent a significant cost to users and likely make some sites more or less attractive for recovery.
- Contact site owners to verify current and future land use (particularly for sites that had limited visibility during windshield surveys) and determine whether owners are amenable to CCB recovery at the site.
- Evaluate CCB quality. CCBs to be used in cement or ready-mix concrete must meet certain physical and chemical standards. Before users can consider accepting these materials, they will need to ascertain whether the materials are acceptable for their purposes, or could be beneficiated to make them acceptable. This evaluation would include collection and laboratory analysis of one or more samples of CCBs collected from the site.
- Determine the extent and quantity of CCBs present. Some sites, such as the Faulkner Fly Ash Storage Site, the Westland Fly Ash Storage Site, and the Brandywine Fly Ash Storage Site are well documented with extensive information available on the quantity of CCBs that were placed and where they are located. Other sites, such as the Riverside Power Plant Site, the Westport Power Plant Site, and the Dyson Road, and Piscataway sites are more poorly documented. Beyond the general information provided in PPSP, 1982a, little detail is known about exactly where the CCBs were placed, what quantity was placed there, or at what thickness it was placed. Field studies, including soil borings or geophysical analysis, may be required to fully assess the quantity of material available at these locations.

In spite of the additional characterization required to fully realize the recovery potential of any of the sites discussed herein, the current assessment does verify that potentially recoverable legacy CCB deposits are present across the state of Maryland. As the production of fresh Class F fly ash has decreased over the last ten years, a trend that is expected to continue with increased reliance upon natural gas; these legacy CCB sites may become more attractive to industries that utilize fly ash as a raw material. An added environmental benefit to such recovery operations is the removal of a potentially leachable material from areas where it could come into contact with natural resources and waters of the state.

This study provides a resource to regulators or concerned citizens interested in tracking the location of CCB storage and fill sites in Maryland. It may also be a resource to commercial interests that utilize CCBs as a raw material and are interested in identifying potential resources beyond the material that is freshly produced at Maryland power plants each year.

- Allegheny County, 2011. Solid Waste Management Plan: Revised 2/2011 for the 2011-2021 Planning Period.
- Allegheny Energy, 2009. *R. Paul Smith Power Station – Lagoon Dam #4, Berkely County, WV, Allegheny Energy Supply Company, LLC, CERCLA 104(e) Information Request Letters: Coal Combustion Byproducts Management Units*. Response to request document dated 24 March 2009.  
<https://archive.epa.gov/epawaste/nonhaz/industrial/special/fossil/web/pdf/allegheny-smith.pdf> Accessed 6/9/17.
- ArchCoal, 2012. *Arch Coal's Vindex Energy Earns Third State Maryland Excellence in Reforestation Award*.  
<http://news.archcoal.com/phoenix.zhtml?c=107109&p=irol-newsArticle&ID=1710600> Accessed 7/7/17.
- Ashby, James C., 2008. *Injecting Alkaline Lime Sludge and FGD material Into Underground Mines for Acid Abatement*.  
<https://wvmdtaskforce.files.wordpress.com/2016/01/01-ashby.pdf> accessed 7/22/17.
- Barr, Sheryl, 2012. Crownsville tire dump owners face \$32M in penalties. *Capital Gazette*, 1 December 2012. <http://www.capitalgazette.com/cg2-arc-02ec36c8-f4cd-5e5e-80cf-d7eb2fa9d890-20121128-story.html> Accessed 7/5/17
- CoalAge, 2012. Arch Coal's Vindex Energy Earns Third State Maryland Excellence in Reforestation Award.  
[http://www.coalage.com/departments/2010-awards/2163-arch-coals-vindex-energy-earns-third-state-maryland-excellence-in-reforestation-award.html#.WXJb\\_5hIKrQ](http://www.coalage.com/departments/2010-awards/2163-arch-coals-vindex-energy-earns-third-state-maryland-excellence-in-reforestation-award.html#.WXJb_5hIKrQ) accessed 7/21/17.
- Cumberland Times, 2010. *\$8 Million Lawsuit Filed Against Tri-Star Mining*. 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](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.
- Ellman, Rich, 2017. Personal Communication, email from Rich Ellman (MERG) to Robin Lee (ERM) dated 3/27/17.
- EPA, 2010. *Assessment of Dam Safety Coal Combustion Surface Impoundments (Task 3) Final Report: Allegheny Energy R. Paul Smith Station*. 21 April, 2010.

- EPA, 2012. *Final Decision and Response to Comments, Solley Road Landfill, Browning Ferris, Inc., Glen Burnie, MD*. EPA ID MDD000797365. July 2012.
- EPA, 2015. *Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities*. Agency Number: EPA-HQ-RCRA-2009-0640; Docket Number: FRL-9919-44-OSWER; Document Number: 2015-00257.
- EPA, 2016a. *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 29 June 2016, Accessed 6/7/17.
- EPA, 2016b. *Hazardous Waste Cleanup: Hawkins Point Hazardous Waste Landfill in Baltimore, Maryland*. Last Updated 29 June 2016.  
<https://www.epa.gov/hwcorrectiveaction/hazardous-waste-cleanup-mes-hawkins-point-hazardous-waste-landfill-baltimore-md> Accessed 6/9/17.
- Federal Highway Administration, 2017. Users Guidelines for Waste and Byproduct Materials in Pavement Construction.  
<https://www.fhwa.dot.gov/publications/research/infrastructure/structures/97148/cfa54.cfm>. Accessed 8/4/17.
- Forbes, John, 2017. Personal communication, email from John Forbes (Avenue Capital) to Robin Lee (ERM) dated 7/22/17.
- Heimlicher, Peter, 2017. Personal communication, email from Peter Heimlicher (NRG) to Robin Lee (ERM) dated 6/6/17.
- Hooker, Alan, 2017. Personal Communication, email and attached data files from Alan Hooker (MDE) to Robin Lee (ERM) dated 6/9/17.
- Hoyt, Brian, 2017. Personal communication, email from Brian Hoyt (Raven) to Robin Lee (ERM) dated 6/2/17.
- Jackson, Alex, 2012. Fight to clean up Crownsville dump continues 30 years later. *Capital Gazette*, 2 September, 2012.  
<http://www.capitalgazette.com/cg2-arc-dbac2518-b392-50a6-ba2f-abd461210d36-20120902-story.html> Accessed 7/5/17.
- Knight, Debbie, 2017. Personal communication, email from Debbie Knight (NRG) to Robin Lee (ERM) dated 6/9/17.

Maryland MERLIN Online.

<https://www.arcgis.com/home/item.html?id=1038dd7a924b46899d23053dbc4c6dd6> Accessed 6 June 2017.

MDE, 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.

MDE, 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](http://textonly.mde.state.md.us/assets/document/brownfields/Norris_Farm_Landfill.pdf) Accessed 6/8/17.

MDE, 2008-2017. MDE CCB Tonnage Reports. Available on MDE website:

<http://mde.maryland.gov/programs/land/SolidWaste/Pages/ccbs.aspx> Accessed 6/6/17.

MDE, 2008. Press Release, Maryland Department of the Environment, Baltimore, MD, November, 25, 2008.

<http://www.mde.state.md.us/programs/PressRoom/Pages/1157.aspx> accessed 7/6/17.

MDE, 2009a. *Facts About: Pennington Avenue Landfill*. Factsheet dated November 2009.

<http://websrvr.mde.md.gov/assets/document/Pennington%20Avenue%20Landfill.pdf>. Accessed 7/5/17.

MDE, 2009b. *Maryland Historic Landfill Initiative*. 25 March, 2009.

MDE, 2010. *Facts About: Coal Combustion Byproduct Sites in Maryland*. Factsheet dated 13 August 2010.

<http://www.mde.state.md.us/programs/Land/SolidWaste/Documents/www.mde.state.md.us/assets/document/FactSheetCCBSites.pdf> Accessed 7/5/17.

MDE, 2013. *Facts About: Rossville Coal Ash Structural Fill Site*. Factsheet dated November 2013.

<http://mde.maryland.gov/programs/Land/MarylandBrownfieldVCP/Documents/Rossville%20Coal%20Ash%20Structural%20Fill%20Site.pdf> Accessed 7/5/17.

MDE, 2014a. *Facts About: BFI Quarantine Road Site*. Factsheet dated May 2014.

<http://mde.maryland.gov/programs/Land/MarylandBrownfieldVCP/Documents/QUARANTINE%20ROAD.pdf> Accessed 7/5/17.

- MDE, 2014b. *Facts About: Old Cumberland City/County Dump*. Factsheet dated December 2014.  
<http://mde.maryland.gov/programs/Land/MarylandBrownfieldVCP/Documents/OLD%20CUMBERLAND%20DUMP.pdf> Accessed 7/5/17.
- MDE, 2014c. *Facts About: Reedbird Landfill Site*. Factsheet dated December 2014.  
<http://mde.maryland.gov/programs/Land/MarylandBrownfieldVCP/Documents/REEDBIRD.pdf> Accessed 7/5/17.
- MDE, 2017. *Brownfields Master Inventory (BMI)*.  
<http://www.mde.state.md.us/programs/Land/MarylandBrownfieldVCP/Pages/BrownfieldMasterInventory.aspx> accessed 7/22/17.
- MDE SWP, 2017. *Permitted Solid Waste Acceptance Facilities*. Factsheet dated 10 January 2017.  
[http://mde.maryland.gov/programs/Land/SolidWaste/Documents/Permitted\\_Solid\\_Waste\\_Facilities.pdf](http://mde.maryland.gov/programs/Land/SolidWaste/Documents/Permitted_Solid_Waste_Facilities.pdf) Accessed 7/5/17.
- 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-corporation-v-state-of-maryland-r-c> Accessed 6/9/17.
- PPER, 1994. *Environmental Aspects of the Brandon Woods Coal Ash Site*. May 1994. Report No. PPER-MP-60.
- PPRP, 2005. *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*. In prep.
- 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*. In prep.
- 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.



- Siegel, Andrew, 1996. County allows BGE to put coal ash at Brandon Woods Community hails ruling, which followed long battle with utility. *Baltimore Sun*, 10 December 1996. [http://articles.baltimoresun.com/1996-12-10/news/1996345101\\_1\\_fly-ash-coal-ash-bge](http://articles.baltimoresun.com/1996-12-10/news/1996345101_1_fly-ash-coal-ash-bge) Accessed 7/5/17.
- Sierra Club, 2016. C.P. Crane Coal-Fired Power Plant Files for Deactivation. <http://content.sierraclub.org/press-releases/2016/11/cp-crane-coal-fired-power-plant-files-deactivation> Accessed 6/7/17.
- Stewart, Joshua, 2008b. Fly ash settlement finalized. *The Capital*, 31 December 2008. <http://severnriver.org/publications/press/PressOlder/flyash.htm> Accessed 7/5/17.
- Wheeler, Timothy, 2010. MD. Sues Mirant over pollution from Prince George's landfill. *The Baltimore Sun*. 3 April 2010. [http://articles.baltimoresun.com/2010-04-03/features/bal-md.gr.coalash03apr03\\_1\\_coal-ash-disposal-300-acre-landfill-dawn-stoltzfus](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*. 13 January, 2013. <http://www.baltimoresun.com/features/green/blog/> Accessed 7/5/17.



*Appendix A*  
*CCB Site Matrix*



County	Site Name	Location (Address and/or description)	Current Owner	Permits, Enforcement Actions, etc.	CCB Source & Type	CCB Quantity	Period Active	Status
Allegany	Amcelle Rubble Landfill	Under and adjacent to the inactive rubble landfill located southwest of the Western Correctional Institute, 13800 McMullen Highway Southwest, Cumberland, MD 21502-5622, on the grounds of the former Celanese plant.	Allegany County Commissioners; State of Maryland	Landfill permit No. 1993-WRF-0206-0 (expired in July 2001. Landfill final cap completed in September 2010. Ground water is monitored for the landfill. .	Former Celanese plant	Unknown	Unknown (CCB placement ended before landfill construction	Inactive, partially capped
Allegany	Cabin Run / Vindex Energy #6	Rt. 36 3 miles south of Frostburg.	Beechwood Coal, LLC	MDE ID# SM-01-439. Permitted on 3/22/04 to receive maximum of 360,000 tons CCBs/yr.	Warrior Run Power Plant; FBC fly ash and bed ash	Unknown	2008-Present	Active
Allegany	Cobra Mining, Inc.	Potomac Hollow Road - 0.5 miles East of Barton.	Vindex Energy Corp.	MDE ID# SM-01-437. Permit granted 12/1/06 to place a maximum of 24,000 tons/yr.	Warrior Run Power Plant; FBC fly ash and bed ash	2,116 tons	2006-Present	Active
Allegany	Cumberland Site 1	West Side of Rt. 220 near intersection with Upper Potomac Industrial Park St.	Zollner, LLC.	Unknown	Cumberland Power Plant; fly ash, some bottom ash	Unknown, 5-acre site	Late 1950's to early 1960's	Capped (open field)
Allegany	Cumberland Site 2	West of N. Cresap St.	Difficult to identify parcel precisely. Cresap Knoll Apartments, Inc.; Oster Wayne A.; Firlie, or Bruce-Cindy	Unknown	Cumberland Power Plant; fly ash, some bottom ash	Unknown, 5-acre site	Late 1950's to early 1960's	Capped (open field)
Allegany	Cumberland Site 3	North of Limestone Rd.	Diggs Joseph T (associated with former landfill), Possibly also Brabson Delmas Ray-Carolyn	Archived CERCIS site (no further remedial action planned).	Cumberland Power Plant; fly ash, some bottom ash	Unknown, 5-acre site	Late 1950's to early 1960's	Mixed Waste Landfill. Capped (open field)
Allegany	G&S Coal Co. #4	Miller Road, South of Barton, 1 mile east of Rt. 36 Intersection.	TTT Coal Co., Inc.	MDE ID# SM-01-440. Permitted on 4/6/2000 to receive maximum of 36,400 tons of CCBs/yr.	Warrior Run Power Plant; FBC fly ash and bed ash	19,625 tons	pre-2009-present	Active
Allegany	Mountain View Landfill	13300 New George's Creek Road, Frostburg.	Chambers of MD, Inc.	Landfill Permit No. 2016-WMF-0010	Brandon Shores Power Plant, Wagner Power Plant; Class F fly ash	approx. 10,000 tons in 2008	Unknown (at least 2008-2010)	Mixed Waste Landfill, Active
Allegany	Ritchie Trucking and Excavating	Midlothian Rd 1 mile south of Frostburg	Allegany Coal Land Co.	MDE ID # SM-08-40. Permitted on 3/9/16 to receive maximum 10,000 tons of CCBs/year.	Warrior Run Power Plant; FBC fly ash and bed ash	309 tons	Unknown	Capped (open field)
Allegany	Tri-Star Mining #3	Michael Road via Bartlett Run Rd - 2.1 miles west of Barton.	BTC Development	MDE ID # SM-91-419. Permitted on 4/6/00 to receive maximum of 38,400 tons of CCB/year.	Warrior Run FBC fly ash and bed ash	205,000 tons	2000-2006	Inactive

County	Site Name	Nearest Major Water Body	Distance from Nearest Major Water Body (Miles)	Notes	References	Location Within Floodplain	Recoverability	Recoverability Rationale
Allegany	Amcelle Rubble Landfill	Potomac River	0.200	The rubble landfill was constructed over a portion of a former CCB lagoon owned by Celanese. The rubble landfill is closed and capped. The other portion of the former lagoon may have been intended to be a county landfill that was never constructed. MDE 2010 CCB factsheet indicates that vegetation is present on the portions of the CCB fill area not covered by the rubble landfill.	MDE, 2010; Allegany County, 2011	FEMA 100 Yr. Floodplain Data Not Available	Potentially Recoverable	Portion that is not under rubble landfill may be only capped and vegetated.
Allegany	Cabin Run / Vindex Energy #6	Georges Creek Headwater	1.000	Note: records search indicates a Cabin Run Landfill for mixed wastes operated from 1975-1981. the landfill was associated with a former coal surface mine, but there are no records of CCB disposal there (see fact sheet). It is unclear if the mining and use of CCBs to backfill mine (2012-2016) is associated with that site.	MDE, 2010; Hooker, 2017	FEMA 100 Yr. Floodplain Data Not Available	Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.
Allegany	Cobra Mining, Inc.	Georges Creek	1.000	Period active information based on Hooker, 2017. MDE table lists site as active, but with no CCBs placed since 2013. Site appears to be vegetated in satellite image (double check location with MDE shapefile)	PPSP, 1982a; Hooker, 2017; Maryland MERLIN Online	FEMA 100 Yr. Floodplain Data Not Available	Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.
Allegany	Cumberland Site 1	Potomac River	0.150	Report indicates that the Cumberland power plant generated only small quantities of ash that, at this time was disposed in "landfills south of Cumberland). Plant stopped burning coal in 1970.	PPSP, 1982a; Maryland MERLIN Online	FEMA 100 Yr. Floodplain Data Not Available	Potentially Recoverable	CCBs only, capped, vegetated only
Allegany	Cumberland Site 2	Potomac River	0.800	It appears that Log Trail Road may have been constructed over part of the fill site. Report indicates that the Cumberland power plant generated only small quantities of ash that, at this time, was disposed in "landfills south of Cumberland). Plant stopped burning coal in 1970.	PPSP, 1982a; Maryland MERLIN Online	FEMA 100 Yr. Floodplain Data Not Available	Potentially Recoverable	CCBs only, capped, vegetated only
Allegany	Cumberland Site 3	Potomac River	0.700	The site is located on Limestone Road south of Cumberland and is near the Diggs Sanitary Landfill former Superfund site. Operations ceased in 1968. The site was listed with CERCLIS in 1981. State and federal investigations occurred in 1981, 1986, and 1992. The site was archived in 1994.	PPSP, 1982a; MDE, 2014b, Maryland MERLIN Online	FEMA 100 Yr. Floodplain Data Not Available	Not Recoverable	Mixed Waste
Allegany	G&S Coal Co. #4	Georges Creek	0.650	Active status indicated by Hooker, 2017, however MDE tables indicate no ash placed since 2011. Portions of site appears active in satellite image.	MDE, 2010; Hooker, 2017; Maryland MERLIN Online	FEMA 100 Yr. Floodplain Data Not Available	Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.
Allegany	Mountain View Landfill	Georges Creek Headwater	1.600		MDE, 2010; MDE SWP, 2017	FEMA 100 Yr. Floodplain Data Not Available	Not Recoverable	Mixed Waste
Allegany	Ritchie Trucking and Excavating	Georges Creek Headwater	1.800	Tonnage placed is from a comment in Hooker, 2017 tables, the tonnage table shows no placement from 2009-present.	MDE, 2010; Hooker, 2017; Maryland MERLIN Online	FEMA 100 Yr. Floodplain Data Not Available	Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.
Allegany	Tri-Star Mining #3	Georges Creek	0.900	Hooker, 2017 indicates that CCB filling at site is "complete." However, presence of cap or vegetation unclear in satellite image. For this reason, site status is classified as "inactive."	MDE, 2010; Hooker, 2017; Maryland MERLIN Online	FEMA 100 Yr. Floodplain Data Not Available	Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.

County	Site Name	Location (Address and/or description)	Current Owner	Permits, Enforcement Actions, etc.	CCB Source & Type	CCB Quantity	Period Active	Status
Allegany	Tri-Star Mining #4	Rt. 36 1.3 miles north of Westernport.	Unclear from Maryland MERLIN Online	MDE ID # SM-84-264. Permitted on 5/18/2005 to receive a maximum of 24,000 tons CCBs/yr.	Warrior Run FBC fly ash and bed ash	9,000 tons	2005-2006	Inactive
Allegany	Vindex Energy Corp - Carlos	Legislative Rd 1.4 miles south of Midlothian	Beechwood Coal, LLC	MSHA ID# 1800769. MDE ID# SM-84-393. Permitted on 12/12/08 to receive up to 360,000 tons of CCBs/year.	Warrior Run FBC fly ash and bed ash	958,264 tons	2006-present	Active
Allegany	Vindex Energy Corp. #4	Potomac Hollow Road - 0.2 miles East of Barton.	Vindex Energy Corp.	MDE ID# SM-96-427. Permitted on 12/12/08 to receive maximum of 360,000 tons/yr CCBs.	Warrior Run FBC fly ash and bed ash	500,000 tons	2008-2013	Capped (open field)
Allegany	Vindex Energy Corp. #5	Potomac Hollow Rd east of Barton.	Vindex Energy Corp.	MDE ID # SM-99-432. Permitted on 12/12/08 to receive a maximum of 360,000 tons CCBs/yr.	Warrior Run FBC fly ash and bed ash	350,000 tons	2008-2016	Capped (open field)
Allegany	Walker Bros.	West Side of Fair View Farm Rd., north of intersection with Morgan Ct.	Walker Bros.	SM-07-453. Permitted on 3/15/16 to receive a maximum of 48,000 tons of CCBs/yr	Warrior Run FBC fly ash and bed ash	12,118 tons	2016-Present	Active
Anne Arundel	BBSS	MD Route 3 between Evergreen Road and Waugh Chapel Road	BBSS, LLC	Ground water treatment system installed in 2004. Ground water impacts identified in 2006-2007. Cleanup and penalties ordered by MDE and Anne Arundel County in 2007. Lawsuit filed in 2007 by adjacent residents, settled in 2008. Was one of 38 proven CCR damage cases identified by EPA in the lead up to publishing the 2015 CCB disposal rule.	Brandon Shores power plant Class F fly ash.	2,400,000 tons	1995-2007	Capped, buildings
Anne Arundel	Turner Pit (West)	MD Route 3 between Evergreen Road and Waugh Chapel Rd. (bounded by Evergreen Road, Brickhead Road, and Towsers Branch).	LOBS, LLC	See notations for BBSS site	Brandon Shores power plant Class F fly ash.	Unknown - 30.5-acres site	1995-2007	Inactive
Anne Arundel	Waugh Chapel Pit	Between Brickhead and Waugh Chapel Roads, southeast of Towsers Branch.	BBSS, LLC, and LOBS, LLC	See notations for BBSS site	Brandon Shores power plant Class F fly ash.	Unknown, approx. 50-acre area	1995-2007	Inactive
Anne Arundel	Brandon Woods	Ft. Smallwood and Solley Rd.	Brandon Woods, LLC	A court case was settled in 1996 involving widening of Solley Road on which side private land would be taken (land to be taken from Brandon Woods Side.)	Brandon Shores Power Plant, Wagner Power Plant; Class F fly ash	3,500,000 tons	1982-1990	Capped (buildings)
Anne Arundel	Joy/Boehm Landfill State#MD-030	1373 Saint Stephen's Church Road, Crownsville, MD 21032.	Boem, Lois	Landfill was permitted to receive various industrial wastes in the mid-1970s until it was closed through state enforcement in the mid-1980s. Monitoring wells are present onsite. MDE filed lawsuit for tire cleanup in 2010.	Unknown	Unknown	Late 1970s - 1985	Mixed waste landfill, portions capped
Anne Arundel	Millersville Landfill	Burns Crossing Road, Millersville, Cell 1E, Millersville Sanitary Landfill.	Anne Arundel County	Landfill Permit # 2012-WMF-0240	Brandon Shores Power Plant, Wagner Power Plant; Class F fly ash	64,000 cubic yards	prior to 2010	Mixed Waste Landfill; Capped (open field)

County	Site Name	Nearest Major Water Body	Distance from Nearest Major Water Body (Miles)	Notes	References	Location Within Floodplain	Recoverability	Recoverability Rationale
Allegany	Tri-Star Mining #4	Georges Creek	0.600	Hooker, 2017 indicates that CCB filling at site is "complete." However, presence of cap or vegetation unclear in satellite image. For this reason, site status is classified as "inactive."	MDE, 2010; Maryland MERLIN Online	FEMA 100 Yr. Floodplain Data Not Available	Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.
Allegany	Vindex Energy Corp - Carlos	Georges Creek Headwater	1.500	Coal Age article indicates a 2011 reforestation award for this site. Hooker, 2017 indicates site is active, but no CCBs placed since 2012.	MDE, 2010; Hooker, Alan, 2017; Coal Age, 2012; MDE, 2008-2017; Maryland MERLIN Online	FEMA 100 Yr. Floodplain Data Not Available	Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.
Allegany	Vindex Energy Corp. #4	Georges Creek	0.800	Period active based on Hooker, 2017.	MDE, 2010; Hooker, 2017; MDE, 2008-2017; Maryland MERLIN Online	FEMA 100 Yr. Floodplain Data Not Available	Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.
Allegany	Vindex Energy Corp. #5	Georges Creek	2.000	Status based on Hooker, 2017.	MDE, 2010; Hooker, 2017; Maryland MERLIN Online	FEMA 100 Yr. Floodplain Data Not Available	Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.
Allegany	Walker Bros.	Staub Run	0.371		Hooker, 2017	FEMA 100 Yr. Floodplain Data Not Available	Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.
Anne Arundel	BBSS	Severn River, Chesapeake Bay	5.000	Site has been capped and redeveloped, with the exception of one small portion referred to as the Turner Pit (West) (see entry for Turner Pit (West))	MDE, 2010; PPRP, 2007; Stewart, 2008; Maryland MERLIN Online	No	Not Recoverable	Capped, buildings
Anne Arundel	Turner Pit (West)	Severn River, Chesapeake Bay	5.000	The majority of the Turner Pit lies beneath the Waugh Chapel shopping center, however, a small portion may not have been redeveloped. Satellite imagery that the areas is not redeveloped or vegetated. Windshield Survey performed on 7/25/17 confirmed the triangular pond is still present. Active earth moving activity observed on main part of site. No vegetation except around triangular pond. Sign at private road entrance lists owner as Reliable Construction.	MDE, 2010; PPRP, 2007; Stewart, Joshua, 2008a; Stewart, Joshua, 2008b; Maryland MERLIN Online	No	Potentially Recoverable	CCBs only, capped, no redevelopment
Anne Arundel	Waugh Chapel Pit	Severn River, Chesapeake Bay	5.000	The Waugh Chapel pit is a slightly smaller pit located north and Turner Pit. Satellite imagery indicates that it is vegetated, but not redeveloped. Windshield survey performed on 7/25/17. Most of site was blocked from view by vegetation along Waugh Chapel Road. Sign at private entrance to site was labeled "Reliable Construction Waugh Chapel Plant." Active traffic was observed entering and leaving the site.	MDE, 2010; PPRP, 2007; Stewart, Joshua, 2008a; Stewart, Joshua, 2008b; Maryland MERLIN Online	No	Potentially Recoverable	CCBs only, capped, vegetated.
Anne Arundel	Brandon Woods	Chesapeake Bay	3.000	Since widening of Solley Rd. was done on the Brandon Woods side, a portion of the road may have been placed over CCBs.	MDE, 2010; PPER, 1994; Siegel, 1996	No	Not recoverable	Capped, buildings
Anne Arundel	Joy/Boehm Landfill State#MD-030	Severn River, Chesapeake Bay	2.800	CCBs are believed to have been used as structural fill and to have been placed in a clay-lined industrial portion of the landfill.	MDE, 2010; Jackson, 2012; Barr, 2012	No	Not Recoverable	Mixed Waste
Anne Arundel	Millersville Landfill	Severn River, Chesapeake Bay	3.000	Although the landfill is still active, CCBs are not being placed into active areas and the area where they were placed has been closed.	MDE, 2010; MDE SWP, 2017	No	Not Recoverable	Mixed Waste



County	Site Name	Location (Address and/or description)	Current Owner	Permits, Enforcement Actions, etc.	CCB Source & Type	CCB Quantity	Period Active	Status
Anne Arundel	Solley Road Site	7890 Solley Road, Glen Burnie, MD.	BFI Waste Systems of North America	EPA issued Corrective Action Permit #MDD000797365 in July 1991. Final Remedy was issued in July 2012.	Wagner Power Plant; Class F fly ash, some bottom ash	Unknown, 29-acre site	1965 - 1975	Mixed Waste Landfill. Capped (open field)
Anne Arundel	Wagner Power Plant Site 1	Wagner Station Rd. Curtis Bay, MD (Along railroad adjacent to Power plant).	Raven FS Property Holdings, LLC	Multiple for power plant; Unknown for CCBs	Wagner Power Plant, fly ash and bottom ash	Unknown	1980-1982, possibly beyond	Capped (vegetated)
Anne Arundel	Wagner Site Power Plant 2	Wagner Station Rd. Curtis Bay, MD.	Raven FS Property Holdings, LLC	Multiple for power plant; Unknown for CCBs	Wagner Power Plant, fly ash and bottom ash	Unknown	1980-1982, possibly beyond	Capped (road)
Baltimore	Battle Grove Park Site	New Battle Grove Circle, Dundalk, MD.	Baltimore County	None	Riverside Power Plant; fly ash, some bottom ash	Unknown - 15-acre site	Late 1950's	Capped - Park, Buildings
Baltimore	Charlesmont Site	Southwest of North Point Road and Deboy Avenue.	Baltimore County, Fill possibly also extends under multiple private homes.	None	Riverside Power Plant; fly ash, some bottom ash	Unknown - 30-acre site	Late 1950's	Capped - Park, Buildings
Baltimore	Coffin Point Site	4330 Broening Hwy, Dundalk, MD.	State of Maryland (Highway Administration)	None	Riverside Power Plant; Mixed, mostly fly ash	Unknown - 8-acre site	Early 1950's	Capped (building)
Baltimore	Crane Power Plant Site	1099 Carroll Island Road, Baltimore.	Avenue Capital	Multiple for power plant; Unknown for CCBs	Crane Power Plant, fly ash, some boiler slag	Unknown	1961 to 1971; 1980	Capped (some vegetated, some buildings)
Baltimore	I695 Sparrows Pt. Overpass	I-695 adjacent to Former Sparrows Point Steel Plant.	Maryland State Highway Administration	Project was completed in cooperation with the Md State Highway Administration. Monitoring performed in 2003 and in 2014.	Brandon Shores Power Plant, Wagner Power Plant; Class F fly ash	320,000 tons	1996-1998	Capped (highway embankment)
Baltimore	Norris Farm Site	101 Norris Lane, Dundalk, MD 21222.	Browning-Ferris Inc.	Listed on CERCLIS under aliases MD-18, MD-22, MD-23, and MD-48. MDE fact sheet indicates that site is closed and monitored by MDE Solid Waste Division.	Riverside Power Plant, Wagner Power Plant; fly ash, some bottom ash	Unknown - 230-acre site	Mid-1960's to 1976; 1979	Mixed Waste Landfill, Capped (open field)
Baltimore	Patapsco Flats Site	Southwest quadrant where 895 meets West Patapsco Ave.	Baltimore County	None listed, although this site did appear on MDE's Historic Landfill Initiative list.	Westport Power Plant, Gould Street Power Plant, Wagner Power Plant; fly ash, some bottom ash	Unknown - 260-acre site	1950's to early 1960's (intermittent)	Mixed Waste landfill - Capped (vegetated)
Baltimore	Peach Orchard Cove Site	335 Sollers Point Rd.; Baltimore, MD (multiple smaller individual addresses).	Baltimore County; Our Lady of Avang Roman Catholic Church; multiple other private owners	None	Riverside power plant; Fly ash, some bottom ash	Unknown - 15-acre site	1950's - early 1960's	Capped (park, buildings, church)

County	Site Name	Nearest Major Water Body	Distance from Nearest Major Water Body (Miles)	Notes	References	Location Within Floodplain	Recoverability	Recoverability Rationale
Anne Arundel	Solley Road Site	Chesapeake Bay	2.000	Figure in PPRP, 1982 figure may have shifted site too far north. EPA, 2016a indicates that there was a BFI landfill southwest of the intersection of Solley and Nabbs Creek Roads. EPA, 2012 indicates that the final remedy for site included: Maintenance of landfill cap; operation and maintenance of ground water recovery and treatment system, gas extraction system, and leachate collection system.	PPSP, 1982; MDE, BFI Factsheet; EPA, 2012; EPA, 2016a; Maryland MERLIN Online	No	Not Recoverable	Mixed Waste
Anne Arundel	Wagner Power Plant Site 1	Chesapeake Bay	0.250	As of 1982 report, this area was actively receiving material. Unknown if filling continued beyond 1982. Hoyt, 2017 indicated that he was unaware of any historic CCB storage or disposal onsite.	PPSP, 1982a; Hoyt, 2017; Maryland MERLIN Online	No	Not Recoverable	CCB fil could not be verified in 2017 contact with plant
Anne Arundel	Wagner Site Power Plant 2	Chesapeake Bay	0.250	As of 1982 report, this area was actively receiving material. Unknown if filling continued beyond 1982. Hoyt, 2017 indicated that he was unaware of any historic CCB storage or disposal onsite.	PPSP, 1982a; Hoyt, Brian, 2017; Maryland MERLIN Online	No	Not Recoverable	CCB fil could not be verified in 2017 contact with plant
Baltimore	Battle Grove Park Site	Bear Creek, Chesapeake Bay	0.010	While quantity is not listed, text of PPSP, 1982 report references this as a relatively small site.	PPSP, 1982a; Maryland MERLIN Online	No	Not Recoverable	Capped, buildings
Baltimore	Charlesmont Site	Bear Creek, Chesapeake Bay	0.010	While quantity is not listed, text of PPSP, 1982 report references this as a relatively small site.	PPSP, 1982a; Maryland MERLIN Online	Yes	Not recoverable	Capped, buildings
Baltimore	Coffin Point Site	Chesapeake Bay	0.010	While quantity is not listed, text of PPSP, 1982 report references this as a relatively small site.	PPSP, 1982a; Maryland MERLIN Online	No	Not recoverable	Capped, buildings
Baltimore	Crane Power Plant Site	Chesapeake Bay	0.100	In Nov 2016 Crane power plant filed Deactivation notice effective June 2018.	PPSP, 1982a; Sierra Club, 2016; Forbes, 2017; Maryland MERLIN Online	No	Not Recoverable	CCB fil could not be verified in 2017 contact with plant
Baltimore	1695 Sparrows Pt. Overpass	Bear Creek, Chesapeake Bay	0.700	Monitoring performed in 2003 and 2014.	MDE, 2010; PPRP, 2004; PPRP, 2017a	No	Not recoverable	Capped, major road
Baltimore	Norris Farm Site	Back River, Chesapeake Bay	0.100	Landfill closed in 1991. EPA issued No Further Remedial Action Planned designation in 1992.	PPSP, 1982a; MDE, Norris Farm Landfill/Chemical Processing Center (MD-18) Dundalk, Baltimore County, MD; Maryland MERLIN Online	No	Not recoverable	Mixed Waste
Baltimore	Patapsco Flats Site	Patapsco River	0.010	1982 report lists this as an inactive landfill. The site is listed in MDE, 2009 as also being known as Reliable SLF and a site with no defined location or owner.	PPSP, 1982a; MDE, 2009b; Maryland MERLIN Online	Yes	Not Recoverable	Mixed Waste
Baltimore	Peach Orchard Cove Site	Bear Creek, Chesapeake Bay	0.010		PPSP, 1982a; Maryland MERLIN Online	Yes	Not recoverable	Mixed Waste

County	Site Name	Location (Address and/or description)	Current Owner	Permits, Enforcement Actions, etc.	CCB Source & Type	CCB Quantity	Period Active	Status
Baltimore	Riverside Power Plant Site	4000 Broening Hwy., Dundalk, MD.	Constellation Power Generator; Baltimore Gas & Electric	Multiple for power plant; Unknown for CCBs	Riverside power plant; Fly ash, some bottom ash	Unknown	Early 1950s	Unknown
Baltimore	Rossville Industrial Park	US Rt. 40 and Rossville Blvd.	Constellation Power Source	On 7/15/82, BGE applied to the Dept. of Health & Mental Hygiene for permit to develop the site by reclaiming former clay mine with CCBs. On 10/26/82, the Baltimore County Dept. of Health issued a special Waste Disposal Facilities Permit to operate a fly ash disposal site based on the application. On 1/26/88, MDE issued a validation Industrial Waste Disposal Permit to dispose fly ash at the site. On 3/29/88, MDE issued a modification to the reporting requirements. On 4/27/88, MDE issued a Pozzolan exemption for the disposal of coal ash at the site. This essentially voided previous permits by exempting the disposal of pozzolan from waste regulations; however, BGE continued monitoring the site. Investigations of impacts to soil and ground water and extent of CCBs were performed in 2008 and 2010. In 2011, site was accepted into the MDE VCP program with proposed future land use of restricted commercial/industrial use. According to MDE, 2017, site was still an active site with monitoring, though no active remediation.	CP Crane power plant, Brandon Shores Power Plant, HA Wagner Power Plant; Class F fly ash	45,000 tons	1983-2007	Capped (vegetated)
Baltimore City	Cherry Hill Site	Northwest quadrangle where 895 meets West Patapsco Ave.	City of Baltimore	None located.	Westport Power Plant, Gould Street Power Plant, Wagner Power Plant; fly ash, some bottom ash	Unknown - 250-acre site	1950's to early 1960's	Mixed Waste landfill - Capped (Park, few buildings)
Baltimore City	Fort Armistead Road - Lot 15 Industrial Landfill	3601 Fort Armistead Road, Baltimore, MD 21226	Raven Group	2011-WIF-0653	Brandon Shores, H.A. Wagner, C.P.Crane; Class F fly ash, bottom ash, Class C fly ash, boiler slag, FGD material	511,296 Tons	2011-Present	Active
Baltimore City	Pennington Avenue Site	1501 Aspin St., Baltimore, MD	City of Baltimore	MDE performed a Site Investigation in 1997. EPA issued a letter of No Further Remedial Action Planned in 1998. Application to the Voluntary Cleanup Program submitted in 2008 by Glenn Abbey V., LLC. Proposed use of the site was Tier 3B restricted industrial use. MDE required a Phase II Assessment. As of November 2009, the application was under delayed status. MDE VCP manager was Jeff Harp. No info available after 2009 (date of fact sheet).	Westport Power Plant, Gould Street Power Plant, Wagner Power Plant; Mixed, mostly fly ash	Unknown - 68-acre site	1960's (intermittent)	Mixed Waste landfill - Capped (vegetated)
Baltimore City	Quarantine Road Site	5901 Quarantine Road, Curtis Bay, MD 21226.	Mayor & City Council of Baltimore (formerly owned by Browning-Ferris Industries/ c/o Republic Services Property TA)	Multiple investigations with state and federal involvement during the 1980s. Based on results of 1985 site investigation, EPA recommended that the site be given a No Further Remedial Action Planned status.	Wagner Power Plant; Mixed, mostly fly ash	Unknown - 85-acre site	1968 to 1975	Mixed Waste Landfill, Capped (vegetated)

County	Site Name	Nearest Major Water Body	Distance from Nearest Major Water Body (Miles)	Notes	References	Location Within Floodplain	Recoverability	Recoverability Rationale
Baltimore	Riverside Power Plant Site	Chesapeake Bay	0.100	PPSP, 1982 says "some ash disposed of in various portions of plant property". Without knowing exactly which portions those were, difficult to determine if there are buildings on top of them. Satellite imagery indicates that northern portion of site is developed while southern portion contains vegetation. Windshield survey performed on 7/25/17 confirmed that buildings, ASTs, power lines, and access roads are still present. Site appears to be in active use by BGE, as BGE trucks were observed on the property. Areas where CCBs were placed could not be discerned.	PPSP, 1982a; Maryland MERLIN Online	No	Potentially Recoverable	CCBs only, inactive site
Baltimore	Rossville Industrial Park	Back River, Chesapeake Bay	1.500	CCBs were used to reclaim an onsite clay mine. Between 1983 and 1995, fly ash from CP Crane, which had received state & federal approval to co-fire approx. 325,000 gal. of PCB-contaminated oil	MDE, 2010; MDE, 2013; MDE, 2017	No	Potentially Recoverable	CCBs only, capped, vegetated only
Baltimore City	Cherry Hill Site	Patapsco River	0.010	Not listed in MDE Historic Landfill Initiative report.	PPSP, 1982a; Maryland MERLIN Online	No	Not Recoverable	Mixed Waste
Baltimore City	Fort Armistead Road - Lot 15 Industrial Landfill	Swan Creek	0.120	Active CCB landfill, first CCB landfill to be constructed in Maryland with full permit and in compliance with 2008 MDE disposal regulations for CCBs. Multiple types of CCBs are co-disposed at the site.	MDE WMS, 2017; MDE 2008-2017	No	Potentially Recoverable	Active site receiving only CCBs
Baltimore City	Pennington Avenue Site	Chesapeake Bay	0.700	Period reported in PPSP, 1982 for disposal of CCBs preceded the official permitted operation of the municipal landfill (1976-1981). Site not listed in MDE Historic Landfill Initiative or Brownfields Master Inventory.	PPSP, 1982a; MDE, 2009a; MDE, 2009b, Maryland MERLIN Online	No	Not Recoverable	Mixed Waste
Baltimore City	Quarantine Road Site	Chesapeake Bay	0.300	Landfill closed and capped in 1984. Note that there is an active municipal landfill adjacent to this site to the west (6100 Quarantine Road).	PPSP, 1982a; MDE, 2014a; Maryland MERLIN Online	No	Not Recoverable	Mixed Waste

County	Site Name	Location (Address and/or description)	Current Owner	Permits, Enforcement Actions, etc.	CCB Source & Type	CCB Quantity	Period Active	Status
Baltimore City	Reed Bird Site	Northeast quadrant where 895 meets West Patapsco Ave.	City of Baltimore	Multiple state and federal investigations from 1981 - 1999. Final state investigation recommended that EPA archive the site.	Gould Street power plant, Wagner power plant, Westport power plant; Fly ash, some bottom ash	Unknown - 118-acre site	1960's (intermittent)	Mixed waste landfill - Capped (vegetated)
Baltimore City	Thomas Cove Site	5501 Quarantine Road, Baltimore, MD 21226.	State of Maryland	None specific to Thomas Cove Site however, Hawkins Point Site appears to overlap it. Hawkins Point Landfill EPA ID MDD000731356. EPA initially issued Corrective Action Permit in 1985, MDE issued a renewal of the post-closure permit in 2012.	Wagner Power Plant; Fly ash, some bottom ash	Unknown - 5-acre site	1979	Mixed Waste Landfill, Capped (vegetated, possible structures)
Baltimore City	Westport Power Plant Site 1	2101 Kloman St., Baltimore, MD.	Inner Harbor West II LLC	None located.	Westport Power Plant; fly ash, bottom ash	Unknown	1960-1970	Capped (parking lot)
Baltimore City	Westport Site Power Plant 2	2101 Kloman St., Baltimore, MD.	Inner Harbor West II LLC	None located.	Westport Power Plant; fly ash, bottom ash	Unknown	1960-1970	Capped (vegetated and parking lot)
Charles	Morgantown Power Plant Site	12620 Crain Hwy, Newburg, MD 20664.	Mirant Mid-Atlantic, LLC (Genon)	None located related to CCBs.	Morgantown, fly ash, bottom ash	Unknown	Early 1970s	Unknown (see notes)
Charles	Waldorf Site	2600 Crain Hwy, Waldorf, MD 20601.	Waldorf Toyota (Kody Holdings, LLC)	Few EPA and MDE actions with regard to operation of auto dealership and service center, none located related to CCBs.	Morgantown Power Plant, fly ash some bottom ash	Unknown - 5-acre site	Early 1970s	Capped - Buildings
Charles	Faulkner Fly Ash Storage Site	10200 Faulkner Road, Faulkner, MD 20664.	NRG	Consent decree issued in 2013 settling lawsuits from state and environmental groups.	Morgantown Power Plant, Class F fly ash	7 million cubic yards	1975-at least 2010	Active
Dorchester	Vienna Power Plant Site 1	Vienna Power Plant property. South side of Rt. 50 west of the Nanticoke River.	Vienna Power, LLC	Multiple studies performed by DNR in the early 1980s, but no references to legal actions were located.	Vienna Power Plant; fly ash	Unknown	1950-1966	Capped, buildings
Dorchester	Vienna Site Power Plant 2	South of Rt. 50 just east of the Nanticoke River.	Delmarva Power	Multiple studies performed by DNR in the early 1980s, but no references to legal actions were located.	Vienna Power Plant; fly ash	Unknown	1966-1972	Capped (vegetated)
Garrett	ARI Construction	West of Westernport Rd.	Ari Construction	SM-13-463. Permitted on 2/24/16 to receive a maximum of 180,000 tons of CCBs/yr.	Warrior Run FBC fly ash and bed ash	68,690 tons	2016-Present	Active
Garrett	G&S Coal Co.	North of Pee Wee Rd.	G&S Coal Co.	SM-08-455. Permitted on 7/1/10 to receive a maximum of 12,000 tons of CCBs/yr.	Warrior Run FBC fly ash and bed ash	1,902 tons	2010-Present	Active
Garrett	G&S Coal Co. #1	Mt. Zion Road - 2.9 Miles SE of Rt. 135. Just north of intersection of Mt. Ziain Rd. and Conklyns Rd.	G&S Coal Co.	MDE ID# SM-92-421. Permitted on 1/15/02 to receive maximum of 24,000 tons of CCBs/yr.	Warrior Run FBC fly ash and bed ash	12,623 tons	pre-2009-present	Active

County	Site Name	Nearest Major Water Body	Distance from Nearest Major Water Body (Miles)	Notes	References	Location Within Floodplain	Recoverability	Recoverability Rationale
Baltimore City	Reed Bird Site	Patapsco River, Inner Harbor	0.010	MDE, 2017c indicates that filling of this area with ash and other refuse dates back to the late 1800's and continued until 1977. Fact sheet further indicates that the site is part of Cherry Hill Park (Cherry Hill Site may have once been considered part of Reed Bird)	PPSP, 1982a; MDE, 2014c; Maryland MERLIN Online	No	Not Recoverable	Mixed Waste
Baltimore City	Thomas Cove Site	Chesapeake Bay	0.100	EPA, 2016b indicates that Hawkins Point Landfill overlaps the Thomas Cove site. This is consistent with the reference to chromium-impacted material at the Thomas Cove site in PPSP, 1982a.	PPSP, 1982; EPA, 2016b; Maryland MERLIN Online	No	Not Recoverable	Mixed Waste
Baltimore City	Westport Power Plant Site 1	Patapsco River, Inner Harbor	0.010	Ash used to fill cooling pond and low areas adjacent to plant. Plant stopped burning coal in 1970. Windshield survey confirmed about 30% of site paved, only remnants of buildings present. Mounded soil noted in southwestern portion of site. Possible wetland noted in center of grassy area.	PPSP, 1982a; Maryland MERLIN Online	No	Potentially recoverable	Only CCBs and soil used. Minimal redevelopment (site is partially paved, partially vegetated)
Baltimore City	Westport Site Power Plant 2	Patapsco River, Inner Harbor	0.010	Ash transported by narrow gauge railroad to edge of property and landfilled. Plant stopped burning coal in 1970. Windshield Survey performed on 26 July confirmed approximately 60% of site is paved and a vegetated ravine/wetlands-like area was also observed.	PPSP, 1982a; Maryland MERLIN Online	Yes	Potentially Recoverable	Only CCBs and soil used. Minimal redevelopment (site is partially paved, partially vegetated)
Charles	Morgantown Power Plant Site	Potomac River	0.100	PPSP, 1982a says "small quantities of ash co-disposed with dredge spoils in low areas adjacent to the plant (map is missing). Unable to confirm onsite CCB placement in 2017 power plant contacts.	PPSP, 1982a; Knight, 2017; Maryland MERLIN Online	No	Not Recoverable	CCB fil could not be verified in 2017 contact with plant
Charles	Waldorf Site	Potomac River	8.000		PPSP, 1982a; Maryland MERLIN Online	No	Not Recoverable	Capped, buildings
Charles	Faulkner Fly Ash Storage Site	Potomac River	2.300		MDE, 2010; Wheeler, 2013	No	Potentially recoverable	CCBs only, active site
Dorchester	Vienna Power Plant Site 1	Nanticoke River	0.010	Settling Basin. In addition to PPSP, 1982b, it appears that there were 3 other DNR studies (mammal, food fish, and environmental impact assessment) performed between 1982-1984. No references to legal action, however.	PPSP, 1982a; PPSC, 1982b; Maryland MERLIN Online	No	Not Recoverable	Capped, buildings
Dorchester	Vienna Site Power Plant 2	Nanticoke River	0.100	Unlined, diked disposal area. PPSP, 1982b indicates that several breaches of dike occurred. In addition to PPSP, 1982b, it appears that there were 3 other DNR studies (mammal, food fish, and environmental impact assessment) performed between 1982-1984. No references to legal action, however.	PPSP, 1982a; PPSC, 1982b; Maryland MERLIN Online	Yes	Potentially Recoverable	Capped, vegetated
Garrett	ARI Construction	Aaron Run	0.364		Hooker, 2017		Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.
Garrett	G&S Coal Co.	Left Prong Three Forks Run	0.477		Hooker, Alan, 2017		Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.
Garrett	G&S Coal Co. #1	Jennings Randolph Lake	1.700	Active status indicated by Hooker, 2017, and site appearance on satellite image.	MDE, 2010; Hooker, 2017; Maryland MERLIN Online	No	Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.

County	Site Name	Location (Address and/or description)	Current Owner	Permits, Enforcement Actions, etc.	CCB Source & Type	CCB Quantity	Period Active	Status
Garrett	G&S Coal Co. #2	East end of Pee Wee Road - 1 Mile East of Rt.	G&S Coal Co., Inc.	MDE ID# SM-00-435. Permitted on 9/1/06 to receive maximum of 36,000 tons of CCBs/yr.	Warrior Run FBC fly ash and bed ash	30,894 tons	pre-2009-present	Active
Garrett	G&S Coal Co. #3	Rt. 136 6 miles S of Bloomington.	G&S Coal Co., Inc.	MDE ID# SM-02-441. Permitted on 9/1/06 to receive up to 2,000 tons of CCBs/yr.	Warrior Run FBC fly ash and bed ash	Unknown	Unknown	Capped
Garrett	Kempton Man Shaft	Near the town of Kempton, MD.	Western Pocahontas Properties	See project report PPRP, 2013.	Mount Storm Power Plant (Class F Fly Ash), North Branch Power Plant (FGD), Warrior Run Power Plant (FGD)	78 cubic yards (as grout)	2003	Closed
Garrett	Mettiki Coal Co LLC	293 Table Rock Rd, Oakland, MD 21550 - 3.2 miles S of US 50.	Western Pocahontas Properties	MDE ID# DM-84-101. Permitted on 7/20/98 to receive maximum of 72,000 tons of CCBs/yr. There appears to be at least one paper/presentation. There are also references to trout streams associated with mine reclamation.	North Branch Power Plant (FBC fly ash); Mount Storm Power Plant (FGD material)	11,392 tons fly ash, 2,704,719 tons FGD	pre-2009-present	Active as of 2010, appears active in satellite imagery
Garrett	Moran Coal Co	Old Westernport Road - Site B of Franklin Strip Mine.	Moran Coal Company	MDE ID# CCB-10-001. Permitted 6/1/10 to receive a maximum of 180,000 tons of CCBs/yr.	Verso Power Plant	1,155,586 tons	2009 - Present	Active
Garrett	Moran Coal Co. #2	Westernport Rd. - 1.5 miles west of Westernport.	Moran Coal Company	MDE ID# SM-04-445. Permitted on 2/10/07 to receive up to 2,400 tons of CCBs/yr.	Warrior Run FBC fly ash and bed ash	3,000 tons	2007-2010	Capped, vegetated
Garrett	Savage Mt Minerals	Michael Road via Bartlett Run Rd - 1.7 miles west of Barton.	MERLIN indicates Russel, Donald, Sr. Life, Int.	MDE ID# SM-05-448. Permitted 3/22/06 to receive a maximum of 9,000 tons/yr.	Warrior Run FBC fly ash and bed ash	3,900 tons	2006-present	Active
Garrett	Tri-Star Mining	Russell Road via Bartlett Run Rd. - 1.2 miles NW of Barton.	BTC Development	MDE ID# SM-99-434. Permitted on 1/10/03 to receive maximum of 38,400 tons of CCBs/yr.	Warrior Run FBC fly ash and bed ash	107,000 tons	2004-2009	Capped
Garrett	Tri-Star Mining #2	Russell Road via Bartlett Run Rd. - 2.3 miles NW of Barton; 39°32'21.04"N 79°2'44.20"W	BTC Development	MDE ID# SM-03-444. Permitted on 3/25/04 to receive a maximum of 24,000 tons of CCBs/yr.	Warrior Run FBC fly ash and bed ash	Capped	2004-2012	Complete
Garrett	Vindex Energy Corp - Island S.	Sharpless Mine Road via. Mt. Zion Rd - 0.6 miles S of Rt. 135	MERLIN indicates G&S Coal Company, Inc.	MDE ID # SM-02-443. Permitted on 2/16/17 to receive a maximum of 3,200 tons of CCBs/yr.	Warrior Run FBC fly ash and bed ash	3,238 tons	2007-2014	Capped, vegetated

County	Site Name	Nearest Major Water Body	Distance from Nearest Major Water Body (Miles)	Notes	References	Location Within Floodplain	Recoverability	Recoverability Rationale
Garrett	G&S Coal Co. #2	Jennings Randolph Lake	1.000	Active status indicated by Hooker, 2017, and site appearance on satellite image.	MDE, 2010; Hooker, 2017; Maryland MERLIN Online	No	Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.
Garrett	G&S Coal Co. #3	Jennings Randolph Lake	4.500	Status indicated by Hooker, 2017 and site appearance in satellite imagery.	MDE, 2010; Hooker, 2017; Maryland MERLIN Online	No	Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.
Garrett	Kempton Man Shaft	North Branch of the Potomac River	0.300	PPRP CCB beneficial use project. CCBs used to create a grout that was injected to form a curtain surrounding a vertical shaft with the goal of preventing shallow ground water from seeping into the mine pool.	PPRP, 2013	Unknown	Not Recoverable	CCBs were injected as a grout.
Garrett	Mettiki Coal Co LLC	NB Potomac River	2.300	Period active & CCB quantity from Hooker, 2017 and site appearance in satellite imagery.	MDE, 2010; Ashby, 2008; Hooker, 2017; Maryland MERLIN online	No	Not Recoverable	Combined fly ash and FGD
Garrett	Moran Coal Co	Georges Creek	0.900	Hooker, 2017 indicates site is still active. Review of historic satellite photos indicates movement of active area gradually south and east. Portions may have been capped recently. In a meeting on 21 July 2017, Paul Petzrick indicated that the material being placed here likely has high unburned carbon content (black color). Would need to be tested for suitability for use as cement kiln feedstock.	MDE, 2010; Hooker, 2017; Maryland MERLIN Online	No	Potentially Recoverable	Site receives CCBs only (from the Verso power plant), active site
Garrett	Moran Coal Co. #2	Georges Creek	0.900	Aerial images available dating back to 2005. Hooker, 2017 indicates CCB filling at the site was complete by the end of 2010.	MDE, 2010; Hooker, 2017 Maryland MERLIN Online	No	Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.
Garrett	Savage Mt Minerals	Georges Creek	1.800	Historic aerial images available to 1995. Changes in areas of site that are active are discernable. Hooker, 2017 indicates site is active but also indicates no CCB placements at the site since 2010. Review of historical imagery indicates that site was vegetated between 2011 and 2013.	MDE, 2010; Hooker, 2017	No	Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.
Garrett	Tri-Star Mining	Georges Creek	2.000	Period active information comes from Hooker, 2017. This location appears to be the one where there was a highwall collapse in 2007. Satellite image indicates there is still some kind of activity at site to the west (may be an adjacent mine permitted separately).	MDE, 2010; Cumberland Times, 2010; Maryland MERLIN Online	No	Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.
Garrett	Tri-Star Mining #2	Georges Creek	1.600	Period active information comes from Hooker, 2017, Personal Communication.	MDE, 2010; Hooker, Alan, 2017; Maryland MERLIN Online	No	Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.
Garrett	Vindex Energy Corp - Island S.	Jennings Randolph Lake	2.700	Status indicated by Hooker, 2017.	MDE, 2010; MDE, 2008-2017; Hooker, 2017; Maryland MERLIN Online	No	Not Recoverable	Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of CCBs impractical.



County	Site Name	Location (Address and/or description)	Current Owner	Permits, Enforcement Actions, etc.	CCB Source & Type	CCB Quantity	Period Active	Status
Garrett	Winding Ridge	Near Friendsville, MD	Ben Frazee	See project report PPRP, 2000.	Morgantown Energy Associates (FBC), Plant, Mount Storm Power Plant (Class F Fly Ash and FGD)	5,000 tons	1996	Closed
Harford	Joppa Sand and Gravel Site	East bank of Little Gunpowder Falls, just north of Rumsey Island.	State of MD	During the 1980s there were a series of lawsuits between the sand and gravel mine owner and State of Maryland over ownership of the site. These were resolved in 1987, no mention of CCBs as part of the lawsuit however.	Wagner Power Plant, fly ash	Unknown - 40-acre site	1980s	Capped (vegetated)
Montgomery	Dickerson Power Plant Site	21200 Martinsburg Rd., Dickerson, MD 20842.	Potomac Electric Power Co. (NRG)	Multiple for power plant, unable to locate any specific to onsite CCB storage.	Dickerson Plant (Class F Fly Ash, Bottom Ash)	Unknown	1959-1973	Unknown (see notes)
Montgomery	Westland Fly Ash Storage Site	20831 Martinsburg Road, Dickerson, MD 20842.	NRG	Consent decree issued in 2013 settling lawsuits from state and environmental groups.	Dickerson power plant; fly ash and bottom ash	3.5 million cubic yards	1981-Present	Active
Prince Georges	Blue Plains Site	East of 295 near Oxen Run.	Two undeveloped parcels are located in PG County and are owned by United States of America.	None locate for former landfill. Multiple exist for Blue Plains Wastewater Treatment Plant.	Benning Road Power Plant, Buzzard Point Power Plant; fly ash	Unknown - 100-acre site	1950s	Mixed waste landfill, capped (portions vegetated, portions with buildings)
Prince Georges	Brandywine Fly Ash Storage Site	11700 North Keys Road, Brandywine, MD 20613.	NRG	Lawsuit filed by MDE in 2010. Included Faulkner and Westland in consent decree issued in 2013.	Chalk Point Plant, Morgantown Plant; Class F fly ash and bottom ash	7 million cubic yards	1970-Present	Active
Prince Georges	Chalk Point Power Plant Site 1	Northwest of Chalk Point power plant.	Mirant Mid-Atlantic, LLC (NRG)	Multiple related to power plant, unable to find any associated with CCB fill.	Chalk Point Plant, Class F fly ash	Unknown	1964-1970	Appears to be vegetated
Prince Georges	Chalk Point Power Plant Site 2	West of Chalk Point power plant.	Potomac Electric Power Co., (NRG)	Multiple related to power plant, unable to find any associated with CCB fill.	Chalk Point Plant, Class F fly ash	Unknown	1964-1970	Appears to be vegetated, possible transmission line or pipeline right of way.
Prince Georges	Dyson Road Site	Triangle formed by Dyson Rd., Rt. 301., and Missouri Ave.	Marlboro Tobacco Market Inc. and Dyson Road LLC	None located.	Chalk Point Plant, Morgantown Plant; Fly ash; some bottom ash	Unknown - 3-acre site	Early 1970s	Capped (mostly vegetated, one small building)
Prince Georges	Kenilworth Avenue Site	Southeast of intersection of Kennelworth Ave. and I-495.	Developed; multiple owners	None located.	Benning Road Power Plant, Buzzard Point Power Plant; fly ash, some bottom ash	Unknown - 50-acre site	1950s	Mixed waste landfill, capped with buildings
Prince Georges	Piscataway Site 1	South side of Piscataway Dr.	United States of America and Piscataway Hills Citizens Assoc.	None located.	Benning Road Power Plant, Buzzard Point Power Plant; fly ash, some bottom ash	Unknown - 2-acre site	Early 1970s	Vegetated - open field (uncertain if capped)
Prince Georges	Piscataway Site 2	South side of Piscataway Dr.	PARDO MARIANITA A ETAL	None located.	Benning Road Power Plant, Buzzard Point Power Plant; fly ash, some bottom ash	Unknown - 2-acre site	Early 1970s	Vegetated - open field (uncertain if capped)

County	Site Name	Nearest Major Water Body	Distance from Nearest Major Water Body (Miles)	Notes	References	Location Within Floodplain	Recoverability	Recoverability Rationale
Garrett	Winding Ridge	Bear Creek	0.380	PPRP CCB beneficial use project. CCBs used to create a grout that was injected into a small, abandoned underground mine. The goal was to coat mine pavement and entomb pyrite-containing debris to prevent contact between pyrite, water, and oxygen to reduce or prevent the formation of acid mine drainage.	PPRP, 2000	Unknown	Not Recoverable	CCBs were injected as a grout.
Harford	Joppa Sand and Gravel Site	Chesapeake Bay	0.100	PSP, 1982a indicates CCBs were combined with construction debris and oyster shells. Open Jurist article on lawsuits indicates there was filling of wetlands, but does not specify if CCBs were used. 2017 site visit confirmed majority of site remains vegetated. Recreational use may be occurring on portions of the site.	PPSP, 1982a; Open Jurist. 819 F. 2d 1138 – Joppa Sand Gravel Corporation v. State of Maryland R C; Maryland MERLIN Online	No	Potentially Recoverable	CCBs only, capped, vegetated only
Montgomery	Dickerson Power Plant Site	Potomac River	0.010	On-site CCB storage/disposal. Presence of on-site disposal not confirmed in 2017 communication with power plant.	PPSP, 1982a; Heimlicher, Peter, 2017; Maryland MERLIN Online	No	Not Recoverable	CCB fil could not be verified in 2017 contact with plant
Montgomery	Westland Fly Ash Storage Site	Potomac River	0.500		PPSP, 1982a; MDE, 2010; Wheeler 2013	No	Potentially recoverable	CCBs only, active site
Prince Georges	Blue Plains Site	Potomac River	0.150	Most of this site is located within DC. DC portion is partly developed with parking lots and buildings. Remainder of site appears to be vegetated. There is a Blue Plains Wastewater Treatment Plant in the area, difficult to tell if it extends onto the old landfill area.	PPSP, 1982a; Maryland MERLIN Online	No	Not Recoverable	Mixed Waste
Prince Georges	Brandywine Fly Ash Storage Site	Patuxent River	5.500	Ash overflow caused by Hurricane Irene in 2011 (no legal action).	MDE, 2010; Wheeler, 2010; Wheeler, 2013	No	Potentially Recoverable	CCBs only, active site
Prince Georges	Chalk Point Power Plant Site 1	Patuxent River	0.200	This location is slightly north and west of the Chalk Point Power Plant and appears to be along a cleared area (possibly a transmission line right-of-way). Nitz, 2017 was unable to confirm presence of CCB fill areas.	PPSP, 1982a; Nitz, 2017; Maryland MERLIN Online	No	Not Recoverable	CCB fil could not be verified in 2017 contact with plant
Prince Georges	Chalk Point Power Plant Site 2	Patuxent River	0.500	This location is slightly north and west of the Chalk Point Power Plant. Nitz, 2017 was unable to confirm presence of CCB fill areas.	PPSP, 1982a; Maryland MERLIN Online	No	Not Recoverable	CCB fil could not be verified in 2017 contact with plant
Prince Georges	Dyson Road Site	Patuxent River	8.000	PPSP, 1982a indicates that this was a relatively small filling project. No information available on cap.	PPSP, 1982a; Maryland MERLIN Online	No	Potentially Recoverable	CCBs only, capped, vegetated only
Prince Georges	Kenilworth Avenue Site	Anacostia River	0.800		PPSP, 1982a; Maryland MERLIN Online	Yes	Not Recoverable	Mixed Waste
Prince Georges	Piscataway Site 1	Potomac River	0.010	PPSP, 1982a report indicates that this was a relatively small filling project.	PPSP, 1982a; Maryland MERLIN Online	Yes	Potentially Recoverable	CCBs only, capped, vegetated only
Prince Georges	Piscataway Site 2	Potomac River	0.100	PPSP, 1982a report indicates that this was a relatively small filling project.	PPSP, 1982a; Maryland MERLIN Online	Yes	Potentially Recoverable	CCBs only, capped, vegetated only

County	Site Name	Location (Address and/or description)	Current Owner	Permits, Enforcement Actions, etc.	CCB Source & Type	CCB Quantity	Period Active	Status
Prince Georges	Piscataway Site 3	South side of Piscataway Dr.	MD National Capital Park and Planning Co	None located.	Benning Road Power Plant, Buzzard Point Power Plant; fly ash, some bottom ash	Unknown - 10-acre site	Early 1970s	Vegetated - open field (uncertain if capped)
Prince Georges	Ritchie Road Site	Intersection of Ritchie Rd. and Forest Park Dr.	Prince Georges County and four others. EK Ritchie LLC, Alan Bortnick, Norman Spence and Lexington Drive LLP	None located.	Benning Road Power Plant, Buzzard Point Power Plant; fly ash, some bottom ash	Unknown - 1-acre site	1967-1968	Capped (portions vegetated, portions parking lot, some buildings)
Prince Georges	Woods Corner Site	Northeast corner of I-95 and Branch Avenue.	Developed; multiple owners	None located.	Benning Road Power Plant, Buzzard Point Power Plant; mostly fly ash	Unknown - 120-acre site	Early 1960s	Mixed waste landfill, capped (buildings)
Queen Anne	US Route 301/MD 213 Overpass	US Route 301/MD 213 Overpass, Centerville, MD.	Maryland State Highway Administration	Project was completed in cooperation with the Md State Highway Administration. Monitoring performed in 2003 and in 2014.	Indian River Plant (Class F fly ash)	60,000 tons	1993-1994	Capped - Highway Embankment
Washington	Hagerstown Power Plant Site	Corner of Eastern Blvd. and Mt. Aetna Rd, along the bank of Antietam Creek.	Hagerstown Fiber & Light	None located.	Hagerstown Municipal Power Plant; fly ash, some bottom ash	Unknown	1950-1971	Capped (portions vegetated, one building)
Wicomico	Newland Park Sanitary Landfill	7151 Brick Kiln Road, Salisbury, MD.	Wicomico County department	MDE Landfill Permit #2015-WMF-0263	Indian River Plant (Class F fly ash)	~200,000 cubic yards	Placement ended before 2010	Mixed waste landfill; Portions active, portions containing fly ash capped

County	Site Name	Nearest Major Water Body	Distance from Nearest Major Water Body (Miles)	Notes	References	Location Within Floodplain	Recoverability	Recoverability Rationale
Prince Georges	Piscataway Site 3	Potomac River	0.400	PPSP, 1982a report indicates that this was a relatively small filling project.	PPSP, 1982a; Maryland MERLIN Online	Yes	Potentially Recoverable	CCBs only, capped, vegetated only
Prince Georges	Ritchie Road Site	Potomac River	8.000	PPSP, 1982a report indicates that this was a relatively small filling project.	PPSP, 1982a; Maryland MERLIN Online	Yes	Not Recoverable	Capped, buildings
Prince Georges	Woods Corner Site	Potomac River	5.000	PSP, 1982a lists this site as one of the larger-area fill sites active in the 1960s.	PPSP, 1982a; Maryland MERLIN Online	No	Not Recoverable	Mixed Waste
Queen Anne	US Route 301/MD 213 Overpass	Wye River	1.700	Ground water studies have been performed in 2003 and 2014, but no ongoing monitoring.	MDE, 2010; PPRP, 2004; PPRP, 2017b	No	Not Recoverable	Capped, public road
Washington	Hagerstown Power Plant Site	Antietam Creek	0.010	PPSP, 1982a indicates that this plant produced a relatively small amount of CCBs and much of its ash went to a landfill in Pennsylvania. Plant stopped burning coal in 1971.	PPSP, 1982a; Maryland MERLIN Online	FEMA 100 Yr. Floodplain Data Not Available	Not Recoverable	Capped, buildings, likely small quantity of CCBs
Wicomico	Newland Park Sanitary Landfill	Wicomico River	2.000	CCBs used as structural fill under landfill liner. Ground water monitoring required for landfill.	MDE, 2010; MDE SWP, 2017	No	Not Recoverable	Mixed Waste

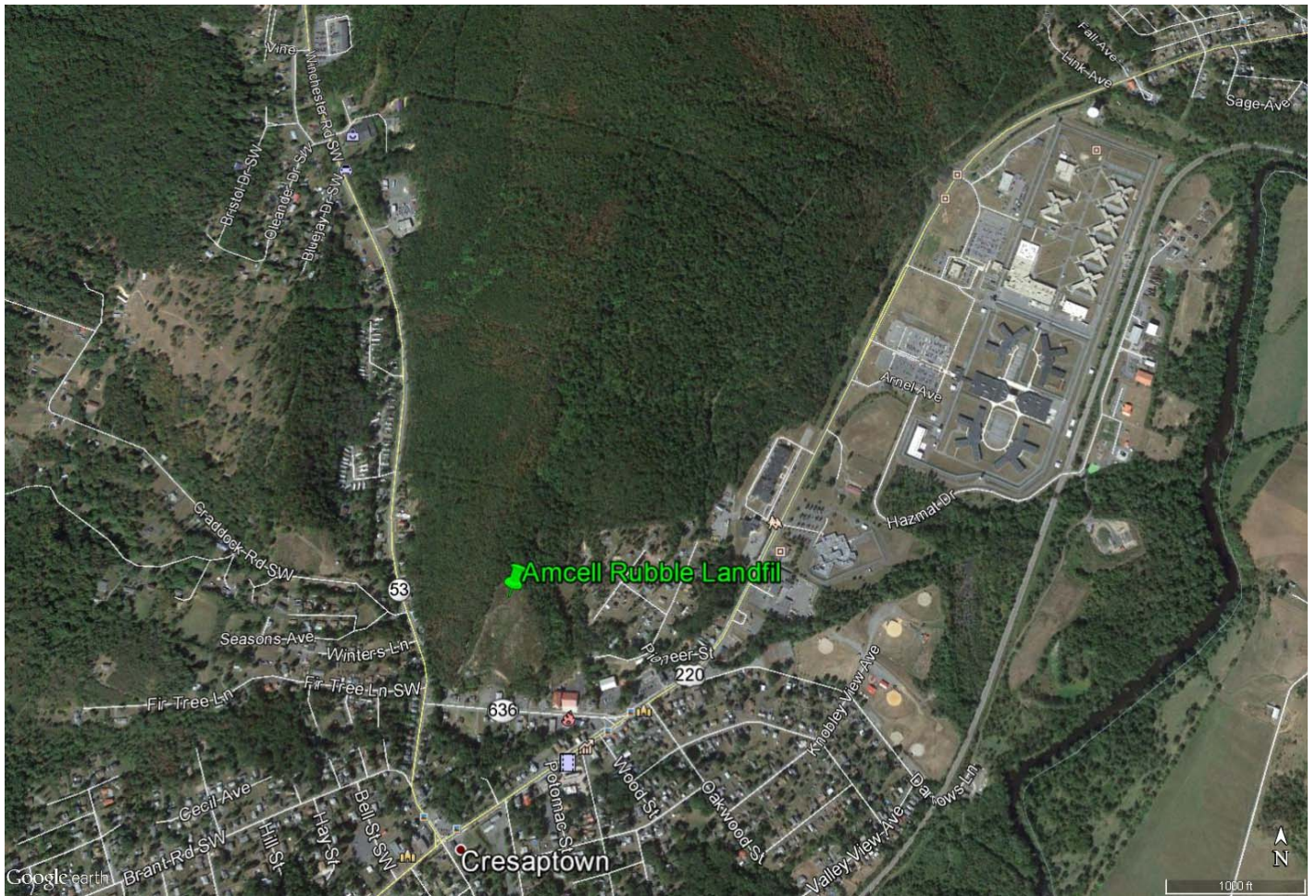
*Appencix B*  
*CCB Site Image Log*



# Allegany County







County: Allegany

Site Name: Amcell Rubble Landfill

Image Date: June 2017

Location/Boundary Source: MDE, 2010

Recoverability: Potentially recoverable because site received only CCBs and while the rubble landfill was constructed on top of part of the CCB fill area, records indicate that the remainder of the CCB fill area has not been developed.

Notes: MDE, 2010 only provided an address for the site (13800 McMullen Hwy, SW). The location marked in this image is based upon appearance of land in this area and proximity to Amcell St.





County: Allegany

Site Name: Cabin Run/Vindex Energy #6

MDE ID#: SM-01-439

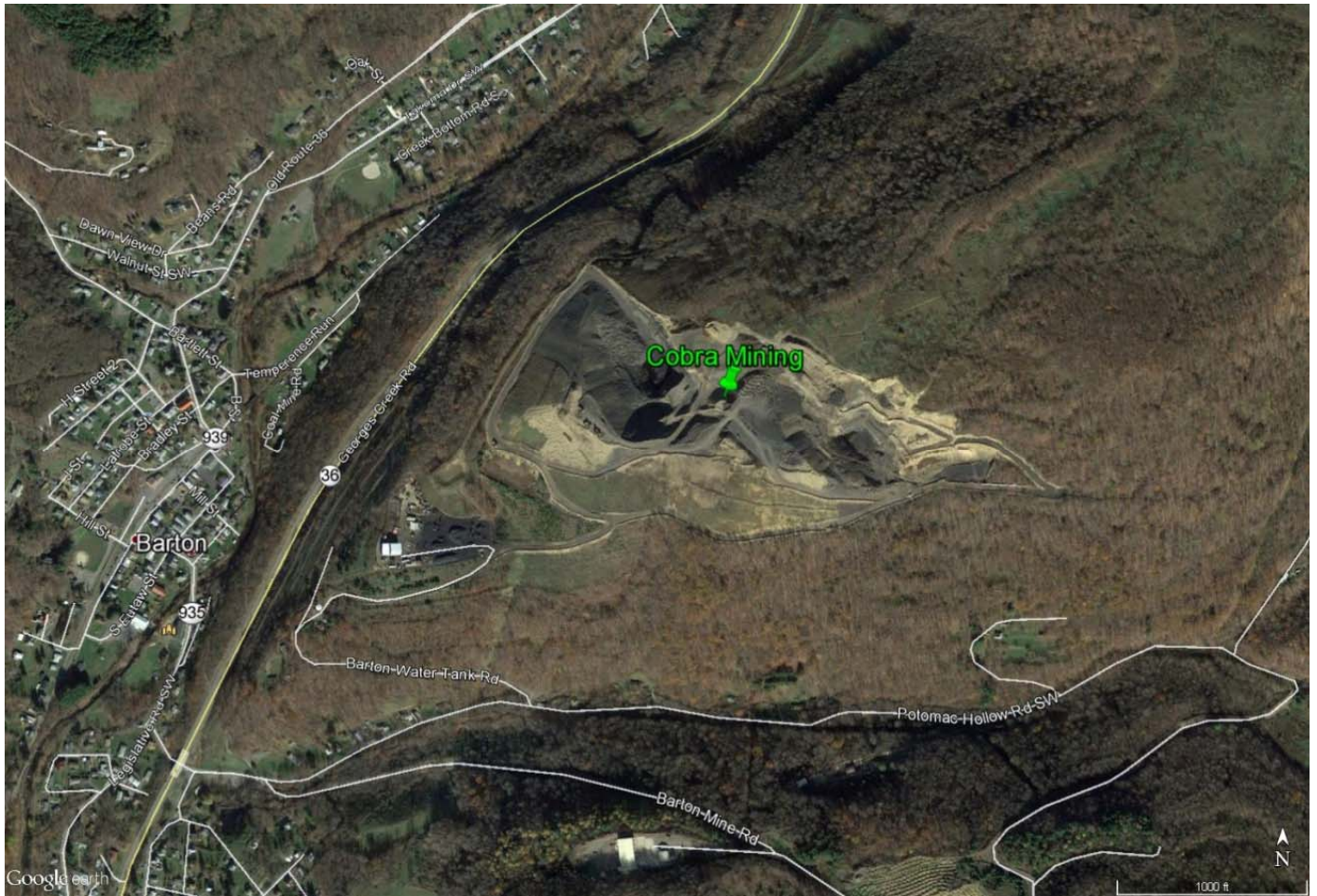
MDE Status as of June 2017: Active

Image Date: November 2016

Location/Boundary Source: MDE, 2010; Hooker, 2017

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: Location verified with MDE shapefile.



County: Allegheny

Site Name: Cobra Mining, Inc.

MDE ID#: SM-01-437

MDE Status as of June 2017: Active

Image Date: November 2016

Location/Boundary Source: MDE, 2010; Hooker, 2017

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: Location verified with MDE shapefile.





County: Allegany

Site Name: Cumberland Site 1

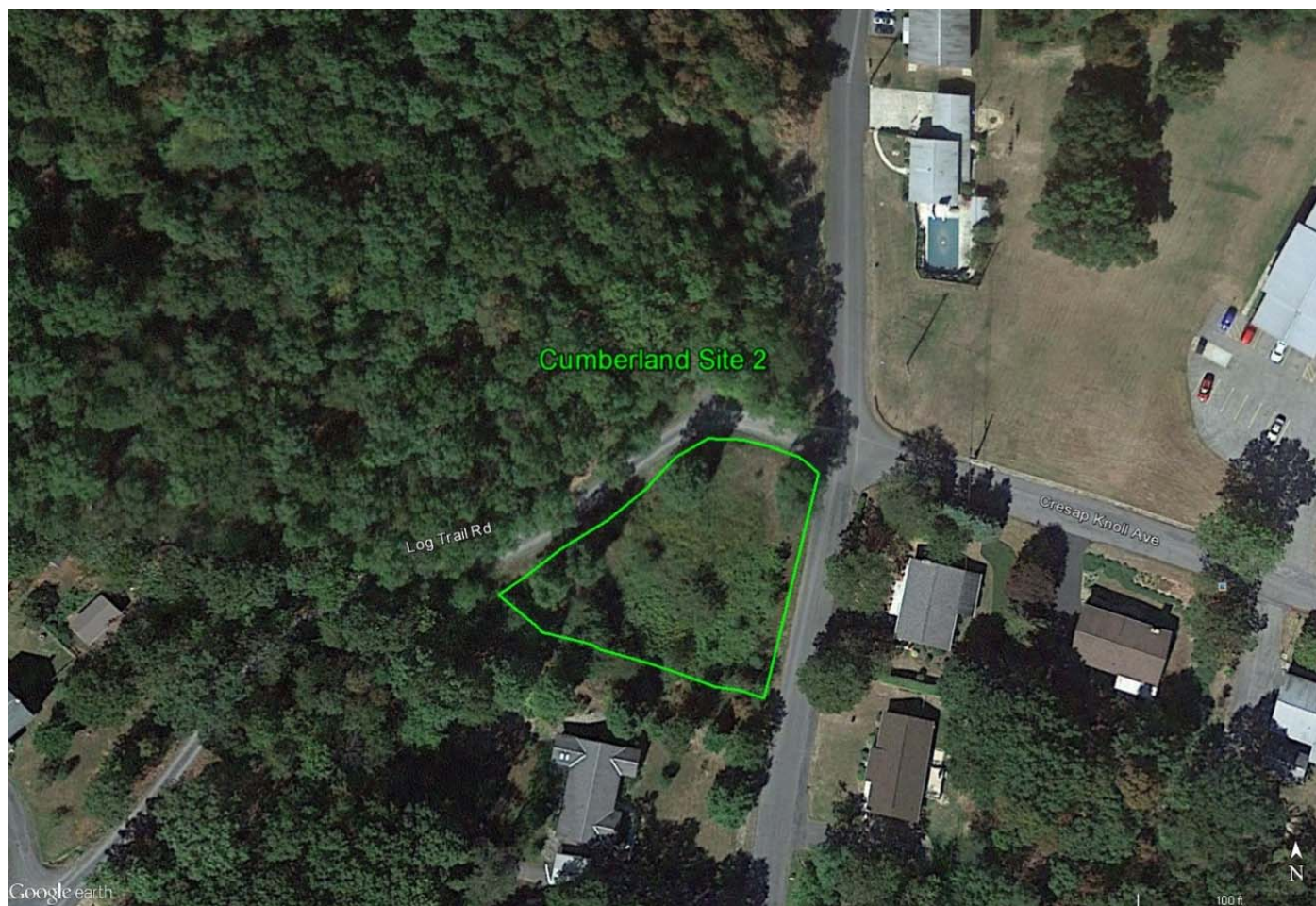
Image Date: September 2016

Location/Boundary Source: PPRP, 1982

Recoverability: Potentially recoverable because records indicate only CCBs and soil were placed at the site and site appears to be undeveloped.

Notes: Location is approximate.





County: Allegany

Site Name: Cumberland Site 2

Image Date: September 2016

Location/Boundary Source: PPRP, 1982

Recoverability: Potentially recoverable because records indicate only CCBs and soil were placed at the site and site appears to be undeveloped.

Notes: Location is approximate. It appears that Log Trail Road may have been constructed over part of the fill site.



County: Allegany

Site Name: Cumberland Site 3

Image Date: September 2016

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because CCBs were placed along with other wastes.

Notes: Location is approximate.





County: Allegheny

Site Name: G&S Coal Co. #4

MDE ID#: SM-01-440

MDE Status as of June 2017: Active

Image Date: November 2016

Location/Boundary Source: MDE, 2010; Hooker, 2017

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: Location verified with MDE shapefile.



County: Allegheny

Site Name: Mountain View Landfill

Image Date: September 2016

Location/Boundary Source: MDE, 2010

Recoverability: Not recoverable because CCBs were placed along with other wastes.

Notes: None





County: Allegany

Site Name: Ritchie Trucking and Excavating

MDE ID#: SM-08-40

MDE Status as of June 2017: Capped

Image Date: November 2016

Location/Boundary Source: MDE, 2010; Hooker, 2017,

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: Location verified with MDE shapefile.



County: Allegheny

Site Name: Tri-Star Mining #3

MDE ID#: SM-91-419

MDE Status as of June 2017: Complete

Image Date: November 2016

Location/Boundary Source: MDE, 2010; Hooker, 2017

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: Location verified with MDE shapefile.





County: Allegheny

Site Name: Tri-Star Mining #4

MDE ID#: SM-84-264

MDE Status as of June 2017: Complete

Image Date: November 2016

Location/Boundary Source: MDE, 2010; Hooker, 2017

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: Location verified with MDE shapefile.



County: Allegany

Site Name: Vindex Energy Corp - Carlos

MDE ID#: SM-84-393

MDE Status as of June 2017: Active

Image Date: November 2016

Location/Boundary Source: MDE, 2010; Hooker, 2017

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: Location verified with MDE shapefile.





County: Allegany

Site Name: Vindex Energy Corp. #4

MDE ID#: SM-96-427

MDE Status as of June 2017: Complete

Image Date: November 2016

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Location/Boundary Source: MDE, 2010, Hooker, 2017

Notes: Location verified with MDE shapefile.



County: Allegheny

Site Name: Vindex Corp. #5

MDE ID#: SM-99-432

MDE Status as of June 2017: Active

Image Date: November 2016

Location/Boundary Source: MDE, 2010; Hooker, 2017

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: None





County: Allegany

Site Name: Walker Brothers

MDE ID#: SM-07-453

MDE Status as of June 2017: Active

Image Date: November 2016

Location/Boundary Source: Hooker, 2017

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: Location verified with MDE shapefile.





Anne Arundel County





County: Anne Arundel

Site Name: BBSS

Image Date: May 2015

Location/Boundary Source: MDE, 2010; PPRP, 2007

Recoverability: Not recoverable because site is capped and redeveloped with buildings.

Notes: Site has been capped and redeveloped, with the exception of one small portion referred to as the Turner Pit-West.





County: Anne Arundel

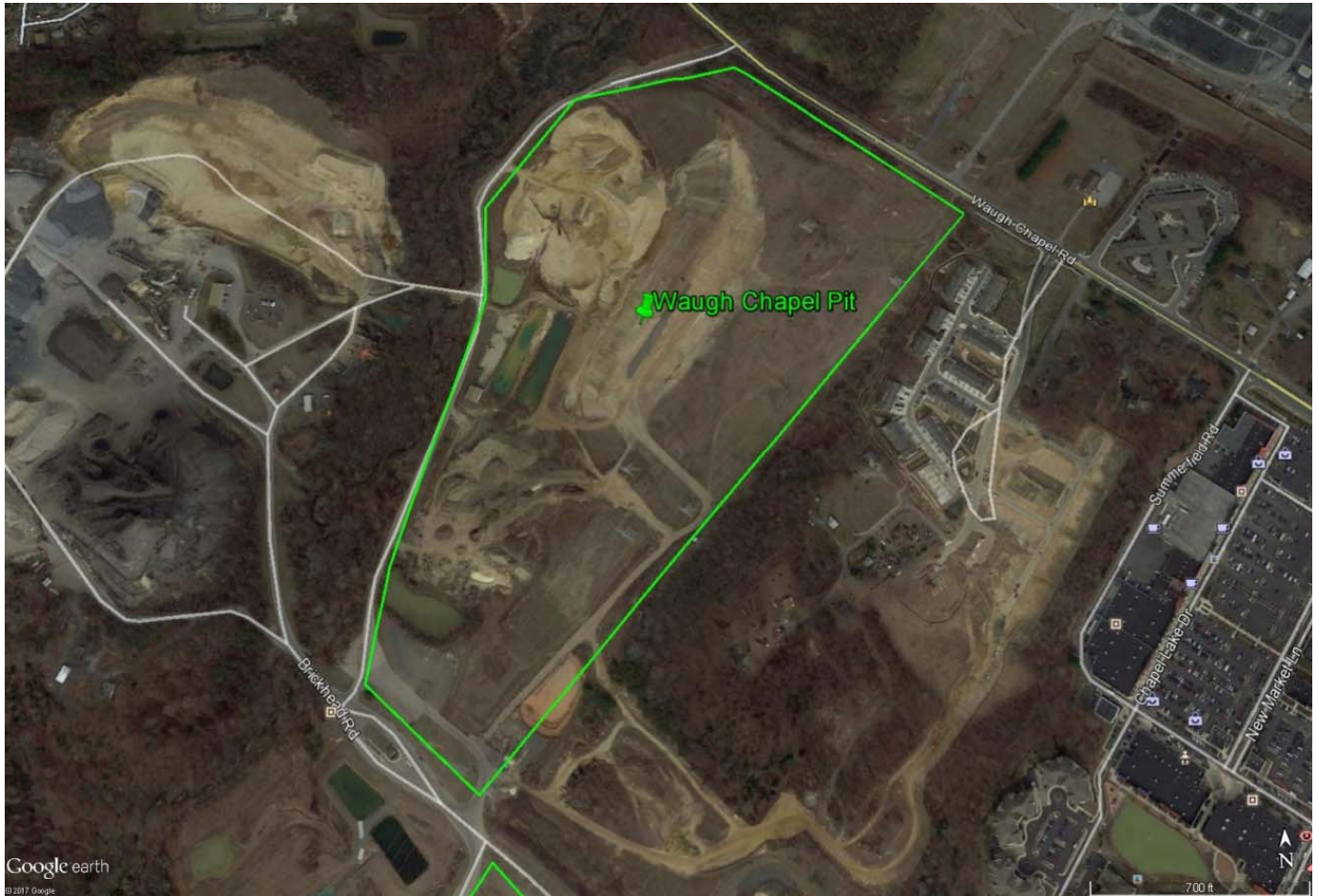
Site Name: Turner Pit (West)

Image Date: May 2015

Location/Boundary Source: MDE, 2010; PPRP, 2007

Recoverability: Potentially recoverable because site received only CCBs and this portion of the site appears to not to have been redeveloped.

Notes: The Turner Pit (West) is a small portion of the BBSS site. The majority of the Turner Pit has been capped and is covered by a shopping center and parking lots, but satellite imagery indicates that the western portion of the Turner Pit is not redeveloped or vegetated. Windshield Survey Performed 7/25/17: Site viewed from eastern boundary only (all other roads are private, owned by Reliable Construction). Triangular pond on southwestern part of site is still present. Earth moving activity observed on main part of site. Material appears to be mounded red-brown soil. No CCBs visible.



County: Anne Arundel

Site Name: Waugh Chapel Pit

Image Date: May 2015

Location/Boundary Source: MDE, 2010; PPRP, 2007

Recoverability: Potentially recoverable because only CCBs were used at this location and imagery indicates that this area has not been redeveloped.

Notes: The Waugh Chapel Pit is one of two pits that were reclaimed as part of the BBSS site. Windshield Survey Performed 7/25/17: Site viewed from north-eastern boundary (along Waugh Chapel Road) only. Road leading west toward the site is private (owned by Reliable Construction and labeled "Waugh Chapel Plant"). Active truck traffic observed entering and leaving by this entrance. View of remainder of site limited by woody vegetation along Waugh Chapel Rd.





County: Anne Arundel

Site Name: Brandon Woods

Image Date: October 2014

Location/Boundary Source: MDE, 2010

Recoverability: Not recoverable because site is capped and redeveloped with buildings.

Notes: Since widening of Solley Rd. was done on the Brandon Woods side, a portion of the road may have been placed over CCBs.



County: Anne Arundel

Site Name: Joy/Boehm Landfill State

Image Date: October 2014

Location/Boundary Source: MDE, 2010

Recoverability: Not recoverable because CCBS were disposed along with other waste materials.

Notes: Location is approximate based on address given in MDE, 2010.





County: Anne Arundel

Site Name: Millersville Landfill

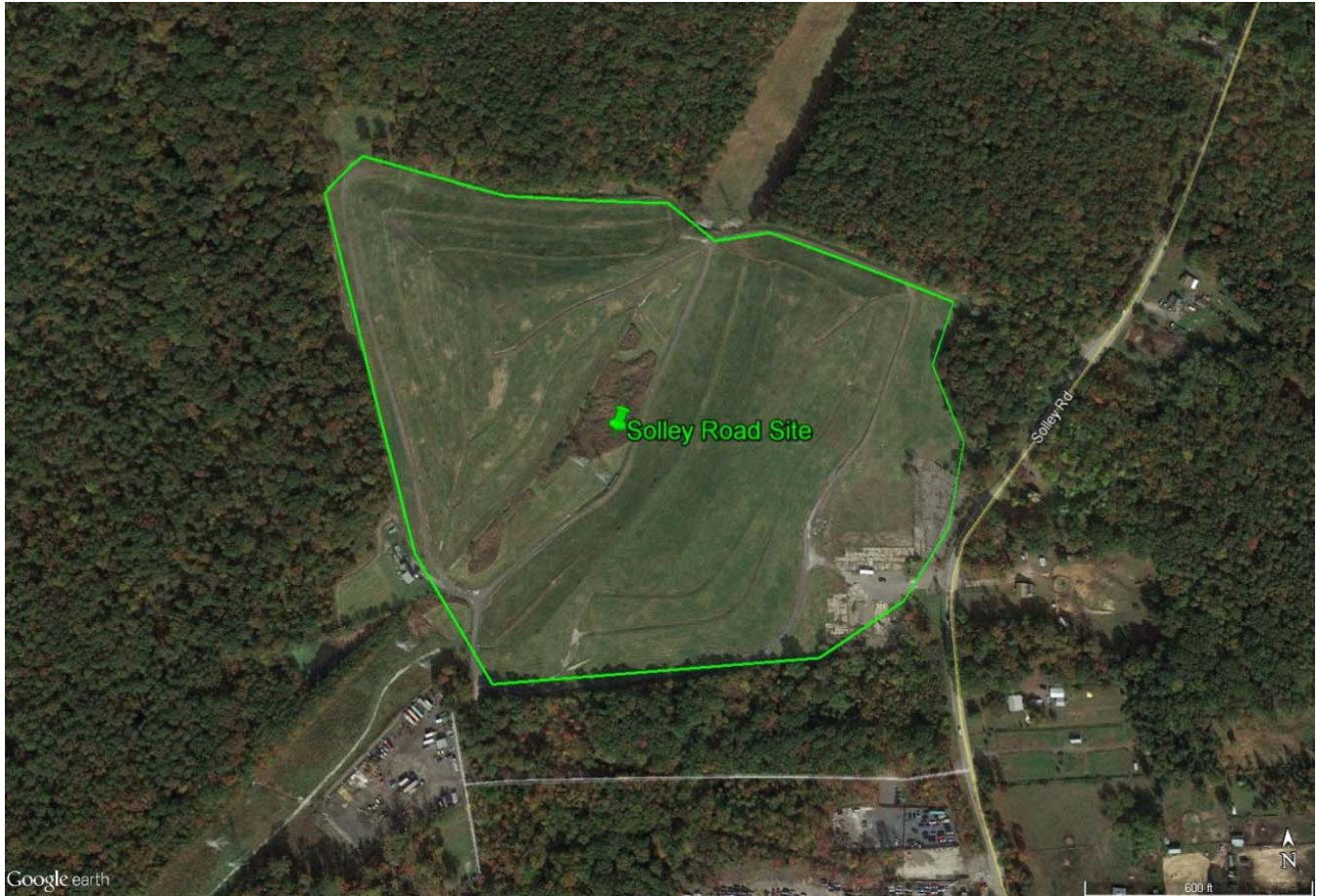
Image Date: May 2015

Location/Boundary Source: MDE, 2010

Recoverability: Not recoverable because CCBs were disposed along with other waste materials.

Notes: Although site is still an active municipal landfill, CCB disposal is no longer occurring and the portion of the site that contained CCBs has been capped.





County: Anne Arundel

Site Name: Solley Road Site

Image Date: October 2014

Location/Boundary Source: PPRP, 1982; EPA, 2016a

Recoverability: Not recoverable because CCBs were disposed along with other waste materials.

Notes: PPRP, 1982 figure may have shifted site location too far north. EPA, 2016a indicates that there was a BFI landfill southwest of the intersection of Solley and Nabbs Creek Roads.



County: Anne Arundel

Site Name: Wagner Power Plant Site 1

Image Date: October 2014

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because Hoyt, 2017 indicates no record of onsite CCB fill areas.

Notes: None





County: Anne Arundel

Site Name: Wagner Power Plant Site 2

Image Date: October 2014

Location/Boundary Source: PPRP, 1982

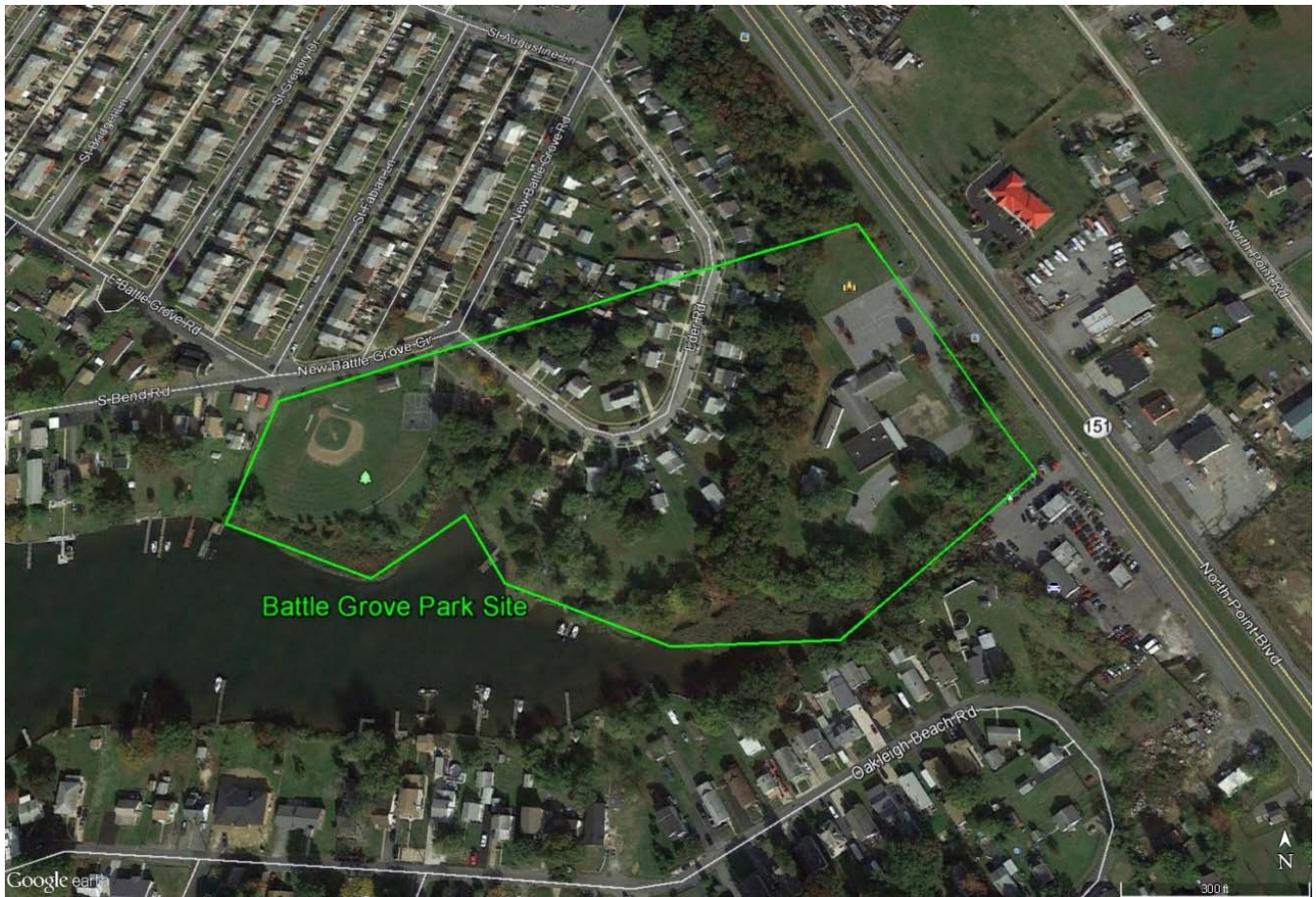
Recoverability: Not recoverable because Hoyt, 2017 indicates no record of onsite CCB fill areas.

Notes: A windshield survey performed on 26 July 2017 confirmed that about 60% of the site is paved, remainder vegetated. Of particular note was a vegetated wetlands-like ravine within this area. Old railroad tracks were also confirmed.



Baltimore County





County: Baltimore

Site Name: Battle Grove Park Site

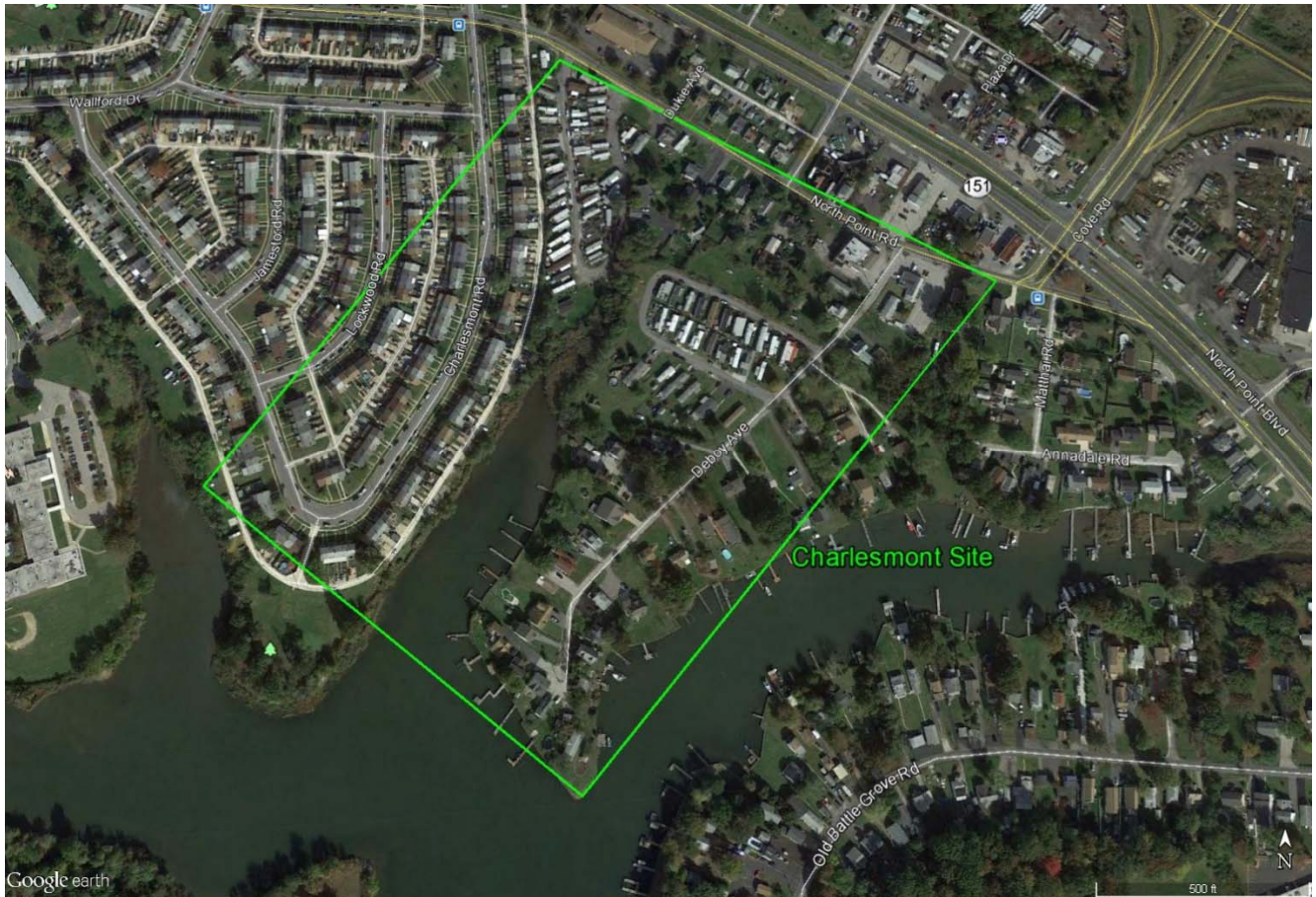
Image Date: October 2014

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because site has been redeveloped with buildings.

Notes: None





County: Baltimore

Site Name: Charlesmont Site

Image Date: October 2014

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because site has been redeveloped with buildings.

Notes: None





County: Baltimore

Site Name: Coffin Point Site

Image Date: October 2014

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because site has been redeveloped with buildings.

Notes: None



County: Baltimore

Site Name: Crane Power Plant Site

Image Date: October 2014

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because Forbes, 2017 indicated no records of onsite CCB fill areas.

Notes: None





County: Baltimore

Site Name: I695 Sparrows Pt. Overpass

Image Date: October 2014

Location/Boundary Source: MDE, 2010; PPRP, 2004; PPRP, 2017a

Recoverability: Not recoverable because fill areas are associated with public roads.

Notes: None



County: Baltimore

Site Name: Norris Farm Site

Image Date: October 2014

Location/Boundary Source: PPRP, 1982

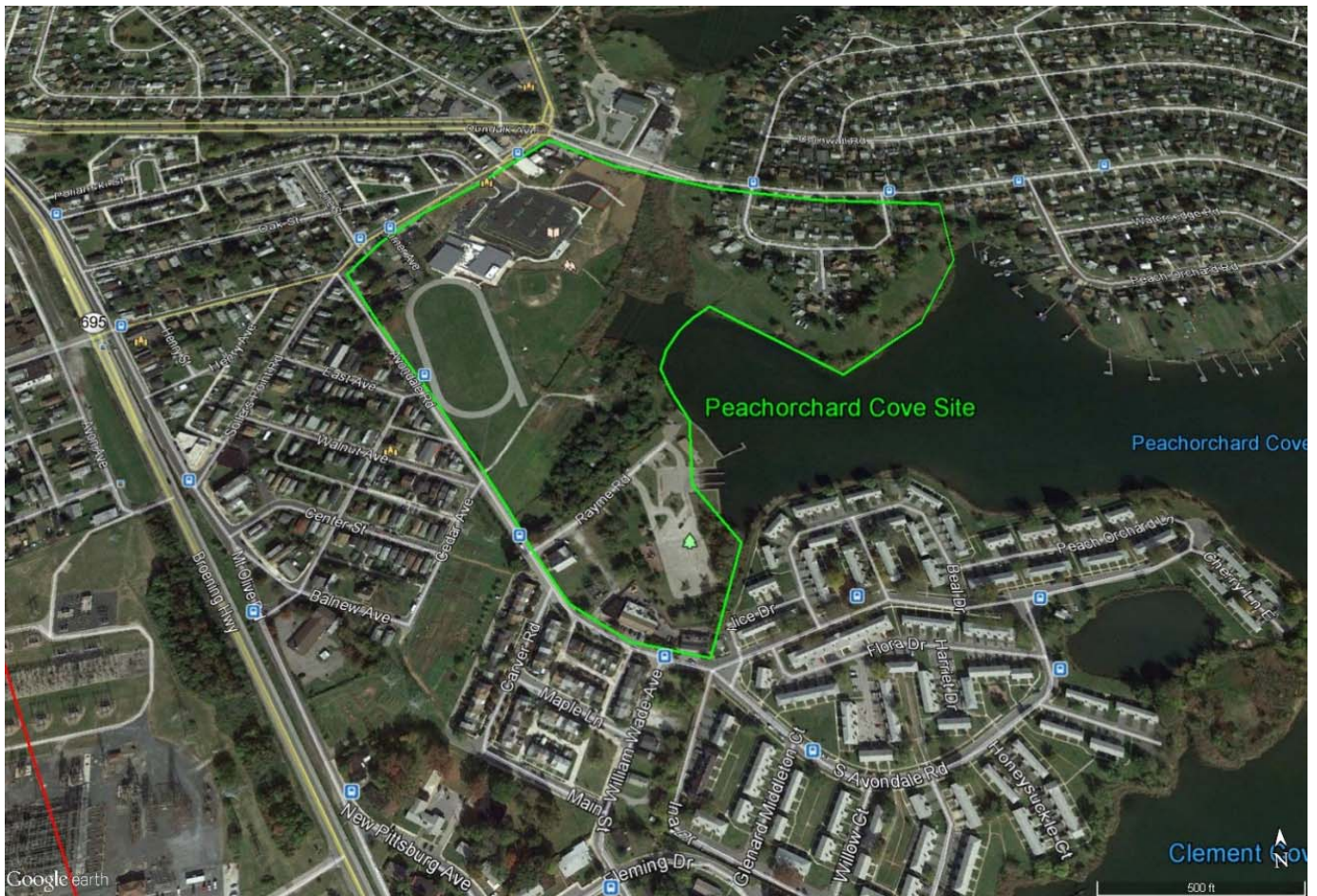
Recoverability: Not recoverable because CCBs were disposed along with other waste materials.

Notes: None









County: Baltimore

Site Name: Peachorchard Cove Site

Image Date: October 2014

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because CCBs were disposed along with other waste materials and portions of site have been redeveloped with buildings

Notes: None



County: Baltimore

Site Name: Riverside Power Plant Site

Image Date: October 2014

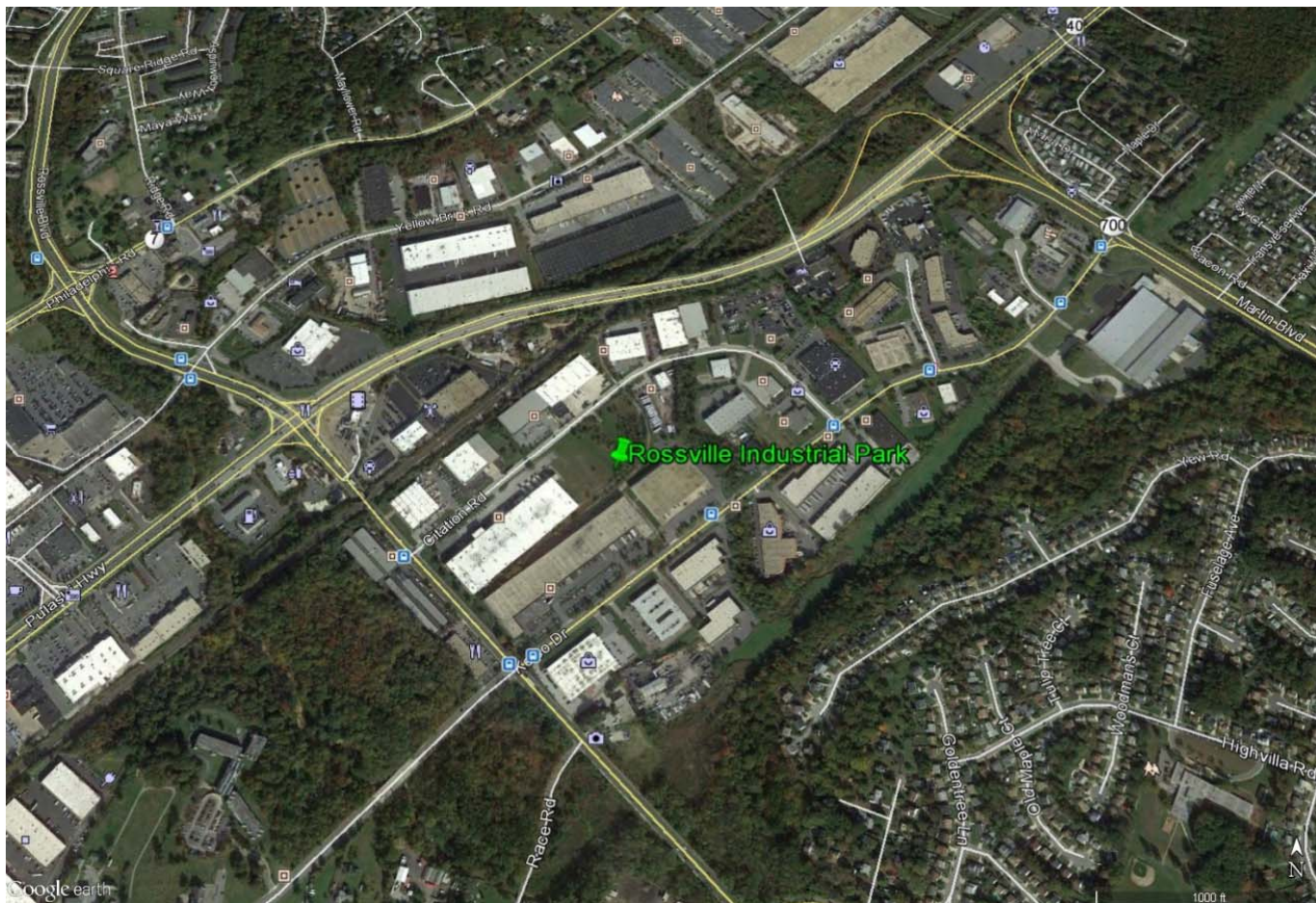
Location/Boundary Source: PPRP, 1982

Recoverability: Potentially recoverable because records indicate only CCBs were placed at the site and site is inactive.

Notes: 1982 report says "some ash disposed of in various portions of plant property". Without knowing exactly which portions those were, it is difficult to determine if there are buildings on top of them.

Windshield Survey Performed on 7/25/17: Presence of buildings, above-ground storage tanks, and paved areas was confirmed. Southern portion of site was not easily visible. Trucks owned by BGE were noted at the site. Area where CCBs had been placed could not be discerned.





County: Baltimore

Site Name: Rossville Industrial Park

Image Date: October 2014

Location/Boundary Source: MDE, 2010

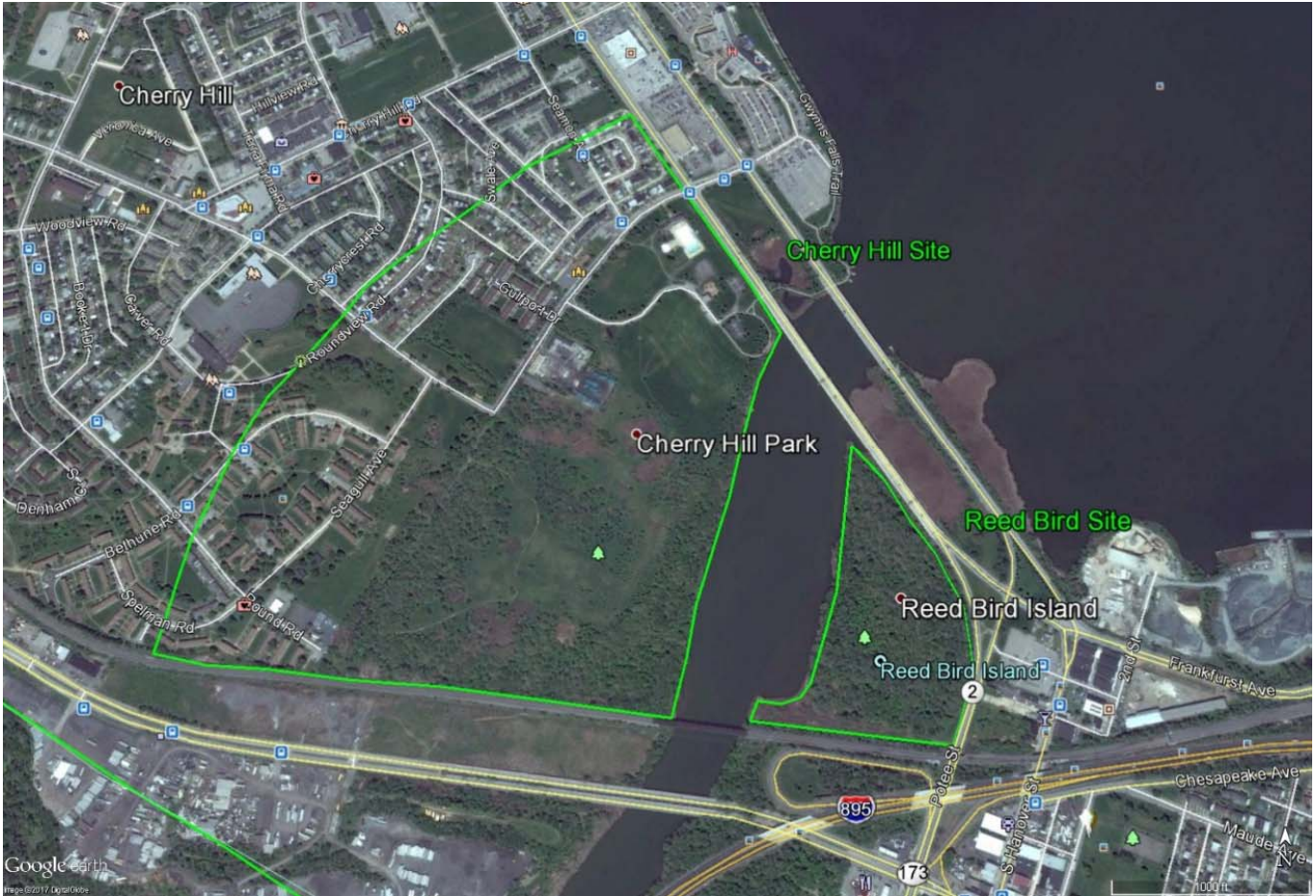
Recoverability: Potentially recoverable because records indicate only CCBs and soil were placed at the site and site appears to be undeveloped.

Notes: CCBs were used to reclaim an onsite clay mine.

Baltimore City







County: Baltimore City

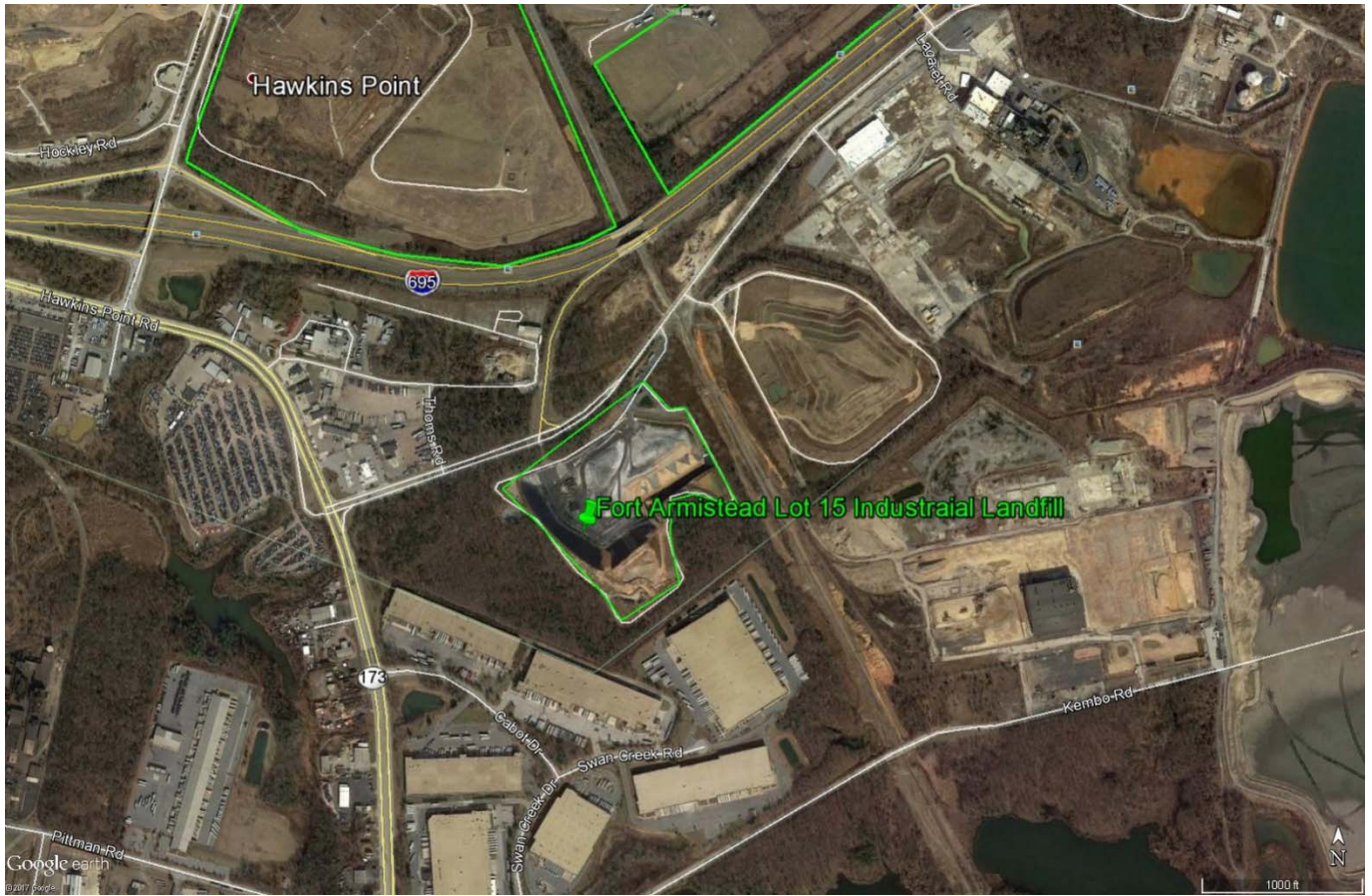
Site Name: Cherry Hill Site

Image Date: May 2015

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because CCBs were disposed along with other waste materials and portions of site have been redeveloped with buildings.

Notes: None



County: Baltimore City

Site Name: Fort Armistead Lot 15 Industrial Landfill

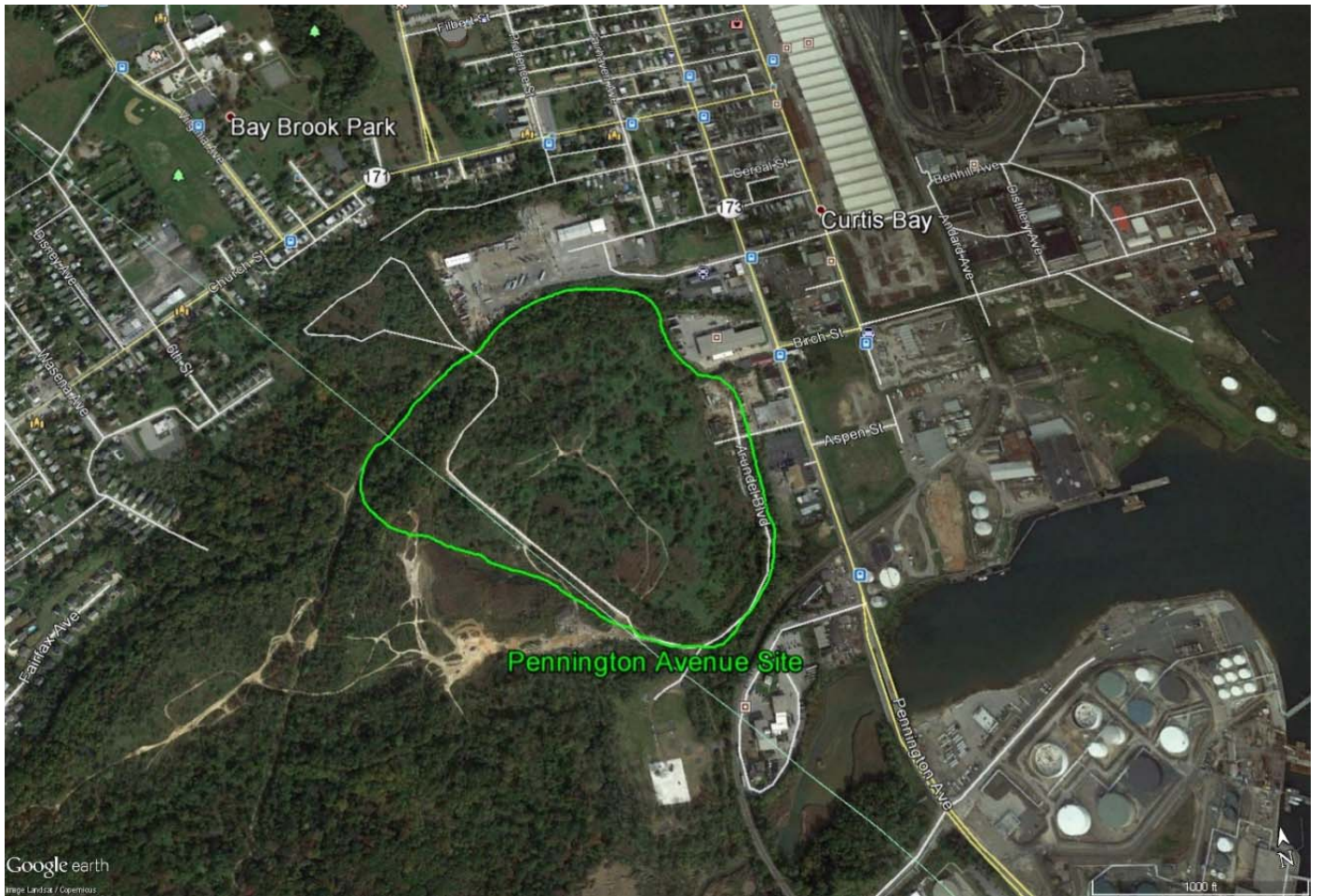
Image Date: August 2017

Location/Boundary Source: MDE WMS, 2017

Recoverability: Potentially recoverable because site contains only CCBs and is currently active.

Notes: None





County: Baltimore City

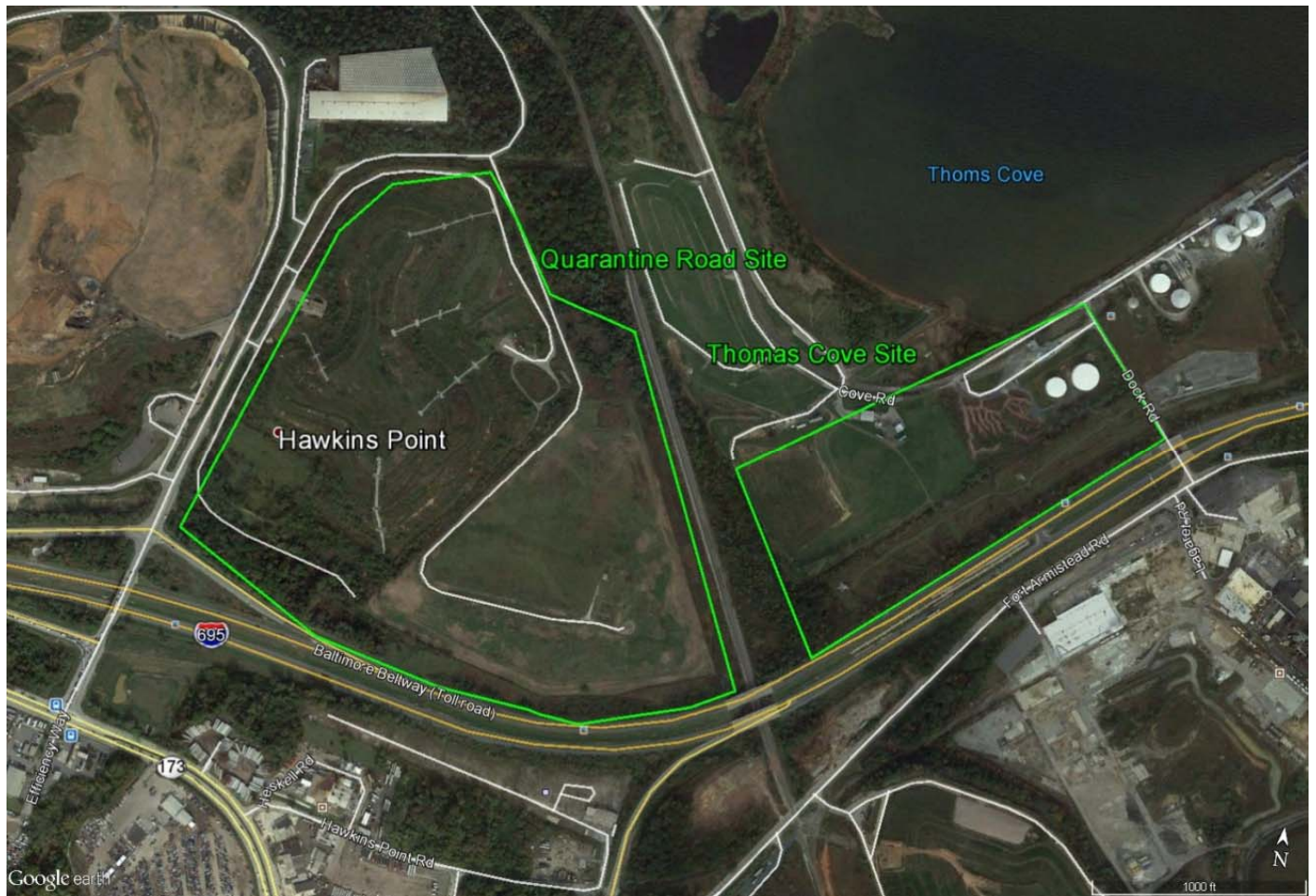
Site Name: Pennington Avenue Site

Image Date: October 2014

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because CCBs were disposed along with other waste materials.

Notes: None.



County: Baltimore City

Site Name: Quarantine Road Site

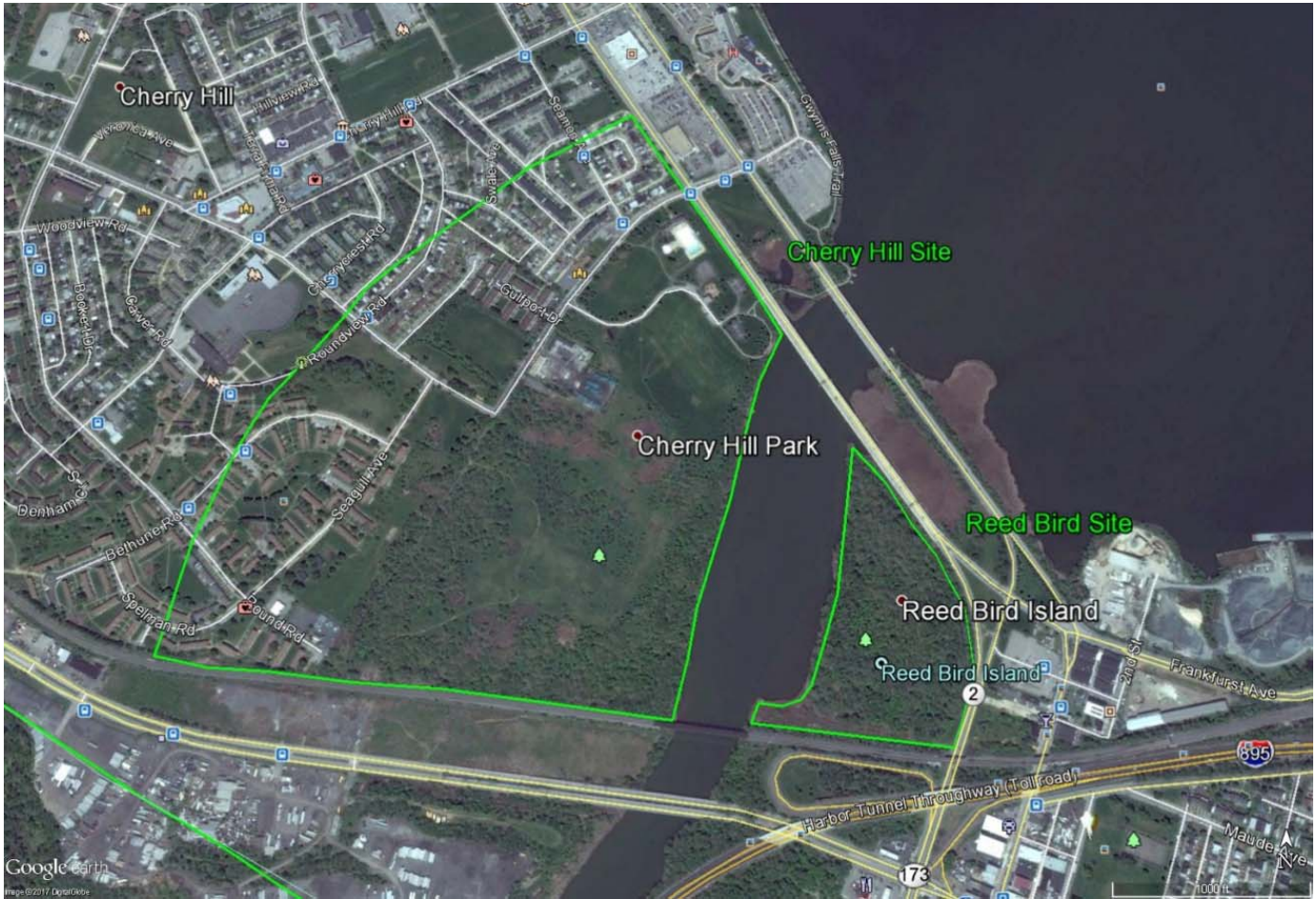
Image Date: October 2014

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because CCBs were disposed along with other waste materials.

Notes: Landfill closed and capped in 1984. Note that there is an active municipal landfill adjacent to this site to the west (6100 Quarantine Road).





County: Baltimore City

Site Name: Reed Bird Site

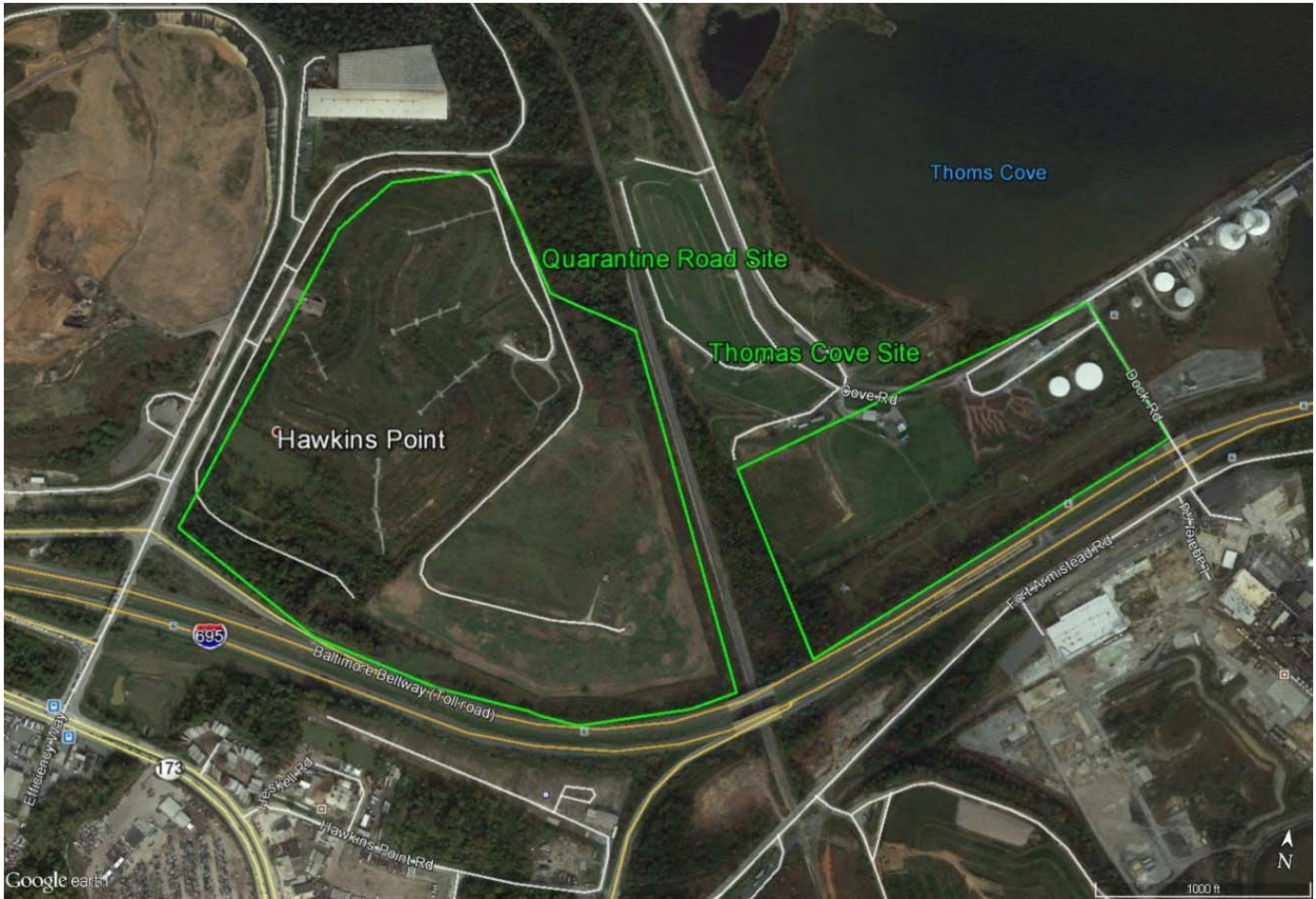
Image Date: May 2015

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because CCBs were disposed along with other waste materials.

Notes: Fact sheet indicates that the site is part of Cherry Hill Park (Cherry Hill Site may have once been considered part of Reed Bird)





County: Baltimore City

Site Name: Thomas Cove Site

Image Date: October 2014

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because CCBs were disposed along with other waste materials.

Notes:

Based on EPA Information, it appears that Hawkins Point Landfill overlaps the Thomas Cove site.



County: Baltimore City

Site Name: Westport Power Plant Site 1

Image Date: May 2015

Location/Boundary Source: PPRP, 1982

Recoverability: Potentially recoverable because site received only CCBs and soil and, while some portions of site are paved, remainder of site is only vegetated.

Notes: Windshield Survey Performed on 7/26/17. Site viewed from Kloman St., which runs along the western site boundary. Onsite observations combined with aerial imagery indicated that about 30% of the site is paved and an abandoned railroad spur is present. Remnants of a brick structure were observed, but no in-use buildings. Remainder of site is vegetated.





County: Baltimore City

Site Name: Westport Power Plant Site 2

Image Date: May 2015

Location/Boundary Source: PPRP, 1982

Recoverability: Potentially recoverable because records indicate that the site has been capped and only soil was placed at the site.

Notes: Windshield Survey Performed on 7/26/17. Site viewed from Kloman St., which runs along the western site boundary. Onsite observations combined with aerial imagery indicated that about 60% of the site is paved and a railroad spur crosses one corner of the site. No further development observed.

# Charles County







County: Charles

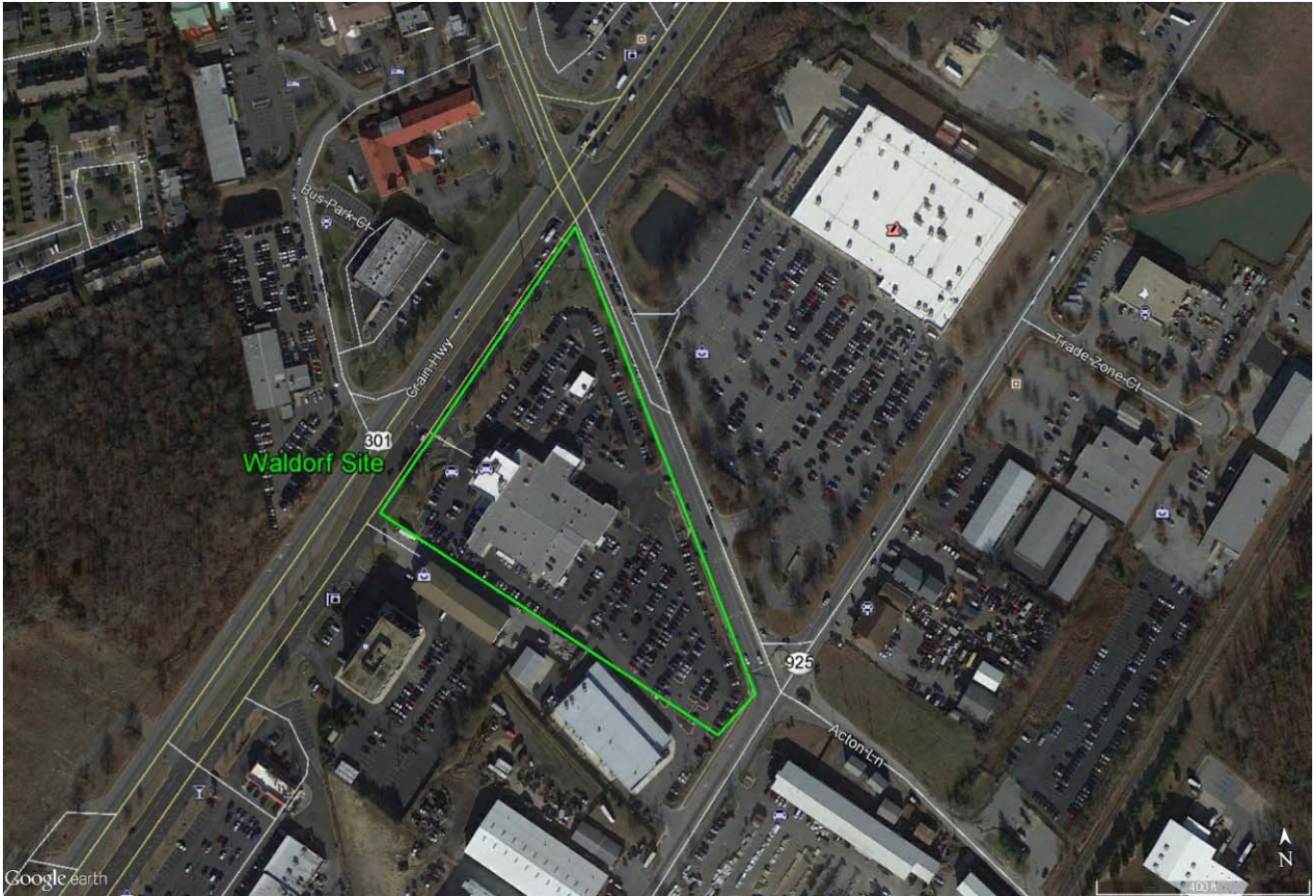
Site Name: Morgantown Power Plant Site

Image Date: May 2015

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because Knight, 2017 indicated no records of onsite CCB fill areas.

Notes: None.



County: Charles

Site Name: Waldorf Power Plant Site

Image Date: December 2016

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because site has been capped and redeveloped with buildings.

Notes: None.





County: Charles

Site Name: Faulkner Fly Ash Storage Site

Image Date: May 2015

Location/Boundary Source: MDE, 2010

Recoverability: Potentially recoverable because records indicate only CCBs were placed at the site and site is active.

Notes: Inactive CCB storage site that received CCBs from Morgantown power plant from 1975 through at least 2010.





# Dorchester County





County: Dorchester

Site Name: Vienna Power Plant Site 1

Image Date: October 2013

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because site has been capped and redeveloped with buildings.

Notes: PPSP, 1982a indicates that from 1950 to 1966, CCBs were sluiced to a settling basin onsite. Report is unclear on specific location of basin.





County: Dorchester

Site Name: Vienna Power Plant Site 2

Image Date: October 2013

Location/Boundary Source: PPRP, 1982

Recoverability: Potentially recoverable because records indicate that the site has been capped and only soil was placed at the site.

Notes: Between 1966 and 1972, CCBs were sluiced from the Vienna power plant (located to the northwest on the opposite side of the Nanticoke River) to this area, which was surrounded by a dike. PPSP, 1982b indicates that several breaches of the dike occurred during the period when this placement area was active.

# Garrett County





County: Garrett

Site Name: ARJ Construction

MDE ID#: SM-13-463

MDE Status as of June 2017: Active

Image Date: November 2016

Location/Boundary Source: Hooker, 2017

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: None.





County: Garrett

Site Name: G&S Coal Co.

MDE ID#: SM-08-455

MDE Status as of June 2017: Active

Image Date: November 2016

Location/Boundary Source: Hooker, 2017

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: None.



County: Garrett

Site Name: G&S Coal Co. #1

MDE ID#: SM-92-421

MDE Status as of June 2017: Active

Image Date: November 2016

Location/Boundary Source: MDE, 2010; Hooker, 2017

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: None.





County: Garrett

Site Name: G&S Coal Co. #2

MDE ID#: SM-00-435

MDE Status as of June 2017: Active

Image Date: November 2016

Location/Boundary Source: MDE, 2010; Hooker, 2017

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: None.



County: Garrett

Site Name: G&S Coal Co. #3

MDE ID#: SM-02-441

MDE Status as of June 2017: Complete

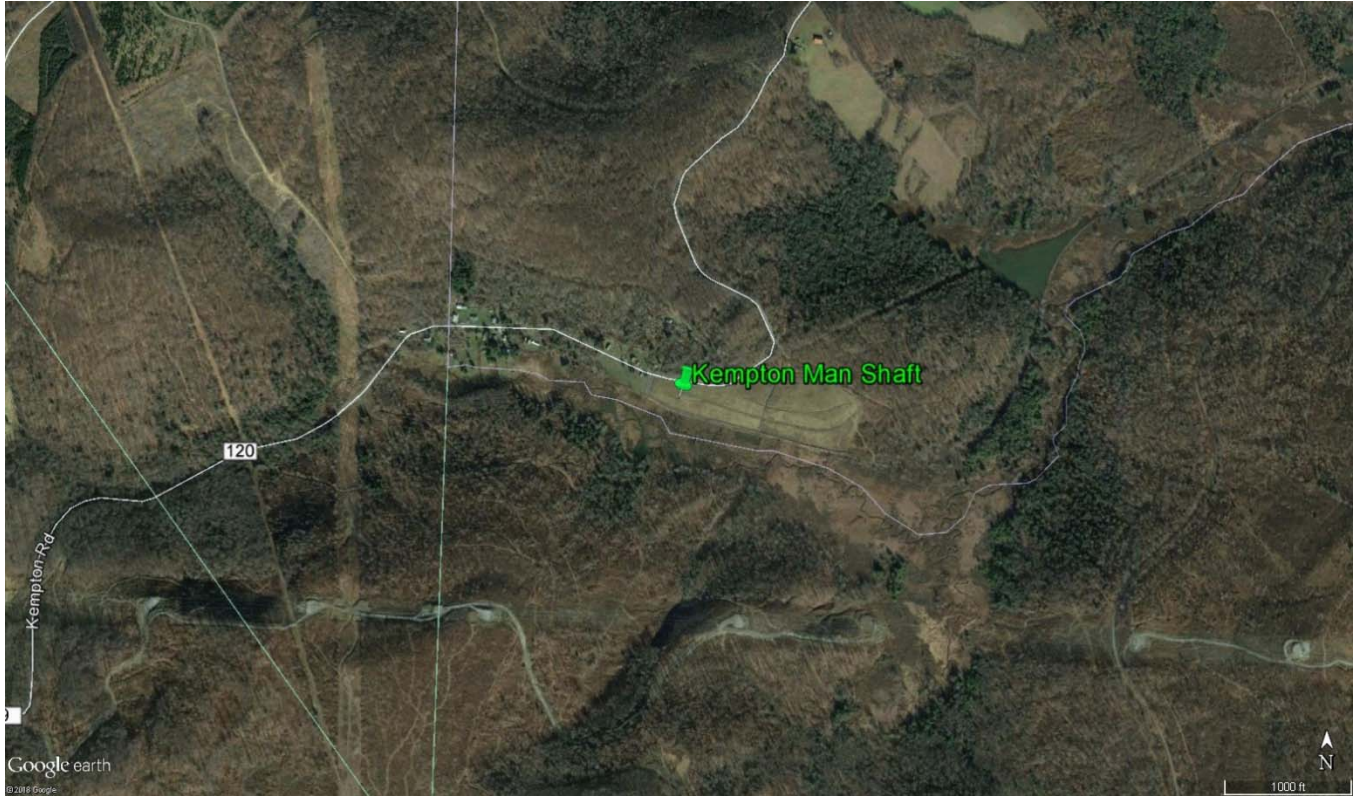
Image Date: November 2016

Location/Boundary Source: MDE, 2010; Hooker, 2017

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: None.





County: Garrett

Site Name: Kempton Man Shaft

Status: Closed

Image Date: January 2018

Location/Boundary Source: PPRP Project documents

Recoverability: Not recoverable were injected as a grout

Notes: PPRP CCB beneficial use project. CCBs were used to make a grout that was injected to form a "curtain" around the vertical mine shaft in order to prevent shallow ground water from seeping into the mine shaft and to the Kempton mine pool below.



County: Garrett

Site Name: Mettiki Coal Co. LLC

MDE ID#: DM-84-101

MDE Status as of June 2017: Active

Image Date: November 2013

Location/Boundary Source: MDE, 2010; Hooker, 2017

Recoverability: Not recoverable because CCBs placement at this site is a slurry of fly ash and FGD material.

Notes: None.





County: Garrett

Site Name: Moran Coal Co.

MDE ID#: CCB-10-001

MDE Status as of June 2017: Active

Image Date: November 2016

Location/Boundary Source: MDE, 2010; Hooker, 2017

Recoverability: Potentially recoverable because records indicate only CCBs (from the Verso power plant) were placed at the site and site is active.

Notes: Review of historic satellite photos indicates movement of active area gradually south and east. Portions may have been capped recently. Paul Petzrick indicated in a meeting on 7/21/17 that the material being placed at this site likely contains high unburned carbon levels (it is black in color) and would have to be tested to determine if it is appropriate for cement kiln feedstock.



County: Garrett

Site Name: Moran Coal Co. #2

MDE ID#: SM004-445

MDE Status as of June 2017: Complete

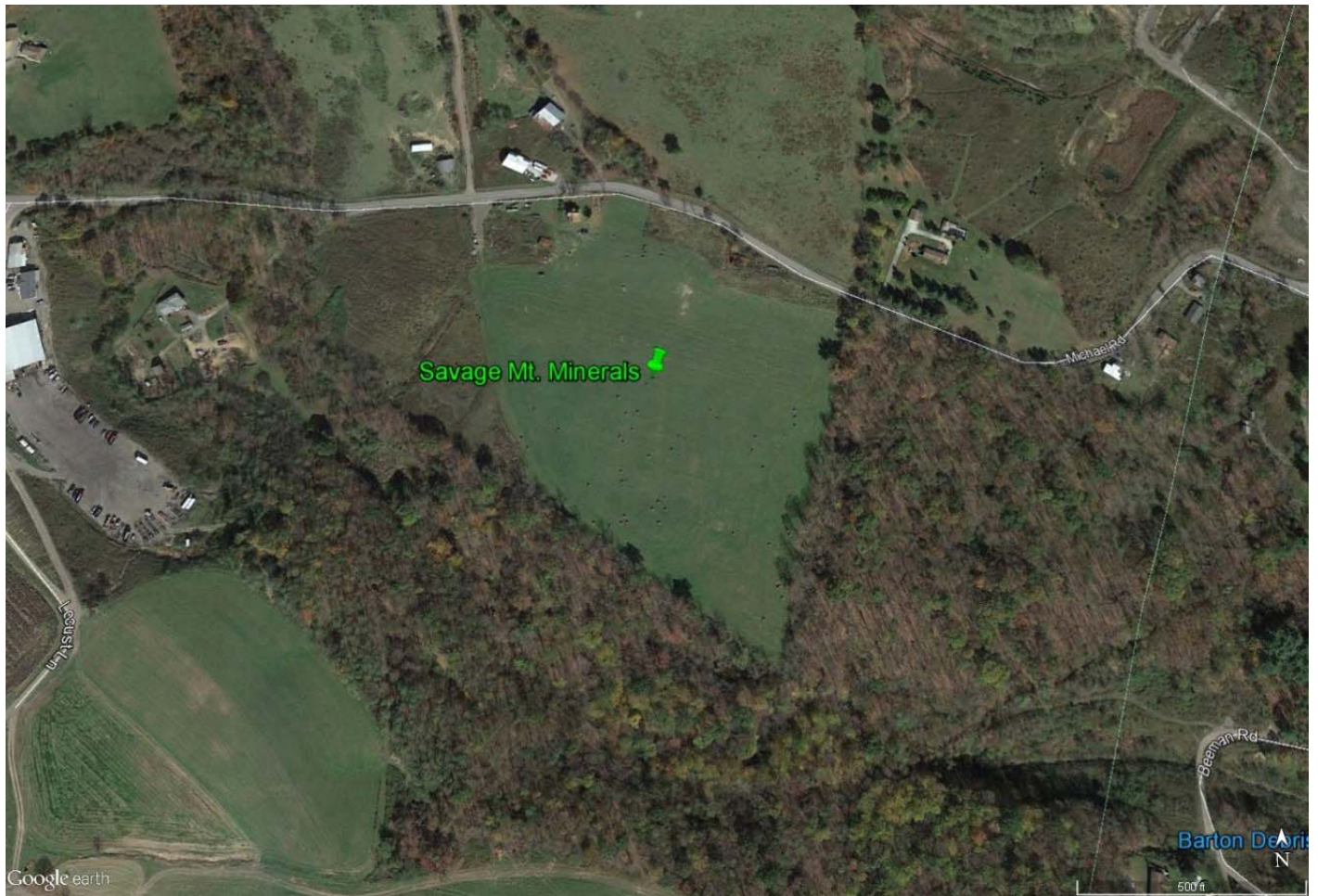
Image Date: November 2016

Location/Boundary Source: MDE, 2010; Hooker, 2017

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: None.





County: Garrett

Site Name: Savage Mt. Minerals

MDE ID#: SM-05-448

MDE Status as of June 2017: Active

Image Date: November 2016

Location/Boundary Source: Hooker, 2017, Personal Communication

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: Historic aerial images are available on GoogleEarth dating back to 1995. Although Hooker, 2017 indicates that the site is active, MDE's tables also indicate that no CCBs have been placed at the site since 2010. Review of historic images indicate that site was vegetated between 2011 and 2013.



County: Garrett

Site Name: Tri-Star Mining

MDE ID#: SM-99-434

MDE Status as of June 2017: Complete

Image Date: November 2016

Location/Boundary Source: MDE, 2010; Hooker, 2017

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: Location verified with MDE shapefiles. This location appears to be where there was a highway collapse in 2007. Satellite imagery indicates there is still some activity adjacent to this site to the west (may be an adjacent mine permitted separately).





County: Garrett

Site Name: Tri-Star Mining #2

MDE ID#: SM-03-444

MDE Status as of June 2017: Complete

Image Date: November 2016

Location/Boundary Source: MDE, 2010; Hooker, 2017

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: None.



County: Garrett

Site Name: Vindex Energy Corp. - Island S.

MDE ID#: SM-902-443

MDE Status as of June 2017: Complete

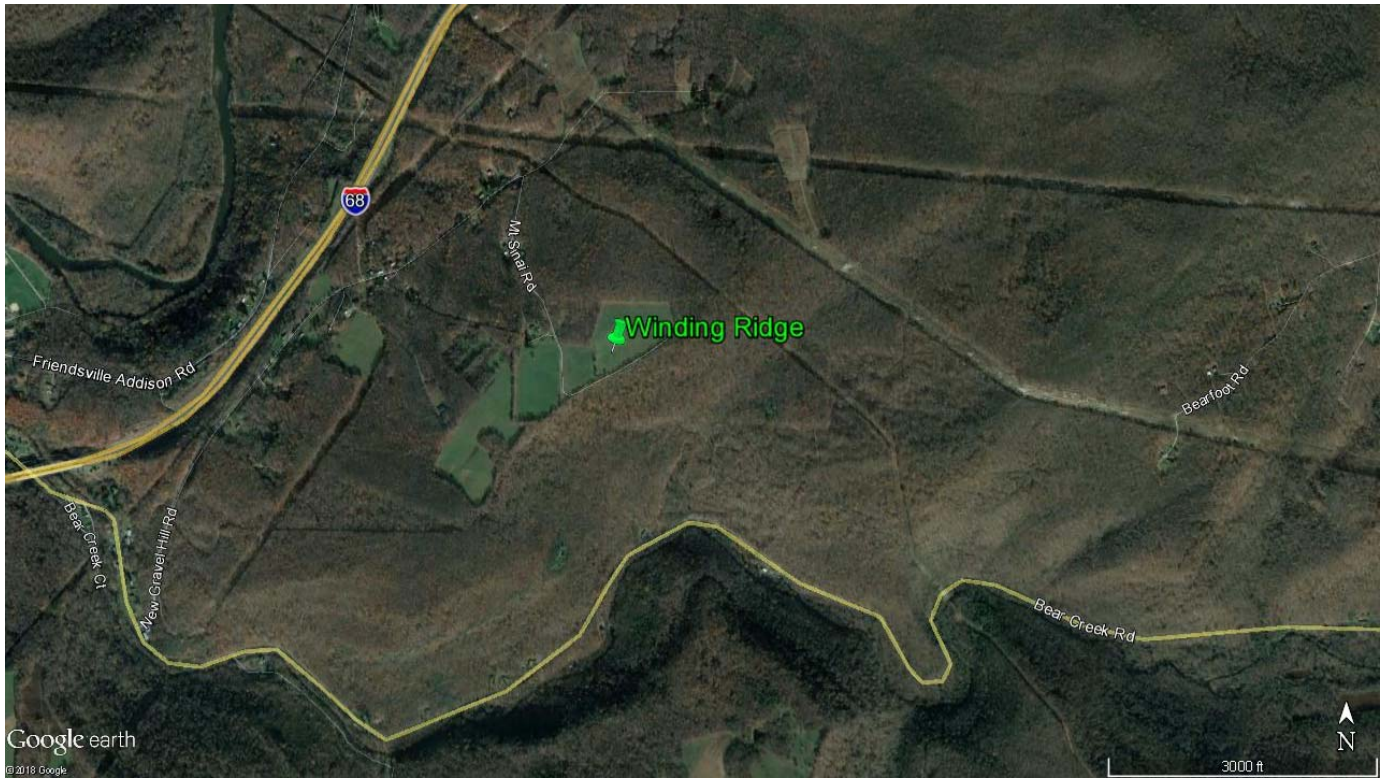
Image Date: November 2016

Location/Boundary Source: MDE, 2010; Hooker, 2017

Recoverability: Not recoverable because Warrior Run CCBs were co-mingled with surface mine overburden in a manner that makes recovery of the CCBs impractical.

Notes: None.





County: Garrett

Site Name: Winding Ridge

Status: Closed

Image Date: November 2016

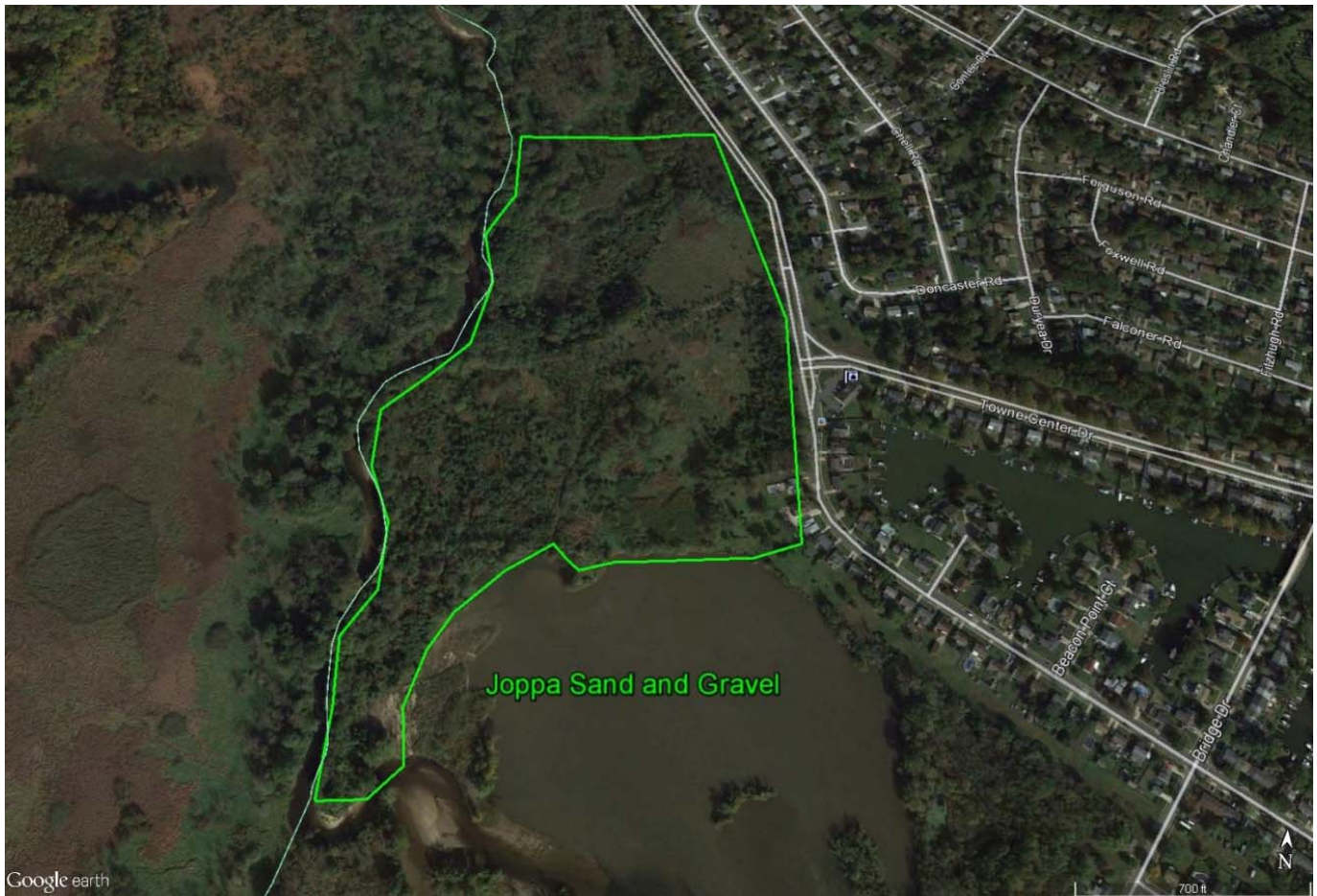
Location/Boundary Source: PPRP Project documents

Recoverability: Not recoverable were injected as a grout

Notes: PPRP CCB beneficial use project. CCBs were used to make a grout that was injected into a small, abandoned, underground coal mine. Goal of the project was to fill mine, coat mine pavement and entomb pyrite-containing debris, cutting off contact between pyrite, water, and oxygen to reduce the formation of acid mine drainage.

# Harford County





County: Harford

Site Name: Joppa Sand and Gravel Site

Image Date: October 2014

Location/Boundary Source: PPRP, 1982

Recoverability: Potentially recoverable because records indicate only CCBs and soil were placed at the site and site appears to be undeveloped.

Notes: Windshield Survey Performed 7/25/17: Site viewed from Shore Dr. which runs along the eastern site boundary. Site is mostly vegetated. One paved private access road visible. Signs along fence indicate that some portions of the site may be currently used for recreational purposes.





# Montgomery County





County: Montgomery

Site Name: Dickerson Power Plant Site

Image Date: April 2016

Location/Boundary Source: PPSP, 1982; Heimlicher, 2017

Recoverability: Not recoverable because Heimlicher, 2017 indicated no records of onsite CCB fill areas.

Notes: None





County: Montgomery

Site Name: Westland Fly Ash Storage Site

Image Date: April 2016

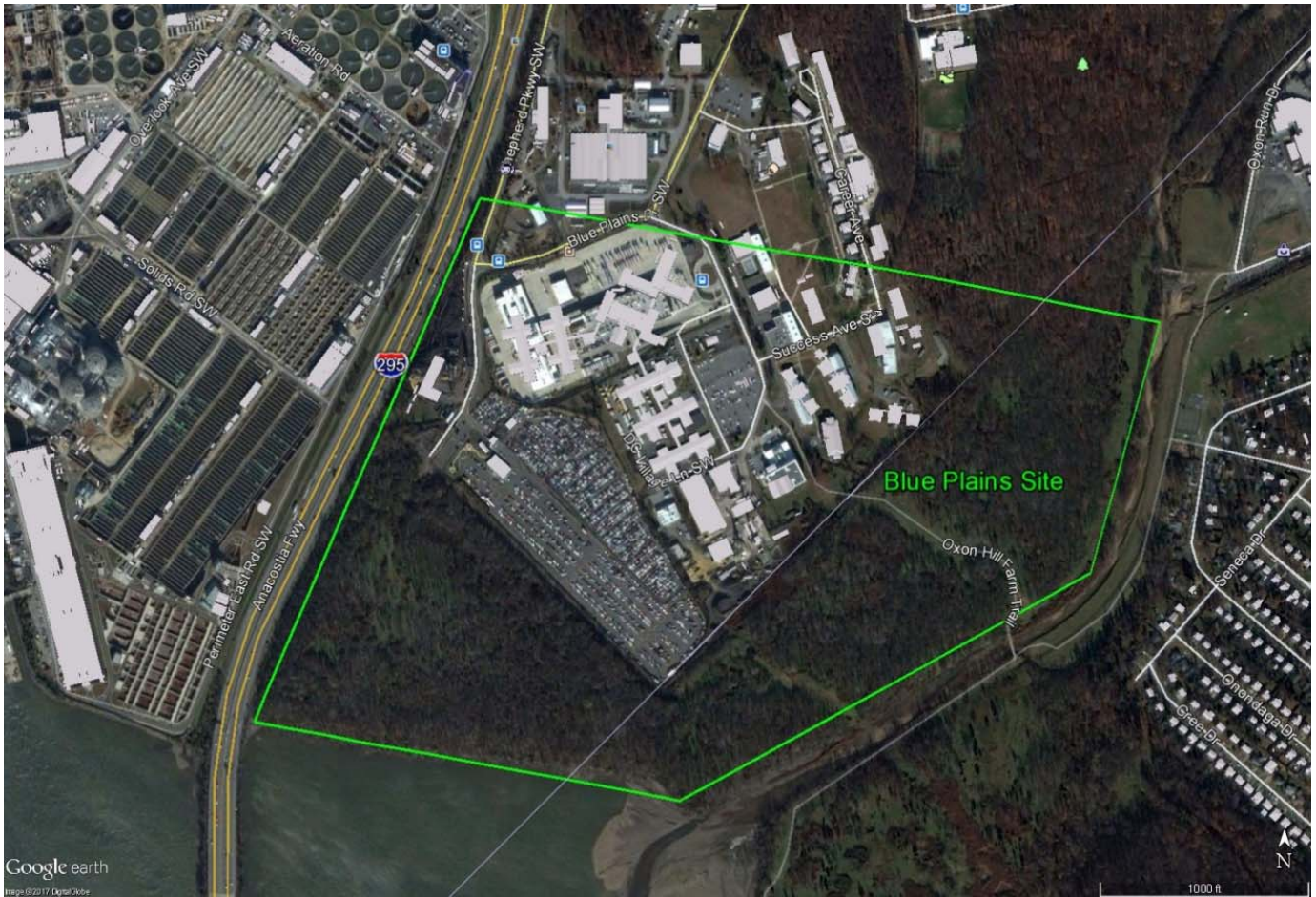
Location/Boundary Source: PPRP, 1982; MDE, 2010

Recoverability: Potentially recoverable because records indicate only CCBs were placed at the site and site is active.

Notes: Active CCB storage site receiving CCBs from Dickerson power plant since 1981.

Prince George's County





County: Prince George's

Site Name: Blue Plains Site

Image Date: December 2016

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because CCBs were disposed along with other waste materials.

Notes: Most of this site is located within Washington DC. The portion of the site within Washington DC partly developed with parking lots and buildings.

Remainder of site appears to be vegetated. There is a Blue Plains Wastewater Treatment Plant in the area, difficult to tell if it extends onto the old landfill area.





County: Prince George's

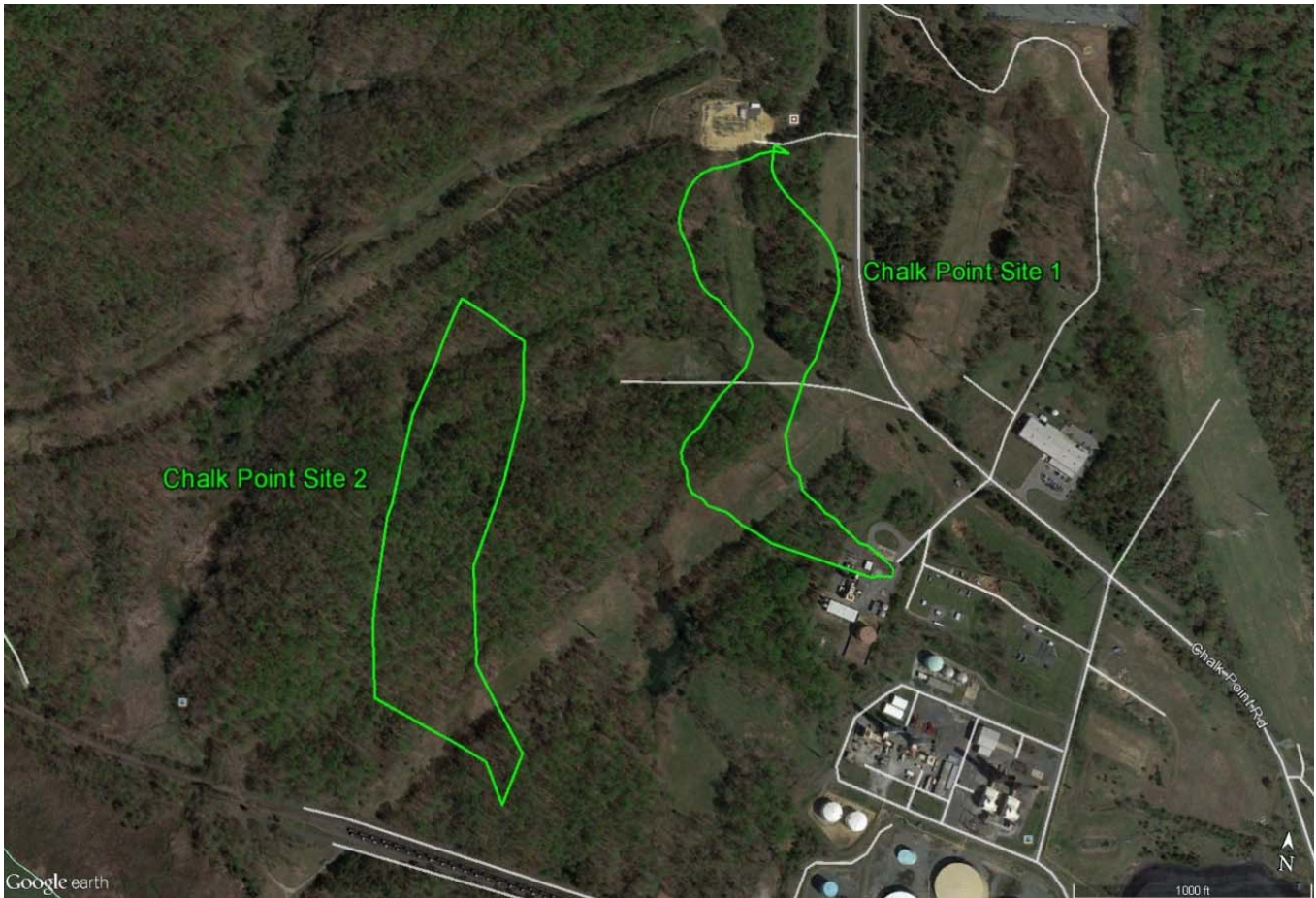
Site Name: Brandywine Fly Ash Storage Site

Image Date: April 2016

Location/Boundary Source: MDE, 2010

Recoverability: Potentially recoverable because records indicate only CCBs were placed at the site and site is active.

Notes: Active CCB storage site receiving CCBs from Morgantown power plant since 1970.



County: Prince George's

Site Name: Chalk Point Power Plant Site 1

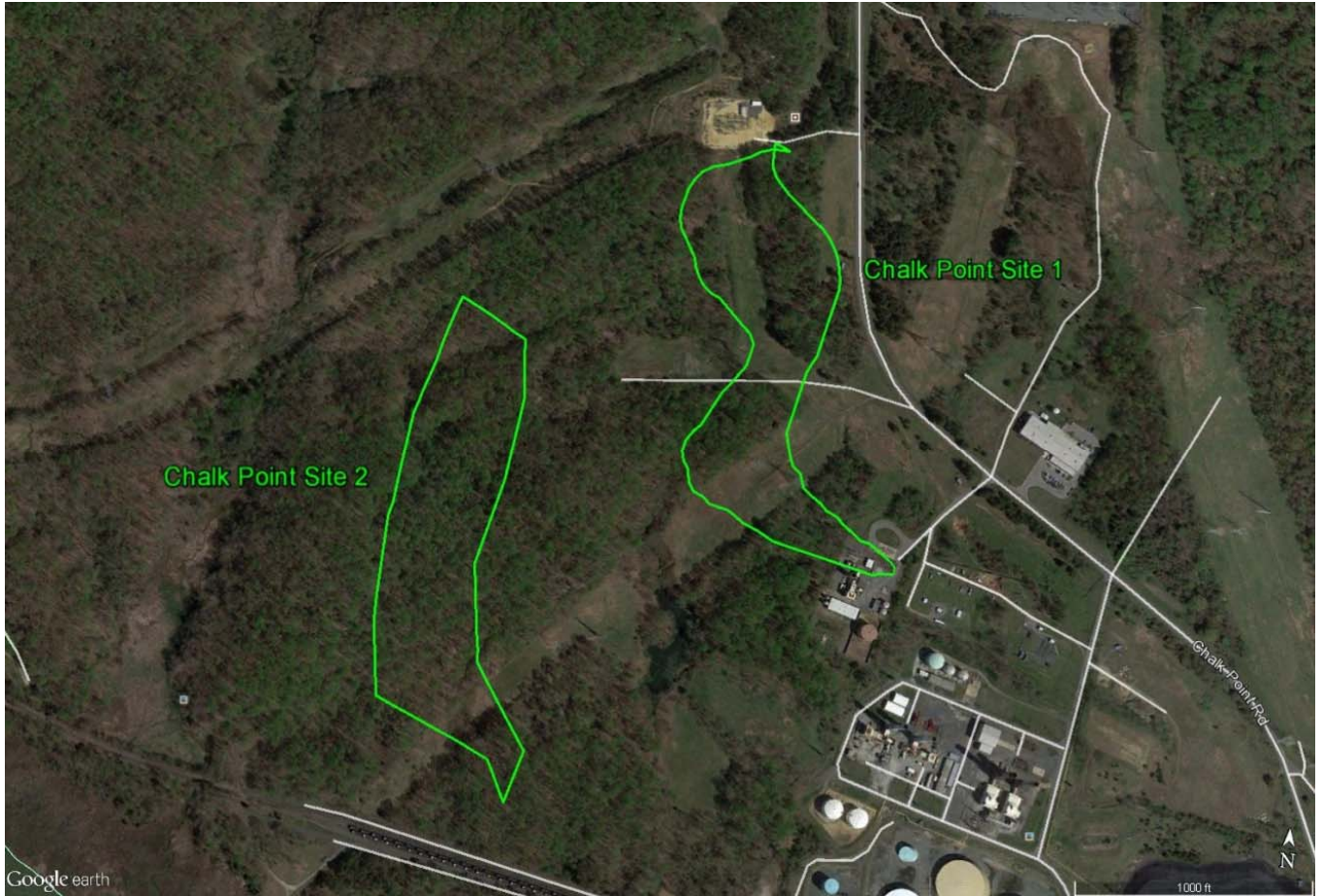
Image Date: September 2016

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because Nitz, 2017 indicated no records of onsite CCB fill areas.

Notes: This location is slightly north and west of the Chalk Point Power Plant along a cleared area, possibly a transmission line right of way.





County: Prince George's

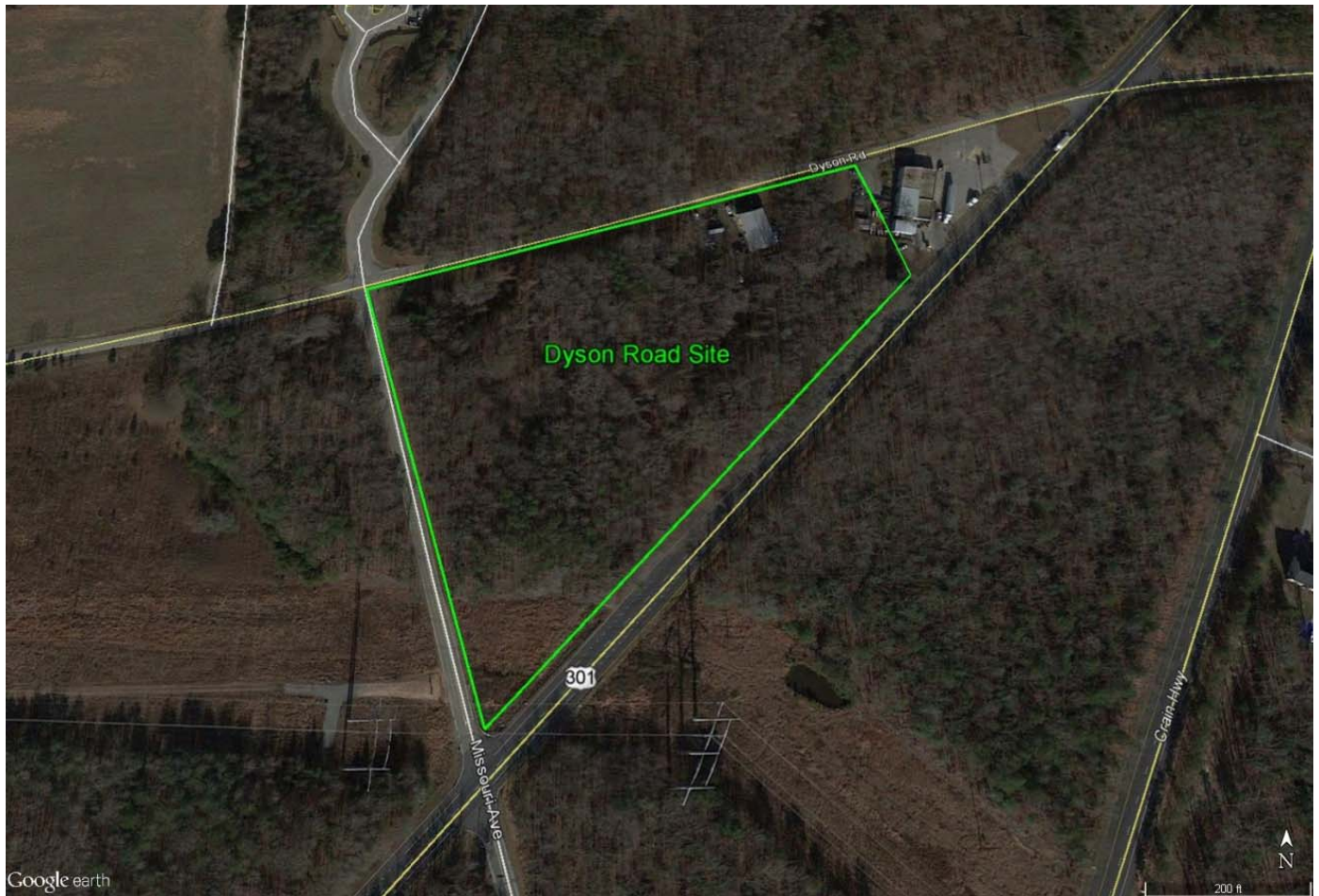
Site Name: Chalk Point Power Plant Site 2

Image Date: September 2016

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because Nitz, 2017 indicated no records of onsite CCB fill areas.

Notes: This Location is slightly north and west of the Chalk Point Power Plant.



County: Prince George's

Site Name: Dyson Road Site

Image Date: December 2016

Location/Boundary Source: PPRP, 1982

Recoverability: Potentially recoverable because records indicate only CCBs and soil were placed at the site and site appears to be undeveloped.

Notes: Windshield Survey Performed on 28 July, 2017. Majority of site is vegetated with one building (Prestige 24/7 Auto Center) confirmed to be on the site. Hummocky, uneven terrain noted in portions of vegetated areas. Multiple underground and overhead utility lines noted along roads surrounding the site.





County: Prince George's

Site Name: Kenilworth Avenue Site

Image Date: January 2017

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because CCBs were disposed along with other waste materials and majority of site is redeveloped with buildings and roads..

Notes: None.



County: Prince George's

Site Name: Piscataway Site 1

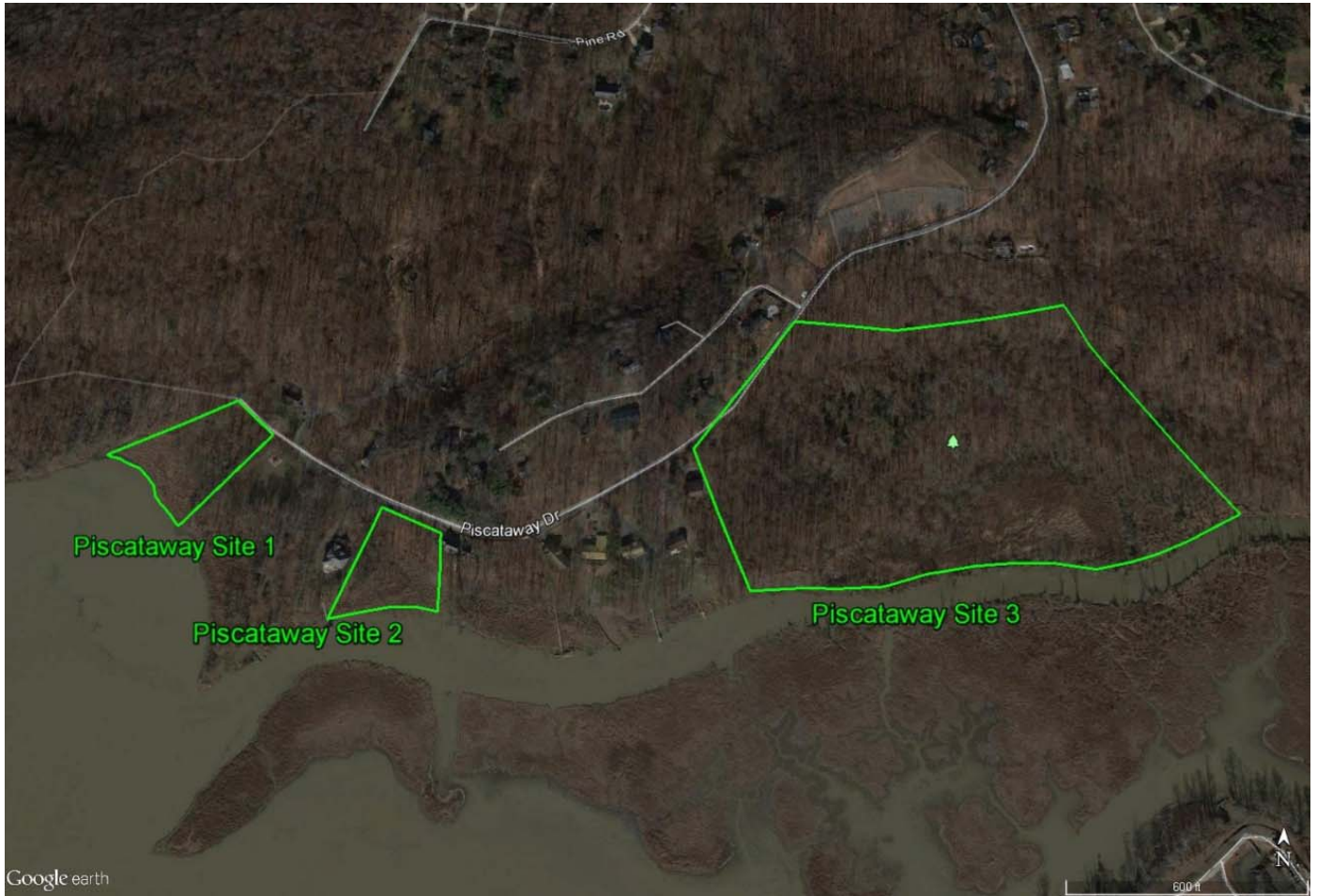
Image Date: December 2016

Location/Boundary Source: PPRP, 1982

Recoverability: Potentially recoverable because records indicate only CCBs and soil were placed at the site and site appears to be undeveloped.

Notes: Windshield survey performed on: 28 July 2017. Site was inaccessible because Piscataway Dr. ends east of the site.





County: Prince George's

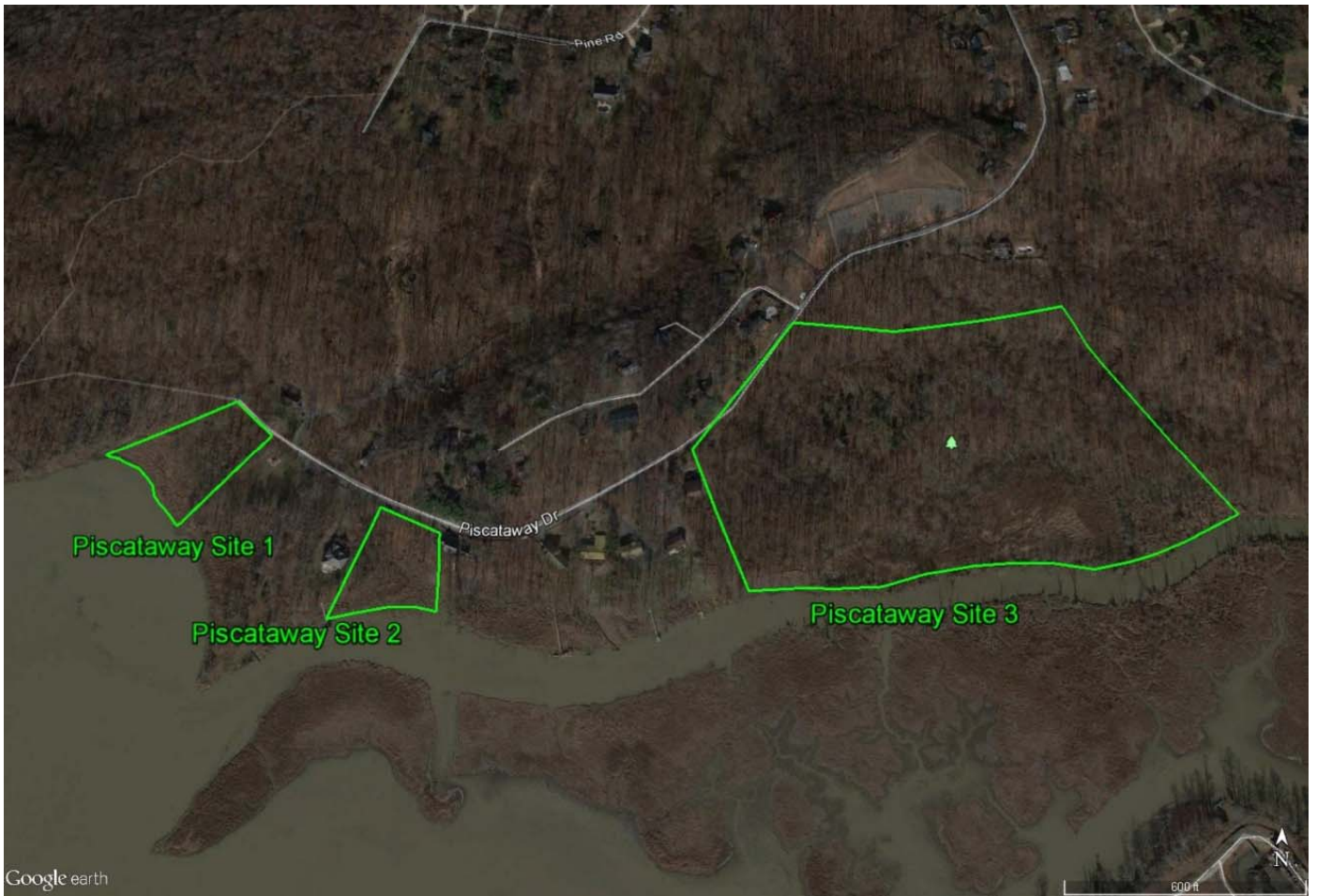
Site Name: Piscataway Site 2

Image Date: December 2016

Location/Boundary Source: PPRP, 1982

Recoverability: Potentially recoverable because records indicate only CCBs and soil were placed at the site and site appears to be undeveloped.

Notes: Windshield survey performed on 28 July 2017. Site visibility from Piscataway Dr. is limited due to heavy vegetation. Site appears to be vegetated with steep terrain.



County: Prince George's

Site Name: Piscataway Site 3

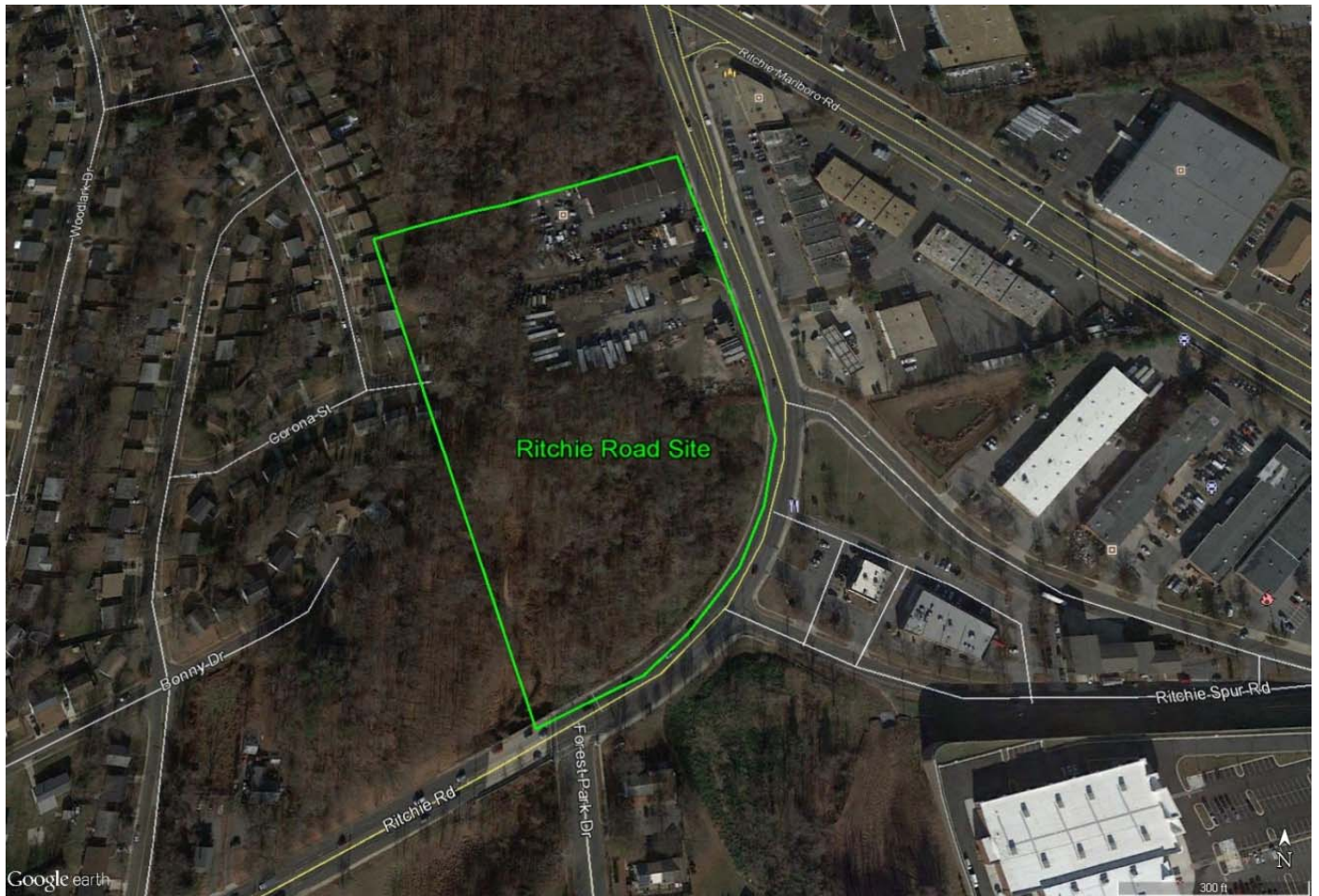
Image Date: December 2016

Location/Boundary Source: PPRP, 1982

Recoverability: Potentially recoverable because records indicate only CCBs and soil were placed at the site and site appears to be undeveloped.

Notes: Windshield survey performed on 28 July 2017. Site visibility from Piscataway Dr. is limited due to heavy vegetation. Site appears to be vegetated with steep terrain.





County: Prince George's

Site Name: Ritchie Road Site

Image Date: December 2016

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because site is capped and redeveloped with buildings.

Notes: None.





County: Prince George's

Site Name: Woods Corner Site

Image Date: January 2017

Location/Boundary Source: PPRP, 1982

Recoverability: Not recoverable because CCBs were disposed along with other waste materials and site is redeveloped with buildings and roads.

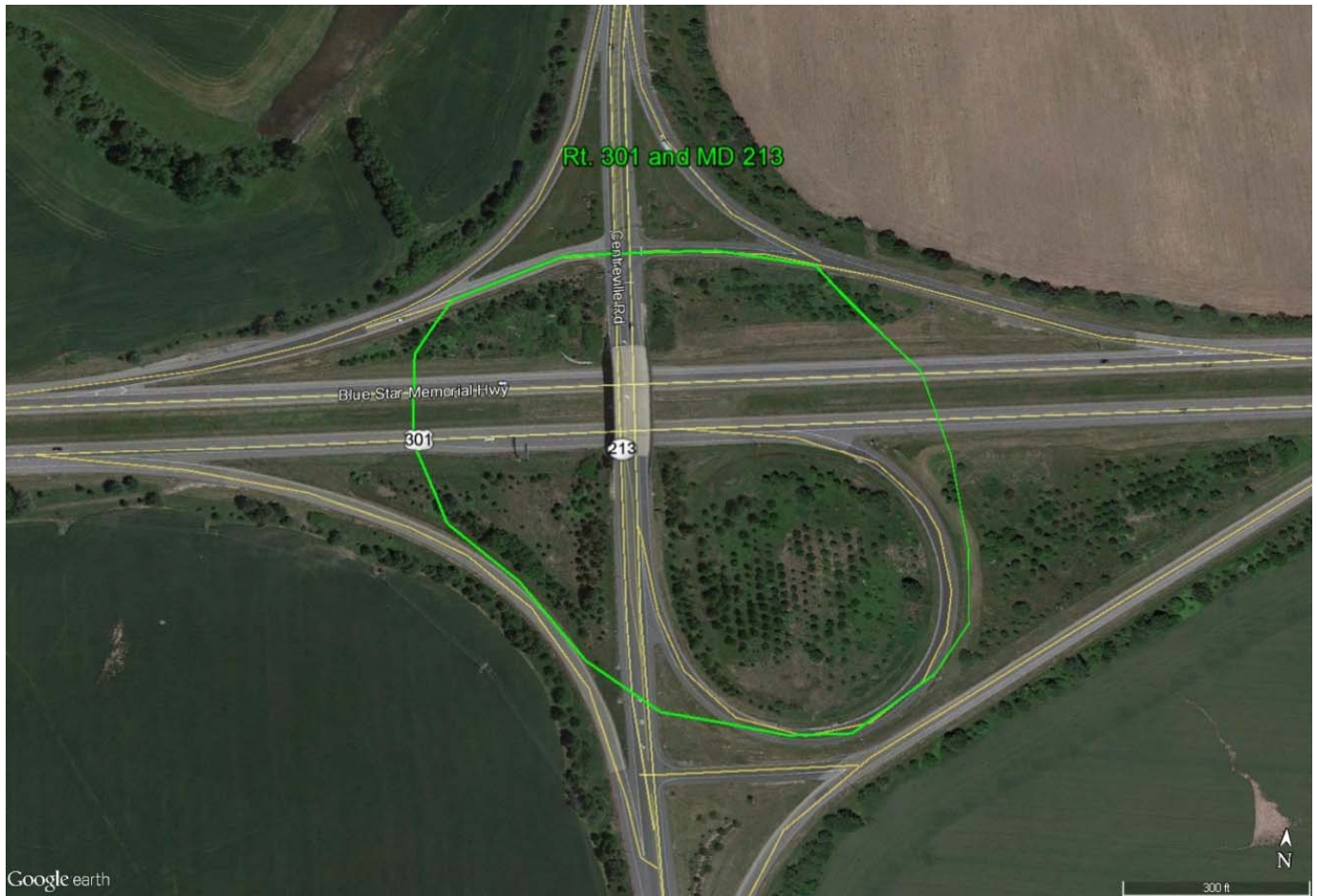
Notes: None.



# Queen Anne County







County: Queen Anne

Site Name: US Route 301/MD 213 Overpass

Image Date: May 2013

Location/Boundary Source: MDE, 2010; PPRP, 2004; PPRP, 2017b

Recoverability: Not recoverable because fill areas are associated with public roads.

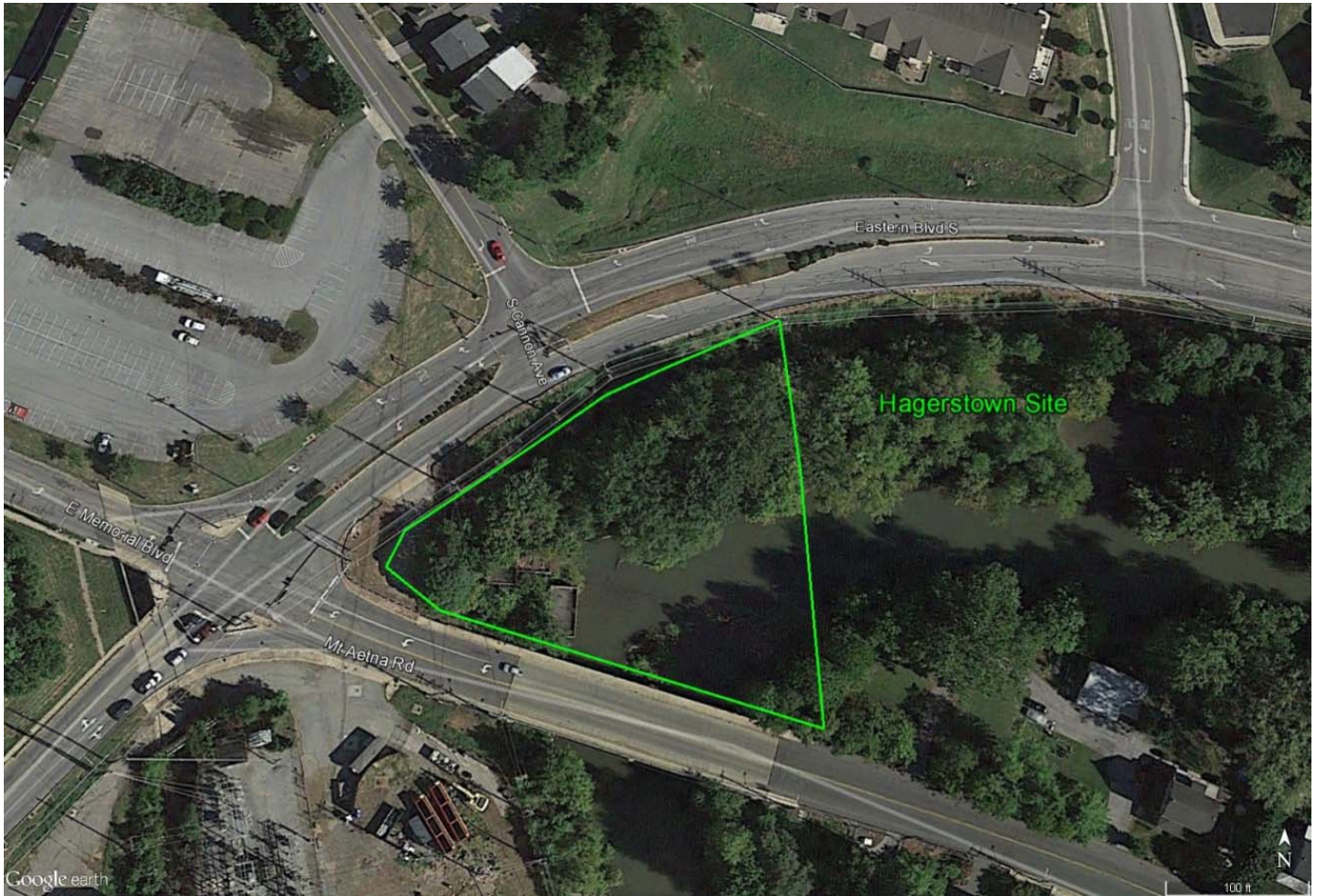
Notes: None.



# Washington County







County: Washington

Site Name: Hagerstown Power Plant Site

Image Date: September 2015

Location/Boundary Source: PPSP, 1982

Recoverability: Not recoverable because site is capped and redeveloped with buildings. It is also likely that the quantity of CCBs at this site is small..

Notes: PPSP, 1982 indicates that this plant only generated small quantities of CCBs and that they were mostly disposed in a landfill in Pennsylvania.



# Wicomico County







County: Wicomico

Site Name: Newland Park Sanitary Landfill

Image Date: March 2013

Location/Boundary Source: MDE, 2010

Recoverability: Not recoverable because CCBs were disposed along with other waste materials.

Notes: None.



*Appendix C*  
*Windshield Survey Report Forms*





## CCB Site Windshield Survey Form

Site Name: Turner Pit (West)

Inspector: Robin Lee

Survey Date/Time: 7/25/17 9:00 am

Weather/Visibility Conditions: Sunny, Clear, 75° F

Describe the vantage point(s) from which you can view the site (i.e. road name, and in which direction you are looking):

1. Apartment building parking lot.

- North –
- East –
- South – (southwest )
- West –

2. Edge of parking lot between Dick's and Wegmens.

- North – (northwest)
- East –
- South – (southwest )
- West –

3. Evergreen Rd. near triangular pond (beyond this point is a gate and sign reading "Private Road.")

- North – (northeast)
- East –
- South – (southwest )
- West –

Describe level of development at the site

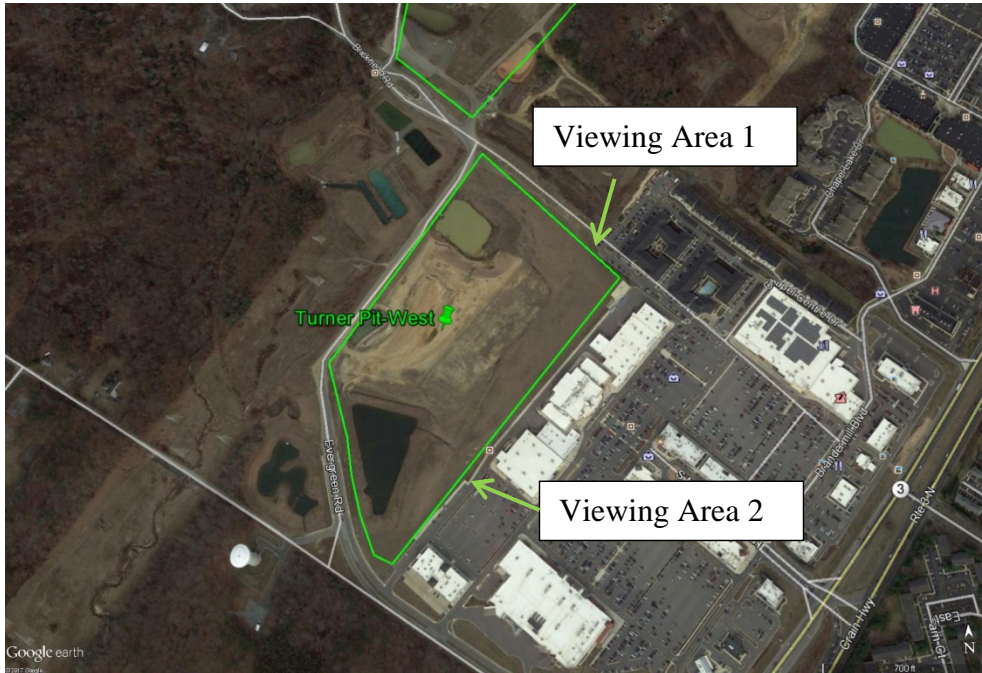
- Are there visible CCBs at the site?  
No
- Is site vegetated? If so, describe (i.e. mown grass, weeds, brushy or forested)  
Tall grass growing around triangular pond. Bare earth visible further to the north and east.
- Is any portion of the site paved? (i.e. roads or parking lots?). If so, indicate approximate percentage of site covered by pavement  
No.
- Are buildings present? If so, indicate number and apparent use (i.e. home, commercial business, etc.). If signage is present indicating site owner or use, please take a photograph and indicate so.  
No

- Any other relevant observations related to potential accessibility of CCBs for recovery.  
Earth moving equipment is active northeast of the triangular pond. Activity is on what appears to be a mound of red-brown earth.

Log any photos taken:

Photo 1: Looking southwest from apartment building parking lot.

Photo 2: Looking northwest from parking lot between Dicks and Wegmens.



Site layout and viewing locations



Photo 1: View of site looking southeast from Viewing Area 1 (parking lot of apartment complex).



Photo 2: View of site looking northeast from Viewing Area 2 (edge of parking lot between Dicks and Wegmans)





## CCB Site Windshield Survey Form

Site Name: Waugh Chapel Pit

Inspector: Robin Lee

Survey Date/Time: 7/25/17 9:45 am

Weather/Visibility Conditions: Sunny, Clear, 75° F

Describe the vantage point(s) from which you can view the site (i.e. road name, and in which direction you are looking):

1. From Waugh Chapel Rd.

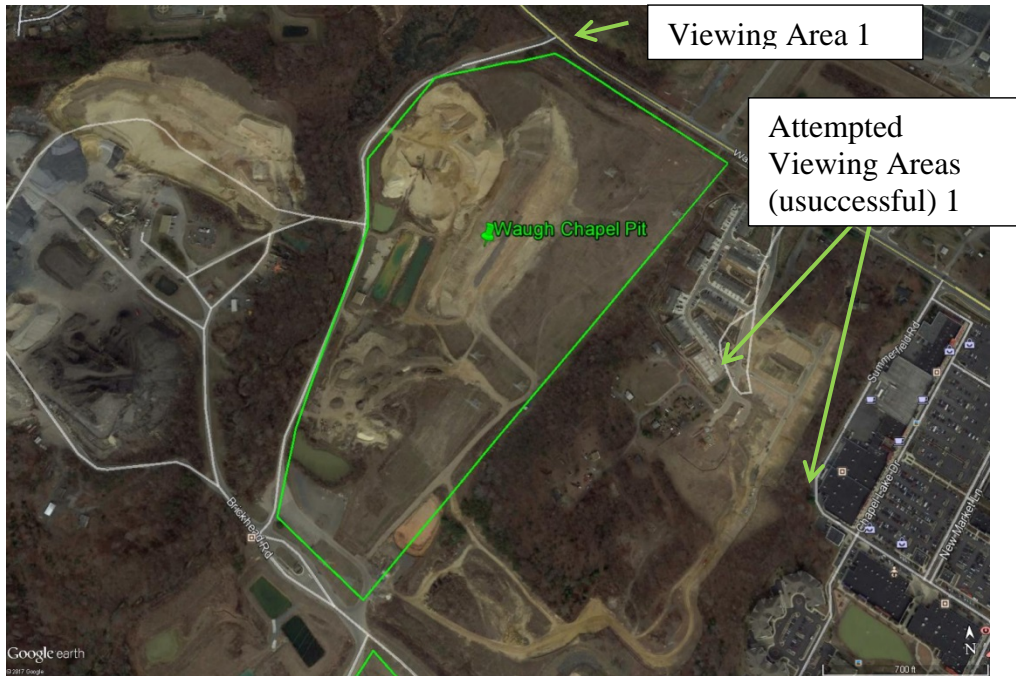
- North –
- East –
- South – (southwest)
- West –

Note: there is limited visibility of the site. West side of Waugh Chapel Rd. is wooded in this area. There is a sign reading “Reliable Construction: Waugh Chapel Plant” at private entrance. Also tried to view site from Summerfield Rd. and housing complex just south of the site, but visibility is blocked by houses and vegetation.

Describe level of development at the site

- Are there visible CCBs at the site?  
No (but visibility of site is very limited).
- Is site vegetated? If so, describe (i.e. mown grass, weeds, brushy or forested)  
Portion of the site along Waugh Chapel Rd. is wooded. The vegetation obscures view of the rest of the site.
- Is any portion of the site paved? (i.e. roads or parking lots?). If so, indicate approximate percentage of site covered by pavement  
Paved private access road that leads west from Waugh Chapel Rd.
- Are buildings present? If so, indicate number and apparent use (i.e. home, commercial business, etc.). If signage is present indicating site owner or use, please take a photograph and indicate so.  
None visible (but visibility of site is very limited).
- Any other relevant observations related to potential accessibility of CCBs for recovery.  
Active traffic observed entering and leaving the site by the private access road.

Log any photos taken



Site layout and Viewing locations



Photo 1: Sign at Viewing Area 1 (private entrance/access road).

## CCB Site Windshield Survey Form

Site Name: Riverside Power Plant Site

Inspector: Tracy Poremski

Survey Date/Time: 7/25/17 5:00 pm

Weather/Visibility Conditions: Overcast, Clear, 84° F

Describe the vantage point(s) from which you can view the site (i.e. road name, and in which direction you are looking):

From Broening Highway:

- X Southwest – (Woodland Avenue)
- X West – 4000 Broening Highway

Note: there is limited visibility of the site. Security gate blocked access (located 350' feet east of subject area).

Describe level of development at the site

- Are there visible CCBs at the site?  
No (but visibility of site is very limited). All other roads near site are private property.
- Is site vegetated? If so, describe (i.e. mown grass, weeds, brushy or forested)  
No (but visibility of site is very limited).  
Southwest portion of site appears wooded in aerial image.
- Is any portion of the site paved? (i.e. roads or parking lots?). If so, indicate approximate percentage of site covered by pavement  
Paved private access road that leads west from Broening Highway. Other paved areas are visible on aerial image.
- Are buildings present? If so, indicate number and apparent use (i.e. home, commercial business, etc.). If signage is present indicating site owner or use, please take a photograph and indicate so.  
Yes, multiple structures, large power generation building, and both small and large AST's. No signs were visible identifying property owner/manager.
- Any other relevant observations related to potential accessibility of CCBs for recovery.  
Active facility (BG&E vehicles on site).  
Multiple overhead power lines near site entrance.

Log any photos taken:

Photo 1: 4000 Broening Highway entrance (private entrance/access road).



Photo 2: View of site looking southwest from Walnut Avenue



Site layout and Viewing locations



Photo 1: 4000 Broening Highway entrance (private entrance/access road).



Photo 2: View of site looking southwest from Walnut Avenue



## CCB Site Windshield Survey Form

Site Name: Westport Power Plant Site 1

Inspector: Tracy Poremski

Survey Date/Time: 7/26/17 9:30 am

Weather/Visibility Conditions: Overcast, light rain, 70° F

Describe the vantage point(s) from which you can view the site (i.e. road name, and in which direction you are looking):

North – (northeast) Kloman Street

South – (southeast) Kloman Street

Describe level of development at the site

- Are there visible CCBs at the site?  
No
- Is site vegetated? If so, describe (i.e. mown grass, weeds, brushy or forested)  
Yes, some brush, mowed grassy areas, a small tree line runs east/west through site.
- Is any portion of the site paved? (i.e. roads or parking lots?). If so, indicate approximate percentage of site covered by pavement  
Yes, approximately 30%, parking and a few small roads.
- Are buildings present? If so, indicate number and apparent use (i.e. home, commercial business, etc.). If signage is present indicating site owner or use, please take a photograph and indicate so.  
No. Remnants of former brick structure visible along western boundary of site. There are a few concrete jersey barriers on site as well.
- Any other relevant observations related to potential accessibility of CCBs for recovery.  
Overhead power lines on western boundary.  
Abandoned railroad tracks and fire hydrant.  
Mounded soil in southwest portion of site.  
Potential wetland area in middle of grassy area.

Log any photos taken:

Photo 1: View of site looking northeast.

Photo 2: View of paved road and concrete jersey walls looking southeast.

Photo 3: View of former brick structure looking southeast.

Photo 4: View of mounded soil looking northeast.





Site layout



Photo 1: View of site looking northeast. Note small mound of material in center of image.



Photo 2: View of paved road and concrete jersey walls looking southeast.



Photo 3: View of former brick structure looking southeast.



Photo 4: View of mounded material looking northeast.

## CCB Site Windshield Survey Form

Site Name: Westport Power Plant Site 2

Inspector: Tracy Poremski

Survey Date/Time: 7/26/17 9:00 am

Weather/Visibility Conditions: Overcast, light rain, 70° F

Describe the vantage point(s) from which you can view the site (i.e. road name, and in which direction you are looking):

- X North – (northeast) Kloman Street
- X South – (southeast) Kloman Street

Describe level of development at the site

- Are there visible CCBs at the site?  
No. (but visibility of site is limited to paved portion)
- Is site vegetated? If so, describe (i.e. mown grass, weeds, brushy or forested)  
Yes, northern portion of site is forested and brushy. Ravine/wetlands area visible just north of paved/grassy area (limited access to vegetated portion of site due to locked gate at north end of Kloman Street).
- Is any portion of the site paved? (i.e. roads or parking lots?). If so, indicate approximate percentage of site covered by pavement  
Yes, parking lot. Approximately 60% of Westport Site 2.
- Are buildings present? If so, indicate number and apparent use (i.e. home, commercial business, etc.). If signage is present indicating site owner or use, please take a photograph and indicate so.  
None visible. One structure visible on aerial image on northwest corner of site. Chain-link fence present along western property boundary.
- Any other relevant observations related to potential accessibility of CCBs for recovery.  
Aerial image shows railroad tracks on northern portion of parcel.

Log any photos taken:

Photo 1: Main gate looking east.

Photo 2: View of parking lot looking northeast.

Photo 3: View of locked gate at north end of Kloman Street.





Site layout



Photo 1: Main gate looking east.



Photo 2: View of parking lot looking northeast.



Photo 3: View of locked gate at north end of Kloman Street.



## CCB Site Windshield Survey Form

Site Name: Joppa Sand and Gravel Site

Inspector: Tracy Poremski

Survey Date/Time: 7/25/17 1:30 pm

Weather/Visibility Conditions: Overcast, 80° F

Describe the vantage point(s) from which you can view the site (i.e. road name, and in which direction you are looking):

West – Shore Drive

Describe level of development at the site

- Are there visible CCBs at the site?  
No
- Is site vegetated? If so, describe (i.e. mown grass, weeds, brushy or forested)  
Yes, Appears to be mostly forested except for area near former Gunpowder State Park, which is clear and has new trees planted.
- Is any portion of the site paved? (i.e. roads or parking lots?). If so, indicate approximate percentage of site covered by pavement  
Yes, former entrance to park (<5%).
- Are buildings present? If so, indicate number and apparent use (i.e. home, commercial business, etc.). If signage is present indicating site owner or use, please take a photograph and indicate so.  
None observed from Shore Dr.
- Any other relevant observations related to potential accessibility of CCBs for recovery.  
Barbed wire fence runs along Shore Dr. property line and turns west at residence at 772 Shore Dr.

Log any photos taken:

Perimeter Trees appear taller – looking NW from Shore Dr.





Site layout and viewing areas.



Photo 1: Entrance to Former Gunpowder State Park.





Photo 2: Looking West inside of Former Gunpowder State Park.



Photo 3: Looking South along Shore Drive.



Photo 4: Sign indicating recreational usage and path entrance.

## CCB Site Windshield Survey Form

Site Name: Dyson Road

Inspector: Tracy Poremski

Survey Date/Time: 7/28/17 8:00 am

Weather/Visibility Conditions: Overcast, Clear, 81° F

Describe the vantage point(s) from which you can view the site (i.e. road name, and in which direction you are looking):

North – Missouri Avenue

Northeast – Rt. 301

East – Dyson Road

Describe level of development at the site

- Are there visible CCBs at the site?  
No
- Is site vegetated? If so, describe (i.e. mown grass, weeds, brushy or forested)  
Yes, 90% forested, brush at triangular area at southwest corner of Missouri Ave and Rt. 301 intersection.
- Is any portion of the site paved? (i.e. roads or parking lots?). If so, indicate approximate percentage of site covered by pavement  
No. There is a gravel parking lot at Prestige 24/7 Auto Services.
- Are buildings present? If so, indicate number and apparent use (i.e. home, commercial business, etc.). If signage is present indicating site owner or use, please take a photograph and indicate so.  
Yes, one structure (Prestige 24/7 Auto Services).
- Any other relevant observations related to potential accessibility of CCBs for recovery.
  - 1) Overhead power lines along Dyson Road.
  - 2) Gas pipeline sign located on subject area along Rt. 301.
  - 3) Underground power cable box at intersection of Dyson Road and Missouri Ave.
  - 4) Terrain appeared hummocky in areas along Missouri Ave and northern portion of site along Rt. 301.

Log any photos taken:

Photo 1: View of Missouri Avenue looking north.

Photo 2: View of Dyson Road looking east.

Photo 3: View of Rt. 301 looking northeast from Missouri Ave.



Photo 4: Prestige 24/7 Auto Services.

Photo 5: Prestige 24/7 parking lot and newly cleared area.

Photo 6: Gas pipeline warning sign along Rt. 301 near northeast corner of subject area.

Photo 7: Hummocky terrain along Missouri Avenue.



Site layout and viewing locations



Photo 1: View of Missouri Avenue looking north.



Photo 2: View of Dyson Road looking east.



Photo 3: View of Rt. 301 looking northeast from Missouri Ave.





Photo 4: Prestige 24/7 Auto Services.



Photo 5: Prestige 24/7 parking lot and newly cleared area.









## CCB Site Windshield Survey Form

Site Name: Piscataway Site 1

Inspector: Tracy Poremski

Survey Date/Time: 7/28/17 10:40 am

Weather/Visibility Conditions: Overcast, Clear, 81° F

Describe the vantage point(s) from which you can view the site (i.e. road name, and in which direction you are looking):

From Piscataway Drive:

North – (northwest)

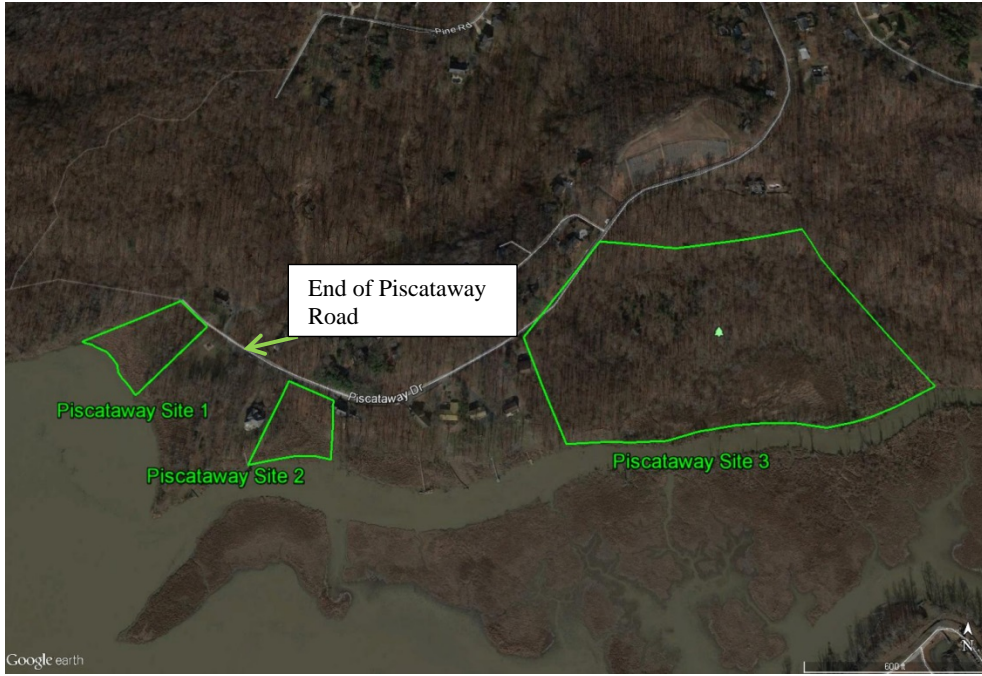
Note: Site was inaccessible. Piscataway Drive dead ends prior to eastern site boundary.

Describe level of development at the site

- Are there visible CCBs at the site?  
Site was inaccessible.
- Is site vegetated? If so, describe (i.e. mown grass, weeds, brushy or forested)  
Site was inaccessible. Site appears forested from aerial photograph.
- Is any portion of the site paved? (i.e. roads or parking lots?). If so, indicate approximate percentage of site covered by pavement
- Site was inaccessible.
- Are buildings present? If so, indicate number and apparent use (i.e. home, commercial business, etc.). If signage is present indicating site owner or use, please take a photograph and indicate so.
- Site was inaccessible.
- Any other relevant observations related to potential accessibility of CCBs for recovery.  
Piscataway Drive dead ends, there is a gate blocking entrance and pathway is overgrown.

Log any photos taken:

Photo 1: Location where Piscataway Road ends.



Site layout and viewing area.



Photo 1: Location where Piscataway Road ends.

## CCB Site Windshield Survey Form

Site Name: Piscataway Site 2

Inspector: Tracy Poremski

Survey Date/Time: 7/28/17 10:00 am

Weather/Visibility Conditions: Overcast, 81° F

Describe the vantage point(s) from which you can view the site (i.e. road name, and in which direction you are looking):

From Piscataway Drive:

X East

X South – (southeast)

X West

Note: there is limited visibility of the site - only viewed from Piscataway Drive.

Describe level of development at the site

- Are there visible CCBs at the site?  
No (but visibility of site is very limited).
- Is site vegetated? If so, describe (i.e. mown grass, weeds, brushy or forested)  
Entire site appears wooded. The vegetation and forested area obscures the view of the site.
- Is any portion of the site paved? (i.e. roads or parking lots?). If so, indicate approximate percentage of site covered by pavement  
No.
- Are buildings present? If so, indicate number and apparent use (i.e. home, commercial business, etc.). If signage is present indicating site owner or use, please take a photograph and indicate so.  
No.
- Any other relevant observations related to potential accessibility of CCBs for recovery.  
Parcel has steep terrain with limited access.  
Piscataway Drive is a narrow road and without shoulders.  
Wetlands/Piscataway Creek borders site to South.  
Parcel is located between two residential properties.

Log any photos taken:

Photo 1: Piscataway Drive looking west.

Photo 2: Piscataway Drive looking east.

Photo 3: Looking southeast.





Site layout



Photo 1: Piscataway Drive looking west.





Photo 2: Piscataway Drive looking east.



Photo 3: Looking southeast.



## CCB Site Windshield Survey Form

Site Name: Piscataway Site 3

Inspector: Tracy Poremski

Survey Date/Time: 7/28/17 11:00 am

Weather/Visibility Conditions: Overcast, 81° F

Describe the vantage point(s) from which you can view the site (i.e. road name, and in which direction you are looking):

From Piscataway Drive

X North –

X South – (southeast)

Note: there is limited visibility of the site - only viewed from Piscataway Drive.

Describe level of development at the site

- Are there visible CCBs at the site?  
No (but visibility of site is very limited).
- Is site vegetated? If so, describe (i.e. mown grass, weeds, brushy or forested)  
Entire site appears wooded. The vegetation and forested area along Piscataway Drive obscures the view of the site.
- Is any portion of the site paved? (i.e. roads or parking lots?). If so, indicate approximate percentage of site covered by pavement No.
- Are buildings present? If so, indicate number and apparent use (i.e. home, commercial business, etc.). If signage is present indicating site owner or use, please take a photograph and indicate so. No.
- Any other relevant observations related to potential accessibility of CCBs for recovery.  
Subject property has steep terrain with limited access.  
Piscataway Drive is a narrow road without shoulders.  
Wetlands/Piscataway Creek borders site to South.

Log any photos taken:

Photo 1: Piscataway Drive looking south.

Photo 2: Piscataway Drive looking north.

Photo 3: Looking southeast into subject property.





Site layout



Photo 1: Piscataway Drive looking south.





Photo 2: Piscataway Drive looking north.



Photo 3: Looking southeast into subject property.