ENVIRONMENTAL COVENANT

SITE NAME: Former GM Baltimore Assembly Plant Duke Realty
GRANTOR/OWNER: Duke Baltimore LLC
GRANTEE(S)/HOLDER(S): Maryland Department of the Environment; Duke Baltimore LLC

PROPERTY ADDRESS: 5975 Holabird Avenue, Baltimore, MD 21224—Sub Parcel B-1 (the "Property").

This Environmental Covenant is executed pursuant to the provisions of Subtitle 8, Title 1 of the Environment Article, Ann. Code of Md. (2013 Repl. Vol.). This Environmental Covenant subjects the Property identified in Paragraph 1 to the activity and/or use limitations in this document. This Environmental Covenant has been approved by the Maryland Department of the Environment ("Department" or "MDE") and the United States Environmental Protection Agency ("EPA").

1. **Property Affected**. The property affected ("Property") by this Environmental Covenant is located in Baltimore City, Maryland.

The postal street address of the Property is: 5975 Holabird Avenue, Baltimore, MD 21224.

The Land Records Deed Reference: Liber FMC 7313, Folio 272.

Tax Account Identification Number: 0326016874A002

The latitude and longitude of the center of the Property affected by this Environmental Covenant is: N39.26982 W76.54537 (Datum: World Geodetic System 84).

The Property has been known by the following names: Sub Parcel B-1, the Former American Standard Property – Ward 26, Section 1, Block 6874-A, Lots 2 & 3.

A complete metes and bounds description of the Property is attached to this Environmental Covenant as Exhibit A. A map of the Property is attached to this Environmental Covenant as Exhibit B.

2. **Property Owner/Grantor**. Duke Baltimore LLC is the owner ("Owner") of the Property and the Grantor of this Environmental Covenant. The mailing address of the Owner is: Duke Baltimore LLC, c/o Duke Realty Corporation, 161 Washington Street, Suite 1020, Conshohocken, PA 19428, Attn: Senior Vice President.

3. **Holder(s)/Grantee(s)**. The Department and Owner.

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4. **Regulatory Program(s) Issuing Determination.** The following regulatory program(s) is (are) responsible for having issued a determination requiring the use of this Environmental Covenant:

☑ EPA Corrective Action Program under the Resource Conservation and Recovery Act

MDE Programs

☑ Voluntary Cleanup Program
☐ Controlled Hazardous Substance Enforcement Program
☐ Oil Control Program
☐ Solid Waste Program
☐ Resource Management Program
☐ Other Program within the Department: _____

On March 26, 2015, EPA issued a Final Decision and Response to Comments ("FDRTC") selecting the Final Remedy for the Former GM Baltimore Assembly Facility, located at 5975 Holabird Avenue in Baltimore, Maryland. The Final Remedy includes a requirement that the Activity and Use Limitations described in paragraph 5, below, of this Environmental Covenant be imposed on the Property.

5. **Activity & Use Limitations**. The Property is subject to the following activity and use limitations, which the Owner and each subsequent owner of the Property shall abide by:

(a) The Property shall be restricted to commercial and/or industrial purposes and shall not be used for residential purposes unless (i) it is demonstrated to the Department and EPA that such use will not pose a threat to human health or the environment or adversely affect or interfere with the Final Remedy; and (ii) the Department and EPA provide prior written approval for such use;

(b) Groundwater from the Property shall not be used for any purpose other than to conduct the operation, maintenance, and monitoring activities required by the Department and/or EPA, unless (i) it is demonstrated to the Department and EPA that such use will not pose a threat to human health or the environment or adversely affect or interfere with the Final Remedy; and (ii) the Department and EPA provide written approval for such use;

(c) No new wells shall be installed on the Property unless (i) it is demonstrated to the Department and EPA that such wells are necessary to implement the Final Remedy and; (ii) the Department and EPA provide prior written approval to install such wells;

(d) The Owner shall perform all activities at the Property in accordance with the Risk Management Plan (Exhibit C), dated September 2014, to maintain the integrity and protectiveness of the Final Remedy unless (i) it is demonstrated to the Department and EPA that such activity will not pose a threat to human health or the environment or adversely affect or interfere with the Final Remedy; and (ii) the Department and EPA provide prior written approval for such use; and

(e) The Property shall not be used in any way that will pose a threat to human health or the environment or adversely affect or interfere with the integrity and protectiveness of the Final Remedy.

6. **Notice of Limitations in Future Conveyances**. Each instrument hereafter conveying any interest in the Property shall contain a notice of the activity and use limitations set forth in this Environmental Covenant and shall provide the recorded location of this Environmental Covenant.

7. **Access by the Department and EPA**. In addition to any rights already possessed by the Department or EPA, this Environmental Covenant grants to the Department and EPA a right of access to the Property to implement or enforce this Environmental Covenant.

8. **Recordation & Filing with Registry**. The Owner shall record this Environmental Covenant in the Land Records of Baltimore City within 30 days of the later of the Department and EPA's execution and delivery of this Environmental Covenant and shall send proof of the recording to the Department and EPA within 30 days of recordation. This Environmental Covenant shall be filed as soon as possible after execution in the Registry of Environmental Covenants maintained by the Department. This Environmental Covenant may be found electronically on the Department's website at:

www.mde.maryland.gov/programs/land/marylandbrownfieldvcp/pages/programs/landprograms/errp_brownfields/ueca.aspx

9. **Termination or Modification**. This Environmental Covenant runs with the land unless terminated or modified in accordance with § 1-808 or § 1-809 of the Environment Article, Ann. Code of Md. (2013 Repl. Vol.). The rights and obligations set forth herein shall inure to and be binding on the successors and assigns to this Environmental Covenant. The then-current owner agrees to provide EPA and the Department with written notice of the pendency of any proceeding that could lead to a foreclosure referred to in § 1-808(a) (4) of the Environment Article, Ann. Code of Md. (2013 Repl. Vol.), within seven calendar days of the owner's becoming aware of the pendency of such proceeding. The then-current owner shall provide EPA and the Department written notice within 30 days after each conveyance of an interest in any portion of the Property. Such written notice shall include the name, address and telephone numbers of the transferee to whom such interest is conveyed.

10. **EPA's Address**. Communications with EPA regarding this Environmental Covenant shall be sent to: Office of Remediation (3LC20), Land and Chemicals Division, U.S. Environmental Protection Agency, 1650 Arch Street, Philadelphia, PA 19103.

11. **The Department's Address**. Communications with the Department regarding this Environmental Covenant shall be sent to: Registry of Environmental Covenants, Maryland Department of the Environment, Land Management Administration, Land Restoration Program, 1800 Washington Blvd., Baltimore, MD 21230.

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12. **Administrative Record**. The Administrative Record pertaining to the remedy selected by EPA in the FDRTC is located at the United States Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, PA 19103. In addition, records pertaining to the remedy selected by EPA in the FDRTC are maintained by the Department at Registry of Environmental Covenants, Maryland Department of the Environment, Land Management Administration, Land Restoration Program, 1800 Washington Blvd., Baltimore, MD 21230.

13. **Enforcement.** This environmental covenant shall be enforced in accordance with § 1-810 of the Environment Article, Ann. Code of Md. (2013 Repl. Vol.).

14. **Compliance Reporting**.

Within 21 days after written request by the Department or EPA, the then current owner of the Property shall submit, to the Department, EPA and any Holder listed in Paragraph 3, written documentation stating whether or not the activity and use limitations set forth in Paragraph 5 of this Environmental Covenant are being abided by. In addition, within 21 days after any of the following events: a) transfer of title of the Property or of any part of the Property affected by this Environmental Covenant, b) becoming aware of noncompliance with Paragraph 5, and c) an application for a permit or other approval for any building or site work that could affect contamination on any part of the Property, the then current owner will send a report to the Department, EPA and any Holder. The report will state whether there is compliance with Paragraph 5. If there is noncompliance, the report will state the actions that will be taken to assure compliance.

15. **Severability.**

The paragraphs of this Environmental Covenant shall be severable and should any part hereof be declared invalid or unenforceable, the remainder shall continue in full force and effect between the parties.

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IN WITNESS WHEREOF, the parties hereto have caused this Environmental Covenant to be executed and delivered as of the day and year first above written.

ACKNOWLEDGMENTS by Grantor/Owner, any Grantee(s)/Holder(s), the Department and EPA, in the following form:

ATTEST:

Duke Baltimore LLC,

By: Duke Realty Limited Partnership

By: Duke Realty Corporation

Grantor/Owner/Grantee/Holder

Date: Nov. 10, 2016

By: _____
Name: J. Samuel O'Briant
Title: Exec. V.P.

STATE OF GEORGIA
~~COMMONWEALTH OF PENNSYLVANIA~~)
)
COUNTY OF Gwinnett) SS:

On this 10th day of November, 2016 before me, the undersigned officer, personally appeared J. Samuel O'Briant, who acknowledged herself/himself to be the person whose name is subscribed to this environmental covenant, and acknowledged that s/he freely executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Kim Martenn
(Name of notary public typewritten or printed)
Notary Public

KIM MARTENN NOTARY PUBLIC GWINNETT COUNTY EXPIRES GEORGIA Jan. 9, 2017

My commission expires: 1/09/2017

Environmental Covenant
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APPROVED by Maryland Department of the Environment
Land Management Administration,
Agency and Holder/Grantee

Date: January 27, 2017

By: Hilary Miller
Hilary Miller
Director
Land Management Administration
Maryland Department of the Environment

STATE OF MARYLAND)
)
COUNTY OF BALTIMORE) SS:

On this 27th day of January, 2017, before me, the undersigned, personally appeared Hilary Miller, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that she executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

(*Name of notary public typewritten or printed*) Melissa L. Allen
Notary Public

My commission expires: June 17, 2017

Approved for form and legal sufficiency

This 23rd day of January, 2017

Mari Lee
Maryland Assistant Attorney General

This is to certify that the within instrument was prepared under the supervision of the undersigned, an attorney duly admitted to practice before the Court of Appeals of Maryland.

James B. Witkin
James Witkin

Environmental Covenant
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APPROVED, by United States Environmental Protection Agency, Region III

Date: February 22, 2017

By: Catherine A. Libertz
Catherine A. Libertz
Acting Director
Land and Chemicals Division
United States Environmental Protection Agency
Region III

COMMONWEALTH OF PENNSYLVANIA)
)
COUNTY OF PHILADELPHIA) SS:

On this 22ND day of February, 2017, before me, the undersigned, personally appeared Catherine A. Libertz, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that she executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
PATRICIA J. SCHWENKE, Notary Public
City of Philadelphia, Phila. County
My Commission Expires August 14, 2018

Patricia J. Schwenke
(*Name of notary public typewritten or printed*)
Notary Public

My commission expires: August 14, 2018

Environmental Covenant
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EXHIBIT A

Complete Metes and Bounds Description of the Property

Area B – Sub-parcel B-1
Provided by Bowman Consulting – 9/3/14

DESCRIPTION
PART OF LOT 3
PROPERTY OF DUKE BALTIMORE LLC
WARD 26, SECTION 01, BLOCK 6874A

BEING a parcel of land lying on Holabird Avenue in Baltimore City, Maryland and being part of those lands granted and conveyed from General Motors Corporation to Duke Baltimore LLC by Deed dated January 25, 2006 and recorded among the Land Records of Baltimore, Maryland in Liber 7313 at Folio 272, said property also being part of Lot 3 as shown on a plat of subdivision dated January 18, 2008 entitled "Subdivision Plan – Duke Properties – Broening Highway and Holabird Avenue" recorded among the aforesaid Land Records as Plat Number FMC 4005, and all being more particularly described as follows, with bearings referenced to Baltimore City Datum:

6874

BEGINNING at a point on the southern right-of-way line of Holabird Avenue (a variable width public street) distant North 87°21'12" East, 2365.51 feet from a capped iron rod found at the intersection of the southernmost side of Holabird Avenue with the easternmost side of the CSX Corporation right-of-way at the beginning point of Parcel 2 of Tract II of those lands granted and conveyed in the abovementioned deed recorded in Liber 7313 at Folio 272, also being the northwesternmost corner of Lot 2 as shown on the above-referenced plat, thence from said point of beginning leaving the southernmost right-of-way line of Holabird Avenue and running with part of the easternmost side of Lot 3 as shown on said plat the following three (3) courses and distances, as now surveyed:

1. South 04°12'32" East, 241.43 feet to a point 0.79 feet north of a pipe found, thence
2. South 00°34'32" East, 99.43 feet to a point, thence
3. South 04°12'32" East, 157.78 feet to a point, thence leaving the easternmost side of Lot 3 and running so as to cross said lot the following course and distance:
4. South 87°13'21" West, 683.44 feet to a point on the common line between Lot 3 and Lot 2A as shown on the above-referenced plat, thence running with and binding on part of said westernmost lot line the following course and distance:
5. North 02°46'38" West, 492.97 feet to a point on the abovementioned southern right-of-way line of Holabird Avenue, thence running with and binding on part of said right-of-way line the following four courses and distances:
6. North 87°11'42" East, 241.42 feet to a point, thence
7. 36.30 feet along the arc of a curve to the left having a radius of 247.15 feet and an interior angle of 08°24'54" with a chord bearing North 82°59'14" East, 36.27 feet to a point of reverse curvature, thence
8. 33.95 feet along the arc of a curve to the right having a radius of 231.22 feet and an interior angle of 08°24'49" with a chord bearing North 82°59'11" East, 33.92 feet to a point, thence
9. North 87°11'42" East, 365.87 feet to the place of beginning; containing 337,850 square feet or 7.7560 acres of land, more or less.

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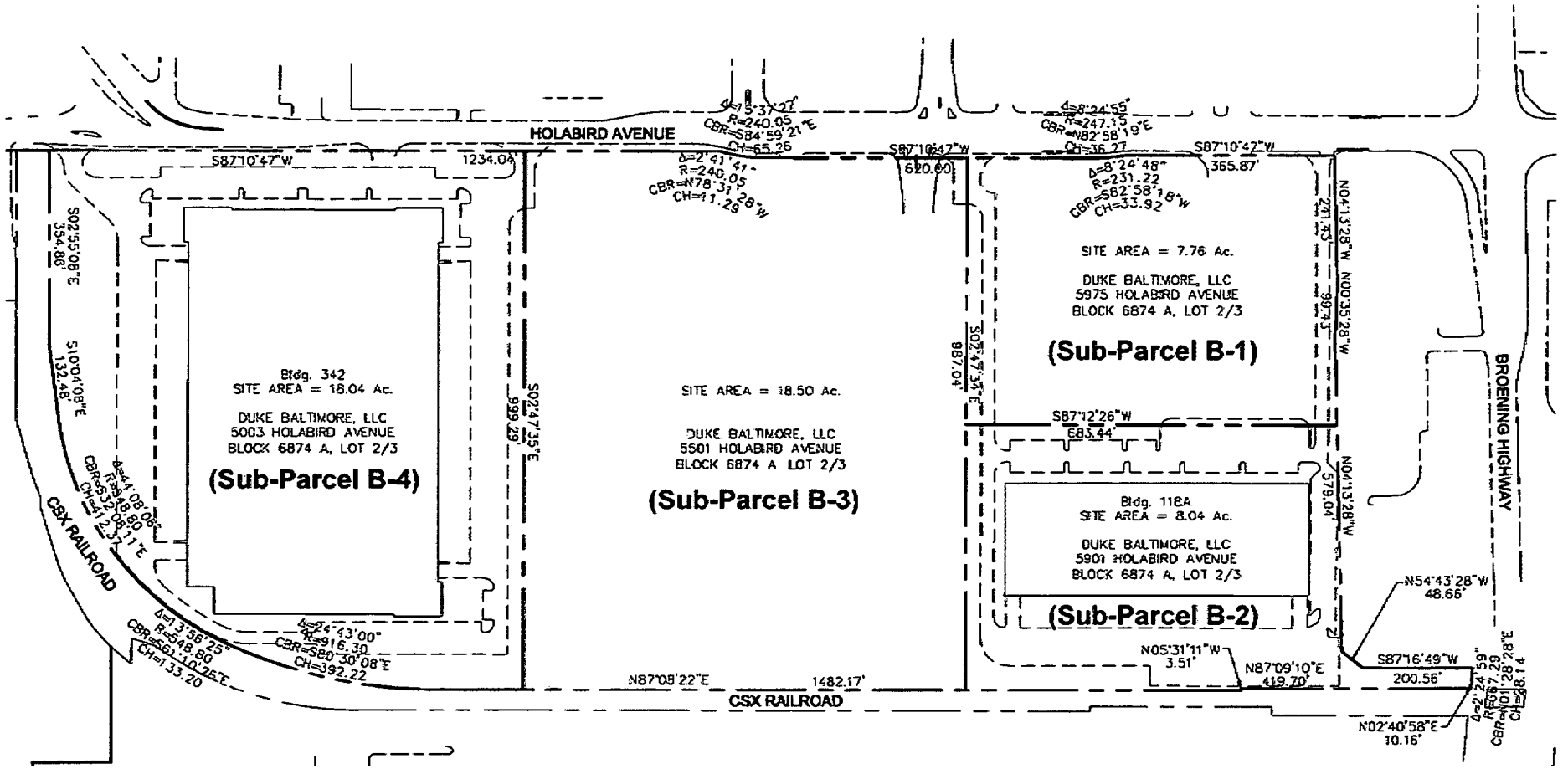
EXHIBIT B

Map of the Property



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EXHHIBIT C

Risk Management Plan

**L&B 5766887v1/10445.0001

RISK MANAGEMENT PLAN

FOR:
AREA B - SUB-PARCEL B-1
CHESAPEAKE COMMERCE CENTER
(FORMER GENERAL MOTORS BALTIMORE ASSEMBLY PLANT)

LOCATED AT:
5975 HOLABIRD AVENUE
BALTIMORE, MARYLAND 21224

PREPARED FOR:
DUKE BALTIMORE, LLC
111 S. CALVERT STREET, SUITE 1805
BALTIMORE, MD 21202

PREPARED BY:
HULL & ASSOCIATES, INC.
300 BUSINESS PARK DRIVE, SUITE 320
PITTSBURGH, PENNSYLVANIA 15205

SEPTEMBER 2014

HULL

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LIST OF ACRONYMS

ATSDR	Agency for Toxic Substances Diseases Registry
CAP	Corrective Action Plan
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
COC	Certificate of Completion
COPC	Chemical of Potential Concern
EMMDL	Environmental Media Management Decision Level
ESA	Environmental Site Assessment
Facility	Former GM Baltimore Assembly Plant
FSP	Field Sampling Plan
GM	General Motors Corporation
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response Standard
HI	Hazard Index
IRM	Interim Remedial Measure
MDE	Maryland Department of the Environment
mg/kg	Milligrams per Kilogram
NIOSH	National Institute for Occupational Safety and Health
O&M	Operation and Maintenance
OSHA	Occupational Safety and Health Administration
PAHs	Polynuclear Aromatic Hydrocarbons
PPE	Personal Protective Equipment
QAPP	Quality Assurance Project Plan
RAP	Response Action Plan
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RFI	RCRA Facility Investigation
RMP	Risk Management Plan
TCLP	Toxicity Characteristic Leaching Procedure
µg/L	Micrograms per Liter
U.S. EPA	United States Environmental Protection Agency
VCP	Voluntary Cleanup Program
VOCs	Volatile Organic Compounds

1.0 INTRODUCTION

1.1 Background

Hull & Associates, Inc. (Hull), on behalf of Duke Baltimore, LLC (Duke), conducted a RCRA Facility Investigation (RFI)/Phase II Environmental Site Assessment (Phase II) and Corrective Measures Study (CMS) for Area B of the Chesapeake Commerce Center (Facility). Chesapeake Commerce Center is also known as the Former General Motors (GM) Baltimore Assembly Plant and has been referred to as such in previous reports. The Facility occupies approximately 182 acres of land located at 2122 Broening Highway in Baltimore, Maryland. The Facility is industrial property that formerly housed automobile assembly operations from 1936 until plant closure on May 13, 2005. Area B Sub-parcel B-1 (the Site) consists of a 7.76-acre portion of the overall 52-acre Area B site located at 5975 Holabird Avenue. The locations of the Facility, Area B and Sub-parcel B-1 are shown on Figure 1.

Duke purchased the Facility from GM in January 2006 and subsequently performed assessment and remediation activities at the site in accordance with both federal and state regulatory programs. Duke concurrently met the requirements for the Resource Conservation and Recovery Act (RCRA) Corrective Action process, administered by the United States Environmental Protection Agency (U.S. EPA), and Maryland's Voluntary Cleanup Program (VCP), administered by the Maryland Department of the Environment (MDE). As such, all administrative and substantive elements of the RCRA Corrective Action and VCP were conducted under one integrated program.

1.2 Historical Assessment Activities

1.2.1 Phase I and II Assessments

In May 2006, Hull conducted a Phase I Environmental Site Assessment (Phase I) for the Facility. The Phase I identified Recognized Environmental Conditions (RECs) and potential Interim Remedial Measures (IRMs). In June 2006, Hull prepared a RCRA Facility Investigation/Phase II Environmental Site Assessment (RFI/Phase II) Work Plan which provided a summary of historical analytical data collected at the Facility, an initial understanding of the nature and extent of contamination, and scopes of work for conducting IRMs and further assessing the RECs. The RFI Work Plan was approved by U.S. EPA and MDE in August 2006. Quality assurance/quality control procedures to be used during implementation of the RFI Work

Plan were described in a Quality Assurance Project Plan (QAPP) that was approved by U.S. EPA in June 2006.

Hull conducted a RCRA Facility Investigation/Phase II Environmental Site Assessment (RFI/Phase II) between August and November 2006. In general, the purpose of the RFI/Phase II was to:

1. determine whether a release of hazardous waste/constituents had occurred at the RECs previously identified;
2. characterize the source(s) of releases and determine the nature and extent of constituents in environmental media to the extent necessary to support risk assessment activities;
3. identify current and potential migration pathways, and potential human and environmental receptors under current and reasonably expected future land use;
4. assess potential risk to human health and the environment associated with releases of hazardous waste/constituents to the environment; and
5. conclude whether final corrective measures were necessary to mitigate unacceptable hazard or risk, if any, posed to human health and the environment under current and reasonably expected future land use.

Field activities, sampling, and quality assurance/quality control activities were conducted consistent with the approved RFI/Phase II Work Plan and QAPP. RFI/Phase II investigation activities included soil boring installation, collection and laboratory analysis of soil samples, monitoring well installation, collection and laboratory analysis of groundwater samples, test pit installation, and risk assessment.

Based on the results obtained from RFI/Phase II activities, Hull conducted a risk assessment consistent with U.S. EPA guidelines such as the *Risk Assessment Guidance for Superfund* and Maryland Department of the Environment *Voluntary Cleanup Program Guidance* and in accordance with the *Revised Risk Evaluation Methodology: Comparison Matrix of Region III RCRA Corrective Action and Maryland Department of the Environment Voluntary Cleanup Programs* (Hull, 2006) submitted to representatives of U.S. EPA and MDE *via* letter on April 28, 2006. The risk assessment was conducted to:

1. Determine the chemicals of potential concern (COPCs) for total soils (surface and subsurface) and groundwater;

2. Assess the complete and potentially complete exposure pathways *via* a quantitative or semi-quantitative evaluation of hazard and/or risk;

3. Develop Environmental Media Management Decision Levels (EMMDLs) to aid in the redevelopment of the Site;

4. Quantify the potential exposures to identified receptor populations *via* the complete exposure pathways including direct contact with soil and groundwater; and

5. Estimate potential non-cancer hazards and cancer risks associated with direct contact exposures to soil and groundwater containing the COPCs for each identified receptor population, as appropriate.

The risk assessment evaluated four receptor populations with respect to future commercial or industrial land use: on-site workers, child and youth visitors and construction/excavation workers. Complete and potentially complete exposure pathways include direct contact with soil, direct contact with groundwater (construction/excavation worker only), and indoor air (potential volatile emissions from soil and/or groundwater to indoor air). In addition, exposure pathways consistent with the maximum beneficial use of groundwater within the shallow and deep water-bearing zones were evaluated. Groundwater concentrations of COPCs detected in the shallow aquifer within the area (i.e., Patapsco Formation) were evaluated with respect to surface water recharge and conservative modeled concentrations of COPCs in the deep aquifer within the area (i.e., Patuxent Formation) were evaluated with respect to groundwater use as industrial process water. Potable use of groundwater was not evaluated because the Facility and surrounding area are supplied with potable water from the City of Baltimore's public water supply system, and no potable use of groundwater is known within the region.

Concentrations of volatile organic compounds (VOCs) and lead in soil and VOCs in groundwater were evaluated semi-quantitatively with respect to potentially complete vapor intrusion pathways and direct contact with soil containing lead *via* comparison to site-specific EMMDLs. The EMMDLs are numeric criteria used to make soil management decisions and site redevelopment decisions, if necessary, to preclude or mitigate future human exposures to environmental media containing concentrations of chemicals of potential concern.

Based on the results of the risk assessment, soil management in several areas of concern in Area B was required due to lead concentrations in soil that exceed the chemical-specific EMMDL. Assessment of the distribution of lead exceeding the EMMDL is complicated given the heterogeneity of the fill materials across Area B and the apparent variability of lead distribution

within the fill (e.g., immediately adjacent borings display significantly different lead concentrations). In addition to areas of soil exceeding the EMMDL for lead, the risk assessment identified one limited area of soil with VOCs exceeding EMMDLs based on the potential for volatile emissions from soil to impact indoor air in future buildings, and another limited area of soil with benzo(a)pyrene at concentrations which exceed MDE hot spot criteria. Finally, two areas displayed Toxicity Characteristic Leaching Procedure (TCLP)-lead concentrations in excess of the TCLP-lead limit. It is important to note that the TCLP-lead limit is designed to represent a maximum allowable limit that may be leached from a waste material under simulated landfill conditions for the purpose of waste characterization and does not represent an allowable concentration with respect to a human health endpoint

Given that the approved Response Action Plan for Area B includes construction of engineering controls such as buildings, roads and parking areas over a majority of the area, and exposed areas (greenspaces) are to be covered with clean soils, exposures of the on-site worker and child and youth visitors receptor populations to potentially contaminated soil via direct contact will be precluded. Therefore, these incomplete exposure pathways were not evaluated in the risk assessment due to the implementation of the presumptive remedy. However, potential direct contact exposures to soil and groundwater by the construction/excavation worker during future intrusive activities were considered to be complete exposure pathways and were quantitatively evaluated. The quantitative evaluation for direct contact with soil by the construction/excavation worker receptor population, excluding lead, did not indicate unacceptable hazard or risk. The quantitative evaluation for direct contact with groundwater by the construction/excavation worker receptor population indicated unacceptable hazard and, therefore, risk management activities are necessary to address unacceptable hazard associated with this pathway. As discussed in subsequent sections, direct contact exposures to construction/excavation workers during initial site remediation and redevelopment activities were managed through a site-specific Health and Safety Plan (HASP). Potential direct contact exposures to future construction/excavation workers during activities conducted some time after the initial redevelopment (e.g., utility maintenance) will be managed through implementation of this Risk Management Plan.

1.2.2 Remedial Action/Corrective Measures Implementation and Certification Reporting

In February 2007, Hull submitted the *RCRA Facility Investigation / Phase II Environmental Site Assessment and Corrective Measures Study* for Area B to U.S. EPA and MDE. Following

receipt of agency comments on the RFI/Phase II report for Area A, the Area B report was revised and resubmitted to MDE and U.S. EPA in March 2007. The revised report is entitled *"RCRA Facility Investigation / Phase II Environmental Site Assessment and Corrective Measures Study (Revision 1.0)"* (the RFI/CMS Report). The CMS portion of the RFI/CMS report, which was developed principally for U.S. EPA, identified potential remedial actions to address those Recognized Environmental Conditions (RECs) in Area B that exceed risk-based clean-up goals. In July 2007, a Response Action Plan (RAP) was developed to elaborate on components of the proposed remedy that were summarized in the RFI/CMS Report. The RAP was developed in coordination with site redevelopment plans and provided further detail on the remedial strategy first discussed in the RFI/CMS report. The RAP also addressed applicable CMI provisions of the RCRA *Corrective Action Plan* ((CAP), U.S. EPA, 1994). The RAP was prepared for implementation over the entire 52-acre Area B site. Since approval of the RAP on July 27, 2007, Duke divided Area B into four sub-parcels (B-1, B-2, B-3 and B-4). The outline of each sub-parcel is shown on Figure 2. Because RAP completion will be achieved in a progressive sequence, Duke submitted individual VCP applications for each of the four sub-parcels so that an individual Certificate of Completion (COC) can be requested for each sub-parcel as construction activities are completed. This RMP has been written to apply to Area B Sub-parcel B-1.

As described in the RAP, several remedial activities/corrective measures have been implemented during the course of redevelopment in order to meet applicable standards across Area B. The remedial activities that were conducted specifically on Sub-parcel B-1 include the following:

1. Soils exceeding the TCLP-lead limit were excavated and disposed off-site at an approved treatment/disposal facility.

2. Direct contact exposures to soil by the on-site worker, child visitor and youth visitor have been precluded by the construction of engineering controls and placement of clean cover soils. The engineering controls include buildings and associated parking areas and roadways. Greenspace areas are covered with a minimum of two feet of clean soil cover placed over a geotextile marker fabric.

3. Direct contact exposures to construction/excavation workers during initial site remediation and redevelopment activities were managed through a site-specific Health and Safety Plan (HASP). Potential direct contact exposures to future construction/excavation workers during activities conducted some time after the initial redevelopment (e.g., utility maintenance) will be managed through implementation of this Risk Management Plan.

4. Institutional controls restricting the use of the Site to commercial/industrial land use will be implemented. Unrestricted residential land use, including single and multiple family dwellings, will be prohibited under the terms of this use restriction.

5. Institutional controls restricting the use of groundwater underlying the Property for any purpose will be implemented.

Remediation and construction activities in Sub-parcel B-1 were completed in September 2014. Duke and Hull submitted a certification report for Sub-parcel B-1 in September 2014. A site plan for Sub-parcel B-1 summarizing paved areas and greenspace areas is shown on Figure 3.

1.2.3 Summary of Post-Remedy Hazards and Risks

Although the remedial activities described above preclude current exposures to environmental media containing COPCs above applicable standards, soil containing lead and/or PAHs in exceedance of applicable standards and impacted groundwater remain at Area B. It is possible that impacted soil may be encountered during intrusive activities that breach either the two-foot clean soil cover in greenspaces or extend below hardscape such as parking lots or building slabs. Therefore, risk management provisions may be required to protect construction/excavation workers from exposures to COPCs in soil at the Site *via* direct-contact during intrusive redevelopment or maintenance activities. Additionally, COPCs at concentrations above health-based direct contact standards may be contacted in the event that groundwater is encountered during construction/excavation activities. Although exposures to groundwater *via* direct-contact, if they occur, are expected to be brief and intermittent, controlling these exposures through this RMP will add a further level of protection to future construction/excavation workers who may be exposed to groundwater *via* direct-contact.

1.3 Purpose of the Risk Management Plan

This RMP includes the elements required by the Environmental Management Systems International Standard ISO 14001 outline as well as other supporting information related to the Site's environmental condition, descriptions of potential risks/hazards associated with soils at the Site, descriptions of procedures required for soil characterization and management, and other applicable information designed to inform future workers of Site conditions. This RMP will also serve as a record-keeping device to document that future workers are notified of, and have acknowledged, the Site conditions so that appropriate risk reduction actions can be conducted.

The RMP includes the final layout of buildings, utilities and greenspaces upon completion of the development. This RMP also describes the measures to be taken to effectively eliminate or reduce the potential hazard or risk posed to Site workers following the completion of remedial activities and redevelopment and provides descriptions of activities required to maintain the remedy components. The RMP may only be modified or terminated upon mutual agreement of the Owner and the Maryland Department of the Environment. A summary of the elements required by the ISO 140001 standards and a summary of the locations where each element has been addressed in the RMP is located in Table 1.

2.0 SUMMARY OF POTENTIAL HEALTH RISKS ASSOCIATED WITH COPCs

2.1 General

As discussed in Section 1.2.3, it is possible that soil containing concentrations of COPCs that exceed worker safety standards may be encountered during intrusive activities. Impacted groundwater may also be encountered during subsurface activities that are conducted at depths below the water table. This section contains a discussion of the COPCs that exceed or significantly contribute to an exceedance of an applicable standard that may be encountered at the Site. The intent of this section is to include a brief discussion of the nature, type, and concentration of each COPC in soil or groundwater and a few potential health effects that may be caused by exposure to elevated levels of each COPC.

This RMP does not include a hazard analysis for each task that may be completed at the Site. The Contractor (i.e., the entity performing work which may require RMP implementation) must provide a HASP(s) for each site-specific task and phase of work which may result in the implementation of the provisions for the RMP. It is the responsibility of the Contractor to show proof of applicable training or licensing that may be required by federal, state or local laws and regulations including, but not limited to, Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) 40 hour training. Each worker will need to review this document and sign the worker acknowledgement form located in Appendix A of this document.

2.2 Chemical Hazards

The routes of exposure through which hazardous chemicals may potentially be encountered during intrusive activities at the Site include:

1. inhalation of volatile or particulate emissions in ambient air;
2. dermal contact with and/or adsorption of contaminants contained in soil and/or groundwater;
3. ingestion of contaminants contained in soil and/or groundwater (such as may occur through poor personal hygiene and decontamination practices).

A discussion of COPCs that exceed or significantly contribute to an exceedance of applicable standards that may be encountered at the Site and general chemical class descriptions and potential associated health impacts are discussed in Section 2.2.1 and Section 2.2.2, below. There are a variety of sources regarding hazard information for specific chemicals in an occupational setting including National Institute for Occupational Safety and Health (NIOSH) Pocket Guide to Chemical Hazards and OSHA Occupational Health Guidelines for Chemical Hazards. Contact information for NIOSH and example chemical data available through NIOSH are included in Appendix B. It is the Contractor's responsibility to ensure that activities conducted at the Site do not result in exposure of the workers to levels of hazardous chemicals in exceedance of applicable federal, state, and local laws and regulations.

2.2.1 Metals

As discussed in Section 1.2.1; soil containing lead at concentrations above 1,000 mg/kg is known to be located beneath engineering controls across Area B. However, due to the heterogeneity of the fill materials at the Site and the apparent variability of lead distribution within the fill (e.g., immediately adjacent borings display significantly different lead concentrations), the locations where workers could encounter lead through contact with subsurface soil throughout Area B are not known with absolute certainty and it is possible that intrusive activities may not encounter soils with elevated lead concentrations. Nonetheless, precautions should be taken to minimize or eliminate exposures to elevated levels of lead due to the potential for adverse health effects. According to the NIOSH Pocket Guide (2005) to chemical hazard, exposure to elevated levels of lead may cause weakness, lassitude (weakness, exhaustion), insomnia, facial pallor, anorexia, weight loss, malnutrition; constipation, abdominal pain, colic, anemia, gingival lead line, tremor, paralysis of the wrist and ankles, encephalopathy, kidney disease, irritation of the eyes and hypotension.

In addition to lead in soils, two additional metals are found in groundwater at concentrations exceeding health-based levels. Antimony and vanadium were both detected in groundwater at concentrations that are driving an exceedance of the noncancer hazard goal (i.e., Hazard Index = 1). Antimony was detected in four of 16 groundwater samples (25% detection frequency) at concentrations ranging from 4.4 ug/L to 356 ug/L. Vanadium was detected in two of 13 groundwater samples (15% detection frequency) at concentrations ranging from 13.2 ug/L to 299 ug/L. It is important to note that these metals were detected in groundwater samples

collected from soil borings and, therefore, suspended soil particles within the samples may result in an overestimate of the concentration of metals actually dissolved in groundwater. Although these COPCs were detected in limited locations across Area B, exposures to groundwater containing these COCs should be avoided. The NIOSH Pocket Guide (2005) notes that exposure to antimony may result in irritation to the eyes, skin, nose, throat, and mouth, cough, dizziness, headache, nausea, vomiting, diarrhea, stomach cramps, insomnia, anorexia, and/or the inability to smell properly. The NIOSH Pocket Guide (2005) includes potential health effects resulting from exposure to vanadium pentoxide dust or fumes (which are not likely to be the species present in groundwater at Area B) including irritation to the eyes and throat; green tongue, metallic taste, cough, fine rales (abnormal respiratory sounds characterized by fine crackles), wheezing, bronchitis, dyspnea (breathing difficulty), and/or eczema.

2.2.2 Polynuclear Aromatic Hydrocarbons (PAHs)

According to the Agency for Toxic Substances Disease Registry (ATSDR) public health statement for PAHs (1995), PAHs are a group of chemicals that are formed during the incomplete burning of coal, oil, gas, wood, garbage, or other organic substances, such as tobacco and charbroiled meat. PAHs generally occur as single compound or complex mixtures of compounds including acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(e)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(j)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, phenanthrene and pyrene. PAHs usually occur naturally; however, not as the mixtures found in combustion products. Others are contained in asphalt used in road construction. They can also be found in substances such as crude oil, coal, coal tar pitch, creosote, asphalt and roofing tar.

As discussed in Section 1.2.1, soil collected from one sampling location (7B6) in sub-parcel B-3 was identified as a hot spot in accordance with MDE criteria. Constituents detected in the sample included benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, dibenz(ah)anthracene and indeno(1,2,3-cd)pyrene, however, the concentration of benzo(a)pyrene contributed most significantly to the exceedance of MDE hot spot criteria. Soil data collected during the RFI/Phase II indicates that benzo(a)pyrene was detected at a frequency of 30% across Area B, at concentrations ranging from 0.089 mg/kg to 48 mg/kg.

However, it is important to note that elevated concentrations of benzo(a)pyrene were detected infrequently at Area B. Of the 112 soil samples analyzed for benzo(a)pyrene, three samples contained benzo(a)pyrene at a concentration greater than 10 mg/kg and the site-specific risk assessment conducted for Area B did not identify any unacceptable risk posed to construction/excavation workers by exposure to soil containing benzo(a)pyrene (excluding the hot spot described above). The NIOSH Pocket Guide (2005) publishes information on PAHs in the form of coal tar pitch volatiles. Health effects attributable to exposure to PAHs include dermatitis and bronchitis. Several PAHs, including benzo(a)pyrene have been identified by U.S. EPA as probable human carcinogens (U.S. EPA, 2007).

3.0 RISK MANAGEMENT PROVISIONS

3.1 Provisions for Implementation of the RMP

The RMP is to be implemented whenever activities conducted at the Site may result in the exposure of workers to subsurface soils or groundwater that may contain COPCs in exceedance of applicable standards.

3.2 RMP Implementation for Soil

MDE will be appropriately notified in advance of conducting specific intrusive activities. Pursuant to the Certificate of Completion, notifications will be provided to the Chief, State Assessment and Remediation Division, Land Management Administration.[1] All personnel who may come in contact with soils currently located below two feet in depth within the landscaped areas, or at any depth under the hardscape engineering controls, should take steps to minimize exposure by wearing appropriate personal protective equipment (PPE) such as gloves and practice good hygiene thereby minimizing the possibility of exposure through incidental ingestion or dermal contact. The supervisor(s) overseeing the work is responsible for implementing a HASP(s) that meets all federal, state and local laws and regulations for each task that may result in exposure of workers to soil containing COPCs in exceedance of applicable standards.

3.3 RMP Implementation for Groundwater

MDE will be appropriately notified in advance of conducting specific intrusive activities. Pursuant to the Certificate of Completion, notifications will be provided to the Chief, State Assessment and Remediation Division, Land Management Administration. The provisions for the management of potentially impacted groundwater will be applied to future intrusive activities which are conducted within the entire Area B parcel. All personnel who may come in contact with groundwater during intrusive activities are expected to minimize exposures to potentially impacted groundwater through the use of PPE and groundwater management activities. The supervisor(s) overseeing the work is responsible for implementing a HASP(s) that meets all

[1] Notify MDE 30 days in advance of any planned intrusive activity that will breach an engineering control and/or will be conducted at a depth that will reach groundwater. For unplanned emergency excavation activities, notify MDE within 24 hours following initiation of the emergency.

federal, state and local laws and regulations for each task that may result in exposure of workers to groundwater containing COPCs in exceedance of applicable standards.

3.4 Management of Impacted Environmental Media

In the event that potentially impacted environmental media is encountered, it will be necessary to manage the impacted material in a manner that does not compromise the integrity of the remedy. It is noted that the Division Chief of the Voluntary Cleanup Program will be appropriately notified in advance of conducting specific intrusive activities, as per the requirements of the Certificate of Completion issued by MDE.

3.4.1 Soil

In order to ensure that the Site is returned to a condition that complies with applicable standards, potentially impacted soil encountered during intrusive activities shall be managed as described below:

3.4.1.1 Reuse of Soils within Landscaped Areas

All soil excavated from the upper two feet of landscaped areas should be stockpiled separately from any soils excavated from a depth greater than two feet below ground surface. Soil that is stockpiled from the upper two feet of landscaped areas may be used at any depth at any locations on the Site. Soil that is currently located below the geotextile fabric (i.e., at depths greater than two feet bgs) must be replaced under an appropriate engineering control such as hardscape or clean soil cover underlain by geotextile marker fabric.

3.4.1.2 Reuse of Soils below Hardscape

All soil that is currently located below hardscape such as building slab or a parking lot may be reused on-site as backfill below an appropriate engineering control such as hardscape or clean soil cover underlain by geotextile marker fabric.

3.4.1.3 Management of Vegetation within Landscaped Areas

Duke is required by the City of Baltimore to plant over 2,000 trees on the overall 182-acre development (i.e., Facility-wide) as part of the City's reforestation efforts. The preferred landscaping method within Area B will be to limit plantings to trees with shallow root systems that will not penetrate the geotextile marker layer. However, a limited

number of larger trees with root systems that may extend below two feet bgs may ultimately be planted at the Site.

For small trees or shrubs that are expected to have root balls contained within the upper two feet of soil above the geotextile fabric, all soil management should be conducted in accordance with the procedures for intrusive activities within landscaped areas detailed in Section 3.4.1.1, above. The root ball of the tree or shrub should be placed in the planting hole at a depth above the geotextile fabric and the excavated area should be backfilled with a mixture of one-half parts approved soil and organic soil conditioner, as shown on Figure 4.

In the event that a larger tree needs to be planted with a root ball that extends greater than two feet, all soil management must be conducted in accordance with intrusive activities that may result in contact with potentially impacted soil as described in Sections 3.4.1.1 and 3.4.1.2, above. The root ball of the tree or shrub should be placed in the planting hole and the planting hole should be backfilled with a mixture of one-half parts approved soil and organic soil conditioner, as shown on Figure 5. In the event that a tree with roots that penetrate the geotextile fabric must be replaced in the future, it should be assumed that potentially impacted soil may be encountered below two feet bgs and that soil encountered at depth should be replaced at a depth greater than two feet.

3.4.1.4 Disposal of Soil at an Off-Site Facility

Soils may be excavated and removed from the Site provided that they are properly characterized per applicable federal, state and local laws and regulations and in accordance with the requirements of the disposal facility.

In the event excavated soils are stockpiled, surface water will be diverted from the piles and the stockpiles managed to prevent runoff and dust generation through the use of covers or other measures. All soils excavated from a depth greater than two feet will be placed on visqueen to insure that contamination (if present) will not impact the surface soils located on the Site. In addition, soil stockpiling activities, storm water control measures and dust control measures need to follow applicable federal, state and local laws and regulations.

3.4.2 Groundwater

Intrusive activities may or may not encounter groundwater depending on the depth of the activities and variations in the depth to the water table across the Site. In the event that intrusive activities encounter groundwater that accumulates within property excavations, the following management activities will be implemented:

1. The Owner shall be notified of the accumulated water and any proposed management methods immediately. Work will not proceed in the area if standing water remains;

2. Water may be either (1) tested according to the procedures discussed under pre-characterization (see Section 3.1.1), or (2) assumed to be contaminated and managed appropriately;

3. If groundwater exceeds applicable screening levels or is simply assumed to be contaminated, worker safety will be provided by provisions within the Health and Safety Plan associated with the work activity;

4. Water will be pumped from the area and containerized or disposed before work can proceed;

5. Water may be containerized within temporary storage tanks onsite, pumped directly from excavations into a vacuum truck or other equipment and transported to an appropriate off-site disposal or treatment facility, or pumped directly to sanitary or storm sewers under appropriate permits and in accordance with local, state and federal rules and regulations;

6. Containerized water placed into temporary onsite storage tanks will ultimately be disposed or treated off-site at an appropriate facility, or pumped directly to sanitary or storm sewers under appropriate permits and in accordance with local, state and federal rules and regulations;

7. Daily logs will be maintained that will identify the quantity and origin of all water managed during intrusive activities; and

8. All water management, treatment, disposal, etc. shall be conducted in accordance with applicable local, state and federal rules and regulations.

4.0 MAINTENANCE OF REMEDY

4.1 General

In general, applicable standards have been met at Area B through the implementation of institutional and engineering controls. The engineering controls (i.e., hardscape or clean cover soil) are passive remedies and, therefore, will not be subject to active operation requirements. A discussion of the requirements for maintenance of the engineering controls is located below.

4.2 Engineering Control Maintenance Requirements

Engineering controls in the form of hardscape and clean cover soils will be maintained across the Site to prevent direct contact exposures to onsite receptor populations. The Owner will adopt appropriate inspection and maintenance procedures for the engineering controls into the facility Operations and Maintenance plans. Hardscape such as parking areas and concrete slabs will be inspected annually in the fall. Landscaping crews will inspect greenspace areas for exposed marker fabric during routine maintenance activities such as mulch application, grass cutting and tree pruning. Formal greenspace inspections will take place during the fall concurrent with the hardscape inspections. Pursuant to the RAP, the Owner will notify MDE of any necessary repairs to hardscape or greenspaces within ten business days of discovering the condition requiring repair. The Owner will submit written findings from the annual fall inspections to MDE within ten business days of conducting the visual inspections. The written findings will include observations of the cover and actions taken in its maintenance or modification and a new Site Plan showing cover modifications, if necessary.

5.0 COMMUNICATIONS, RESPONSIBLE PARTIES, DOCUMENT CONTROL AND REPORTING

5.1 Communications and Notification Provisions

Flow charts describing the procedures for internal and external communications with respect to the RMP are shown on Figure 6. Notify MDE 30 days in advance of any planned intrusive activity that will breach an engineering control and/or will be conducted at a depth that will reach groundwater. For unplanned emergency excavation activities, notify MDE within 24 hours following initiation of the emergency.

5.1.1 Site Workers

The Owner is responsible for providing this RMP to site workers, employees, and subcontractors that perform subsurface activities at the Site. The supervisor for those performing work that may result in the implementation of the RMP is responsible for providing an applicable HASP and ensuring that activities conducted within Area B do not result in exposure of workers to levels of hazardous chemicals in exceedance of applicable federal, state, and local laws and regulations. Workers performing activities that may result in RMP implementation are required to review this document and sign the worker acknowledgement form located in Appendix A.

5.1.2 Tenants/Lessees

Tenants/Lessees are prohibited from making modifications to the property as a condition of the lease.

5.1.3 Emergency Response

The Site and surrounding area are serviced by local fire, police and emergency medical services that can be reached by phone via 911. Emergency response and contingency communication procedures will be outlined in the HASP associated with the intrusive activities.

5.2 Responsible Parties

As discussed previously, the Owner is responsible for ensuring that the RMP is implemented, as appropriate, and is responsible for maintenance of the document and supporting addenda, as needed. In addition, the Owner is responsible for ensuring that the annual inspection of the engineering controls is conducted and documented in accordance with the provisions located in

this RMP. The Owner may conduct internal audits and management review of this environmental management system at the Owner's discretion.

The supervisor(s) overseeing the work is responsible for providing and implementing a HASP(s) for each site-specific task and phase of work which may result in the implementation of the provisions for the RMP. It is the supervisor's responsibility to ensure that activities conducted within Area B do not result in exposure of the workers to levels of hazardous chemicals in exceedance of applicable federal, state, and local laws and regulations. It is the responsibility of the supervisor to show proof of applicable training or licensing that may be required by federal, state or local laws and regulations including, but not limited to, Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) 40 hour training. It is up to the discretion of the Owner to verify that all personnel conducting subsurface activities on the Site meet the requirements of all applicable federal, state, and local laws and regulations. The RMP may only be modified or terminated upon mutual agreement of the Owner and the Maryland Department of the Environment.

5.3 Reporting

Findings from the annual fall inspections will be recorded on the Inspection Documentation Form located in Appendix C. The annual inspection form describes the results of the inspection (e.g., integrity of the engineering controls) and type and location of any required actions. The Owner will notify MDE of any necessary repairs identified during the annual inspection within ten business days of discovering a condition requiring the repair of an engineering control(s). The notification to MDE will be conducted using the Inspection Documentation Form. The Owner will submit written findings from the annual inspections to MDE within ten business days of conducting the inspections. The written findings will be submitted to MDE as an attachment to a copy of the completed Inspection Documentation Form. In addition, the Owner will submit the Notification of Modification or Repair of Engineering Control Form in Appendix D, as well as any necessary supporting materials (e.g., amended site plan), to MDE upon completion of activities conducted to modify and/or repair an engineering control(s).

Outside of the annual inspection process, the Owner will notify MDE of necessary repairs identified at any time within ten business days of discovering a condition requiring the repair of an engineering control (e.g., routine inspection of a greenspace area identifies exposed geotextile marker fabric). In these instances, the Notification of Modification or Repair of

Engineering Control Form in Appendix D, as well as any necessary supporting materials, will be submitted to MDE upon completion of activities conducted to maintain and/or modify an engineering control(s).

The Owner will submit written findings from unplanned/emergency excavation activities to MDE within ten business days of completing the emergency excavation activities.

5.4 Document Control

The Owner is responsible for maintaining a copy of this RMP at the facility and is responsible for making the document available upon request. Inspection documentation (i.e., the Inspection Documentation Form in Appendix C) will be retained for a minimum period of five (5) years. Records relating to the notification of workers who may conduct work at Area B (i.e., the Worker Acknowledgement form in Appendix A) or records relating to modification or repair of engineering controls (e.g., Notification of Repair or Modification of Engineering Control in Appendix D), including revised Site Plans will be appended to the RMP and will be retained in perpetuity.

6.0 REFERENCES

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TABLES

RISK MANAGEMENT PLAN FOR AREA B - SUB-PARCEL B-1
CHESAPEAKE COMMERCE CENTER (FORMER GENERAL MOTORS CORPORATION BALTIMORE ASSEMBLY PLANT)
5975 HOLABIRD AVENUE, BALTIMORE, MARYLAND 21224

TABLE 1

REQUIRED COMPONENTS OF INTERNATIONAL STANDARDS ORGANIZATION ISO 14001 ENVIRONMENTAL MANAGEMENT SYSTEMS

HSE Element	Concept	Location of Element
General Requirements	The Owner has established and has outlined the procedures for documenting, implementing, maintaining and continually improving an environmental management system (i.e., the RMP) as part of an overall approach to support redevelopment of a former brownfield.	NA
HSE Policy	The RMP includes appropriate HSE elements and was developed to meet the following criteria: plan is appropriate to the nature, scale and environmental impacts of its activities, includes a commitment to continual improvement and prevention of pollution, includes a commitment to comply with applicable legal requirements and with other requirements to which the organization subscribes which relate to its environmental aspects, provides the framework for setting and reviewing environmental objectives and targets, is documented implemented and maintained, is communicated to all persons working for or on behalf of the organization, and is available to the public.	NA
Planning		
HSE Aspects	The RMP contains a description of potential effects as a result of potential exposures to COPCs that may be encountered in environmental media during intrusive activities.	Section 2.0 - Summary of Potential Health Risks associated with COPCs at Area B
Legal and Other Requirements	The RMP has been prepared in accordance with the Response Action Plan as reviewed and approved subsequent to the Maryland Department of the Environment Voluntary Cleanup Program and the U.S. EPA Region III RCRA Corrective Action Facility Lead program.	Section 1.5 - Background
Objectives, targets and measures	The purpose of the RMP is to document the procedures necessary for the mitigation of potential human exposures to environmental media containing COPCs, maintenance of the remedy, and management of environmental media in accordance with applicable laws and regulations.	Section 1.3 - Purpose of the RMP
Implementation and Operation		
Resources, roles, responsibilities and authority	The Owner has ultimate authority for ensuring that the RMP is implemented as necessary.	Section 3.0 - Risk Management Provisions Section 4.0 - Maintenance of the Remedy Section 5.2 - Responsible Parties
Competence, training and awareness	The Contractor is requested to provide a HASP(s) for each Site-specific task which may result in the implementation of the provisions for the RMP. It is the responsibility of the contractor to show proof of applicable training or licensing that may be required by federal, state or local laws and regulations including, but not limited to, OSHA Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) 40 hour training. It is up to the discretion of the Owner to verify that all personnel conducting subsurface activities on the Site meet the requirements of all applicable federal, state, and local laws and regulations.	Section 3.2 - RMP Implementation for Soil Section 3.3 - RMP Implementation for Groundwater Section 5.2 - Responsible Parties
Communication	Internal and external communications will be conducted in accordance with the flow chart located in Figure 8 of the RMP.	Section 5.1 - Communication and Notification Provisions
Documentation	The RMP will serve as the primary mechanism for record keeping.	Section 5.4 - Document Control
Control of Documents	A copy of the RMP and all addenda, as necessary, will be stored at the facility.	Section 5.4 - Document Control
Operational Control	The Owner has ultimate authority for ensuring that the RMP is implemented as necessary.	Section 5.2 - Responsible Parties
Emergency Preparedness and Response	Emergency communications will follow the procedures outlined in Section 5.1.3 of the RMP.	Section 5.1.3 - Emergency Response
Checking		
Monitoring and Measurement	The monitoring/measuring requirement will be achieved through annual inspections of the engineering controls.	Section 4.2 - Engineering Control Maintenance Requirements Section 5.3 - Reporting
Evaluation of Compliance		
Evaluate other requirements	Additional requirements that may need to be addressed will be implemented via an addendum to the RMP.	Section 1.3 - Purpose of the RMP Section 5.2 - Responsible Parties Section 5.4 - Document Control
Nonconformity, corrective action and preventive action	Modification or repair of the engineering controls will be implemented as necessary. The Owner's Representative, typically the Property Manager, will be responsible for ensuring that the requirements of the RMP are met.	Section 3.0 - Risk Management Provisions Section 4.0 - Maintenance of the Remedy
Control of records	Records relating to the modification or repair of engineering controls, including revised Site Plans, will be attached to the RMP and will be retained in perpetuity. Inspection documentation will be retained for a minimum period of five (5) years.	Section 5.4 - Document Control
Internal Audits	The Owner's representative, typically the Property Manager, will maintain responsibility of ensuring that the RMP is being implemented in an appropriate manner, at the Owner's discretion.	Section 5.2 - Responsible Parties
Management Review	The Owner will designate a representative to ensure that the responsible Person, typically the Property Manager, is conducting inspections and complying with the provisions of the RMP, at the Owner's discretion.	Section 5.2 - Responsible Parties

FIGURES

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Maryland

0 500 1,000 2,000 Feet
1:24,000

Quad: Baltimore East

Source: The topographic map was acquired through the USGS Topographic Map web service.

The aerial photo in the inset was acquired through the ESRI Imagery web service. Aerial photography dated 2012.

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Risk Management Plan for Area B - Sub-Parcel B-1
Chesapeake Commerce Center (Former GM Assembly Plant)

Site Location Map

5975 Holabird Avenue
Baltimore, Maryland 21224

Date:
September 2014

File Name:
DUK110_03_Fig01_RMPB1SLM.mxd

Edited: 9/3/2014 By: jslifer

Figure
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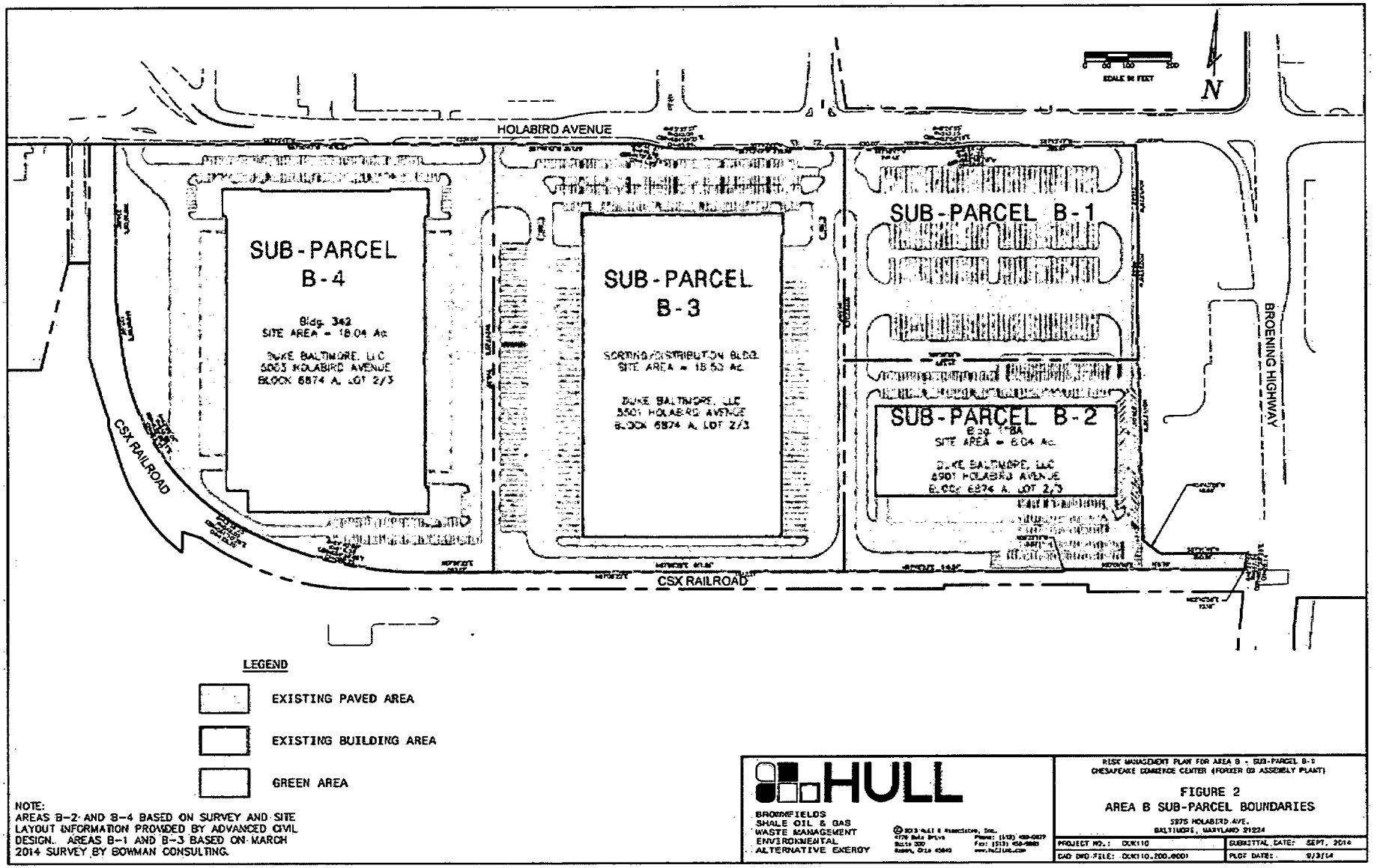
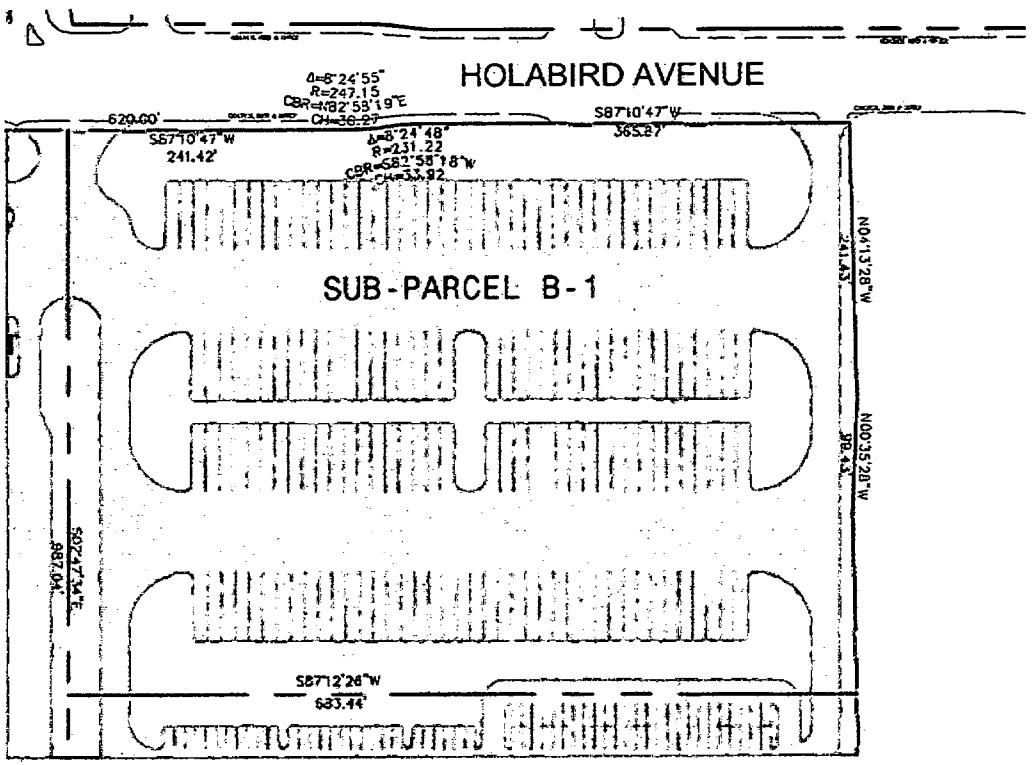
Produced using ArcGIS 10.0 SP1





LEGEND

EXISTING PAVED AREA

GREEN AREA

NOTE:
LAYOUT BASED ON MARCH 2014 SURVEY BY BOWMAN CONSULTING.

HULL

BROWNFIELDS
SHALE OIL & GAS
WASTE MANAGEMENT
ENVIRONMENTAL
ALTERNATIVE ENERGY

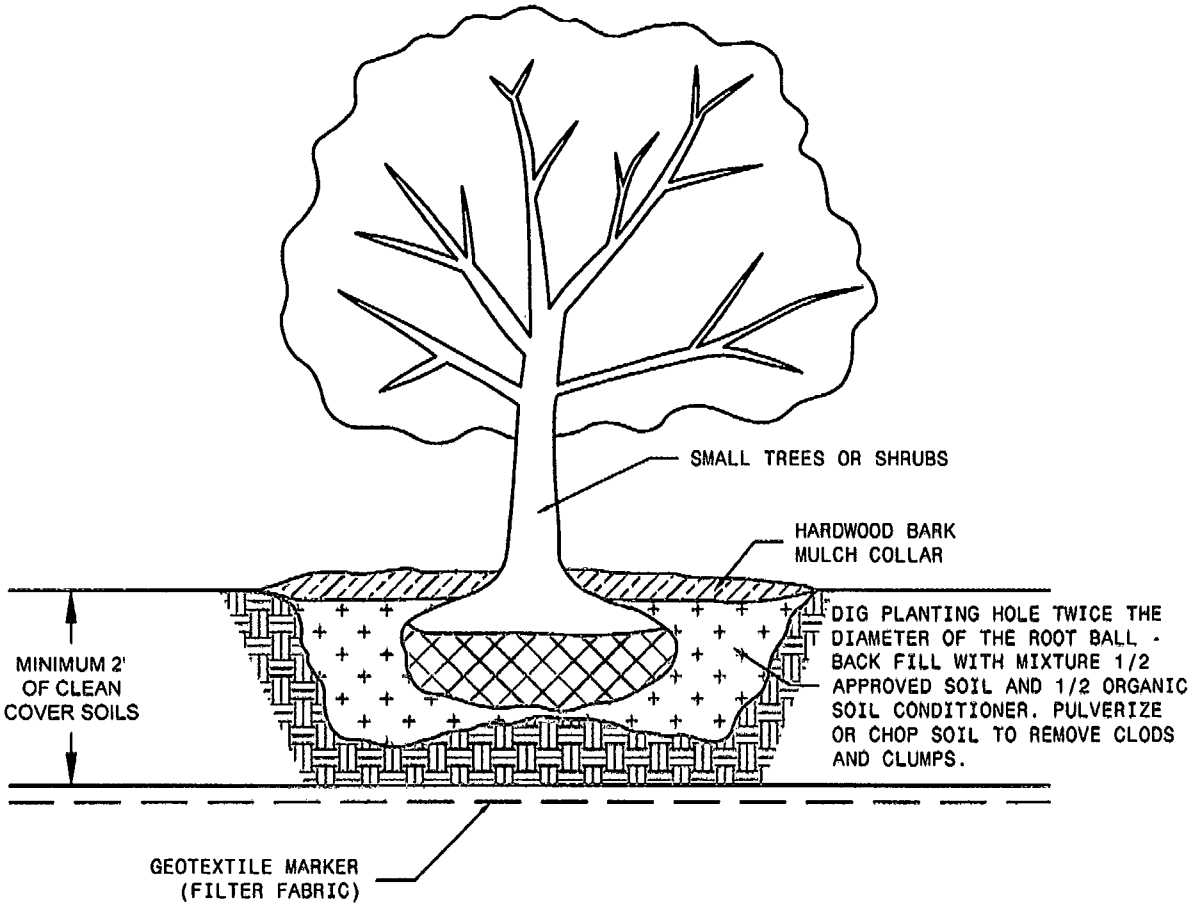
RISK MANAGEMENT PLAN FOR AREA B - SUB-PARCEL B-1
CHESAPEAKE COMMERCE CENTER (FORMER GM ASSEMBLY PLANT)

FIGURE 3
AS-BUILT SITE PLAN FOR SUB-PARCEL B-1

5975 HOLABIRD AVE.
BALTIMORE, MARYLAND 21224

PROJECT NO.: DUK110	SUBMITTAL DATE: SEPT. 2014
CAD DWG FILE: DUK110-200-0001	PLOT DATE: 9/3/14

BOOK: 18963 PAGE: 218



1 TYPICAL DETAIL FOR LANDSCAPE AREA (SMALL TREES AND SHRUBS)

NOT TO SCALE

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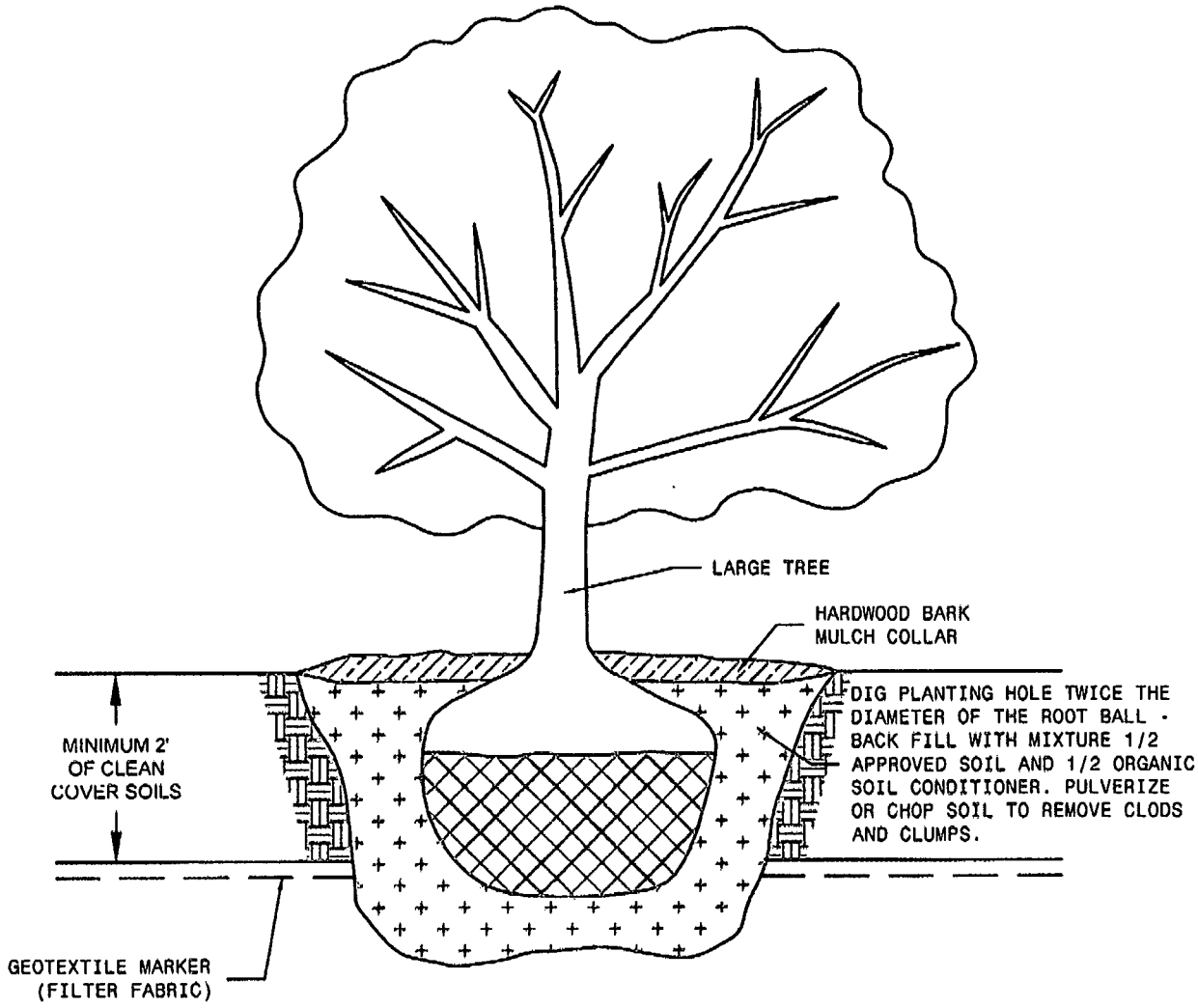
RISK MANAGEMENT PLAN FOR AREA B - SUB-PARCEL B-1
CHESAPEAKE COMMERCE CENTER (FORMER GM ASSEMBLY PLANT)

FIGURE 4
TYPICAL DETAIL FOR LANDSCAPE AREA
(SMALL TREES AND SHRUBS)

5975 HOLABIRD AVE.
BALTIMORE, MARYLAND 21224

PROJECT NO.:	DUK110	SUBMITTAL DATE:	SEPT. 2014
CAD DWG FILE:	DUK110.200.0004	PLOT DATE:	9/3/14



2 TYPICAL DETAIL FOR LARGE TREE PLANTINGS
NOT TO SCALE

HULL
BROWNFIELDS
SHALE OIL & GAS
WASTE MANAGEMENT
ENVIRONMENTAL
ALTERNATIVE ENERGY

6397 Emerald Parkway
Suite 200
Dublin, Ohio 43016
Phone: (614) 793-8777
Fax: (614) 793-8070
www.hullinc.com

RISK MANAGEMENT PLAN FOR AREA B - SUB-PARCEL B-1
CHESAPEAKE COMMERCE CENTER (FORMER GM ASSEMBLY PLANT)

FIGURE 5
TYPICAL DETAIL FOR
LARGE TREE PLANTINGS

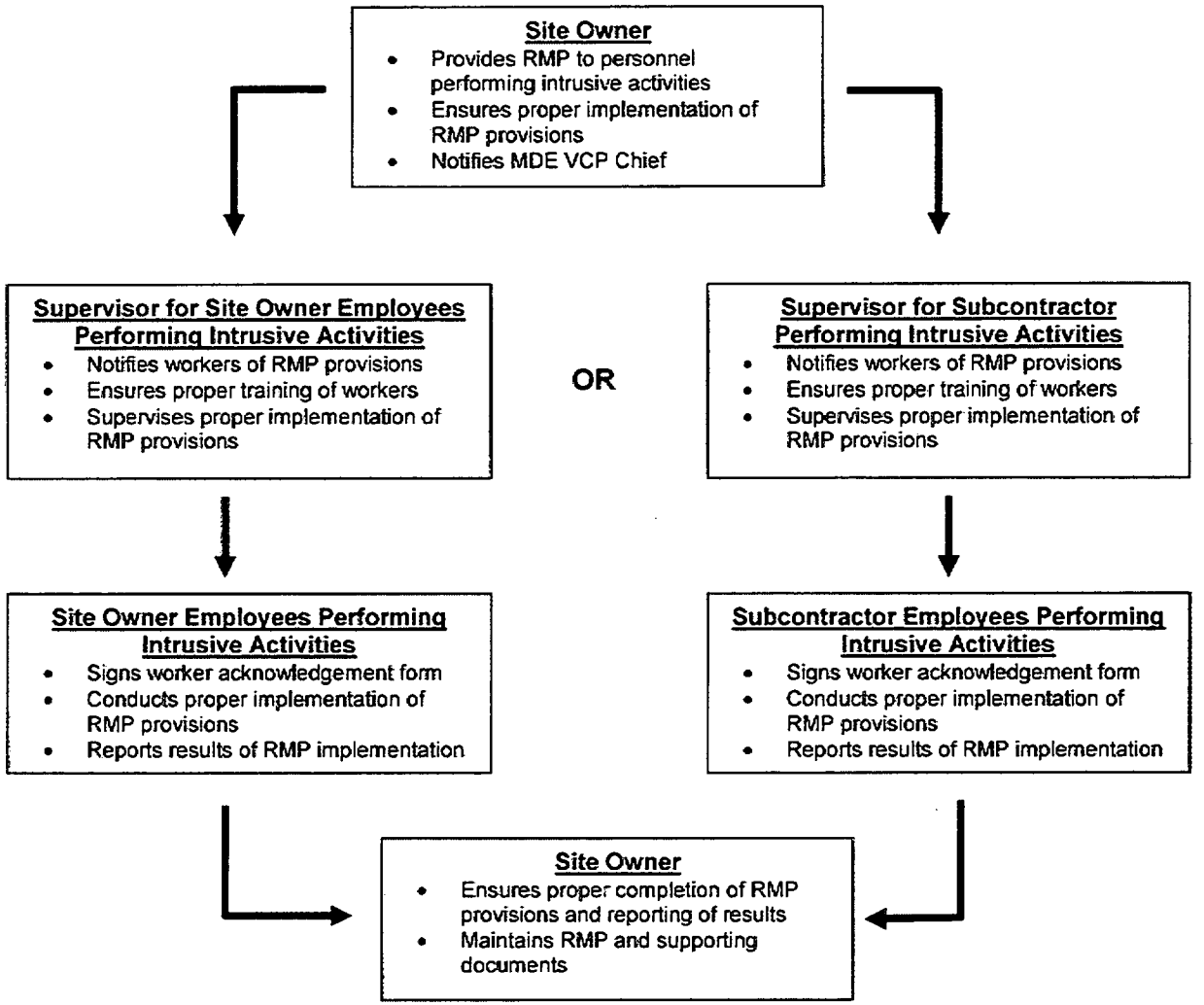
6975 HOLABIRD AVE.
BALTIMORE, MARYLAND 21224

PROJECT NO.: DUK110	SUBMITTAL DATE: SEPT. 2014
CAD DWG FILE: DUK110.200.0004	PLOT DATE: 9/3/14

RISK MANAGEMENT PLAN FOR AREA B - SUB-PARCEL B-1
CHESAPEAKE COMMERCE CENTER (FORMER GM-BALTIMORE ASSEMBLY PLANT)

FIGURE 6
SUMMARY OF RMP COMMUNICATION AND REPORTING LINES

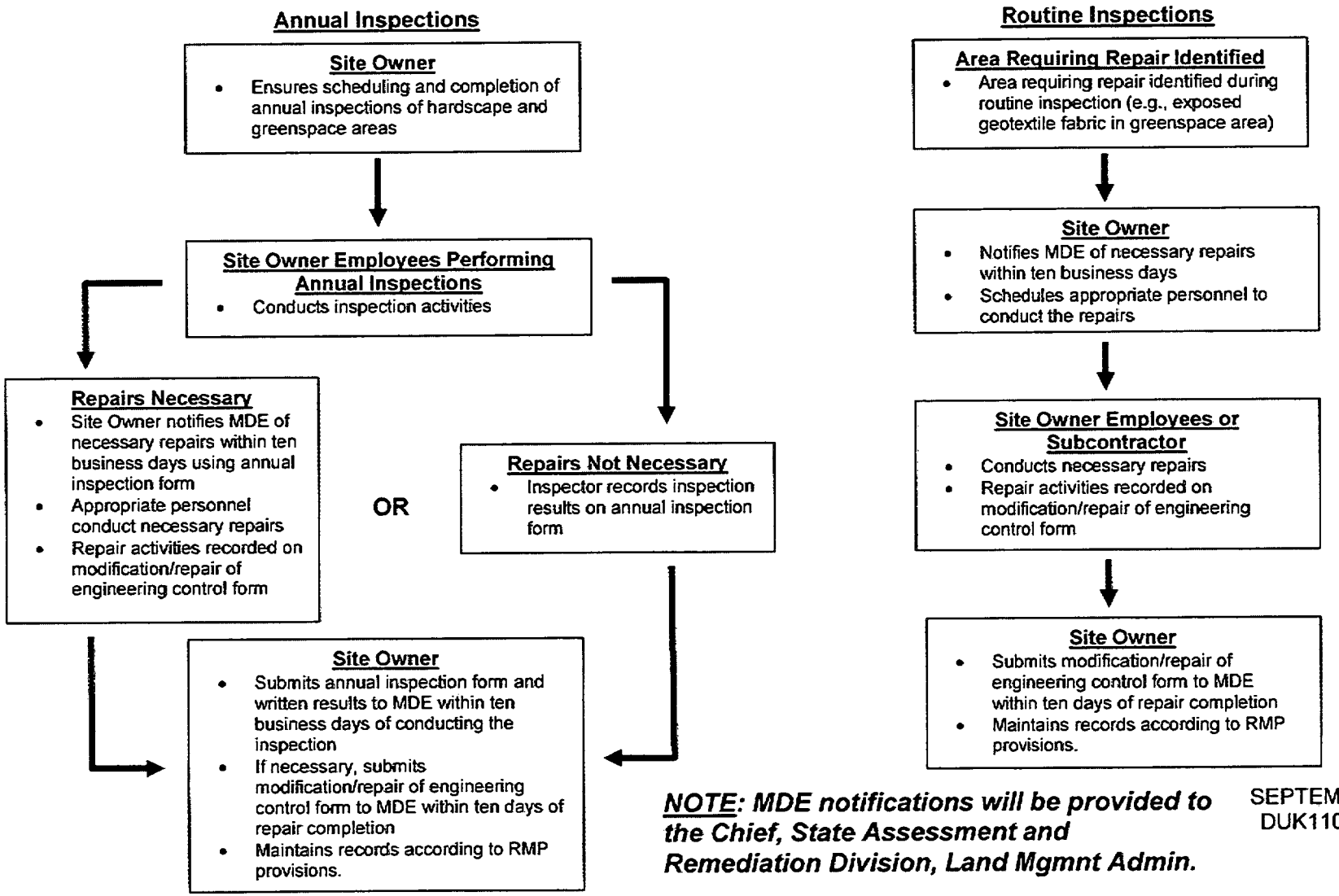
Figure 6A - General RMP Notification and Implementation Flow Chart



RISK MANAGEMENT PLAN FOR AREA B - SUB-PARCEL B-1
CHESAPEAKE COMMERCE CENTER (FORMER GM-BALTIMORE ASSEMBLY PLANT)

FIGURE 6
SUMMARY OF RMP COMMUNICATION AND REPORTING LINES

Figure 6B - RMP Reporting Flow Chart



NOTE: MDE notifications will be provided to the Chief, State Assessment and Remediation Division, Land Mgmnt Admin.

SEPTEMBER 2014
DUK110.701.0007

APPENDIX A

Worker Acknowledgement Forms

WORKER ACKNOWLEDGEMENT OF RISK MANAGEMENT PLAN

I HAVE READ AND FULLY UNDERSTAND THIS RISK MANAGEMENT PLAN AND AGREE TO COMPLY WITH ITS CONTENTS DURING THE COMPLETION OF THE TASKS OF THIS PROJECT.

NAME	DATE

APPENDIX B

NIOSH Contact Information and Example Chemical Data

The National Institute for Occupational Safety and Health **(NIOSH)** can be located at the following:

World Wide Web: http://www.cdc.gov/niosh/topics/chemical-safety/default.html

Telephone: 1-800-CDC-INFO (1-800-232-4636) or Outside the U.S. 513-533-8328

Fax: 1-513-533-8328

The attached page is an example of the type of information available from NIOSH. This reference for vanadium is excerpted from the *NIOSH Pocket Guide to Chemical Hazards* (NPG). Sources other than the NPG are also available. Those can include the *Agency for Toxic Substances and Disease Registry*, *Hazardous Materials Safety – Emergency Response Guidelines*, and others. These can also be found through NIOSH at the following World Wide Web address: http://www.cdc.gov/niosh/topics/chemical-safety/default.html.

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People.™

Search the Pocket Guide

SEARCH

Enter search terms separated by spaces.

Vanadium dust

Synonyms & Trade Names Divanadium pentoxide dust, Vanadic anhydride dust, Vanadium oxide dust, Vanadium pentaoxide dust
Other synonyms vary depending upon the specific vanadium compound.

CAS No. 1314-62-1	**RTECS No.** YW2450000 (/niosh-rtecs/YW256250.html)	**DOT ID & Guide** 2862 151 (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx?guide=151) (http://www.cdc.gov/Other/disclaimer.html)
Formula V_2O_5	**Conversion**	**IDLH** 35 mg/m3 (as V) See: vandust (/niosh/idlh/vandust.html)

Exposure Limits
NIOSH REL *: C 0.05 mg V/m3 [15-minute] [*Note: The REL applies to all vanadium compounds except Vanadium metal and Vanadium carbide (see Ferrovanadium dust).]
OSHA PEL † (nengapdxg.html): C 0.5 mg V_2O_5/m3 (resp)

Measurement Methods
NIOSH 7300 (/niosh/docs/2003-154/pdfs/7300.pdf), 7301 (/niosh/docs/2003-154/pdfs/7301.pdf), 7303 (/niosh/docs/2003-154/pdfs/7303.pdf), 7504 (/niosh/docs/2003-154/pdfs/7504.pdf), 9102 (/niosh/docs/2003-154/pdfs/9102.pdf);
OSHA ID185 (http://www.osha.gov/dts/sltc/methods/inorganic/id185/id185.html) (http://www.cdc.gov/Other/disclaimer.html)
See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html) (http://www.cdc.gov/Other/disclaimer.html)

Physical Description Yellow-orange powder or dark-gray, odorless flakes dispersed in air.

MW: 181.9	**BP:** 3182°F (Decomposes)	**MLT:** 1274°F	**Sol:** 0.8%	**VP:** 0 mmHg (approx)	**IP:** NA
Sp.Gr: 3.36	**FLP:** NA	**UEL:** NA	**LEL:** NA		

Noncombustible Solid, but may increase intensity of fire when in contact with combustible materials.

Incompatibilities & Reactivities Lithium, chlorine trifluoride

Exposure Routes inhalation, ingestion, skin and/or eye contact

Symptoms irritation eyes, skin, throat; green tongue, metallic taste, eczema; cough; fine rales, wheezing, bronchitis, dyspnea (breathing difficulty)

Target Organs Eyes, skin, respiratory system

Personal Protection/Sanitation (See protection codes (protect.html))
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: When contaminated
Remove: When wet or contaminated
Change: No recommendation

First Aid (See procedures (firstaid.html))
Eye: Irrigate immediately
Skin: Soap wash promptly
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations
NIOSH (as V)

Up to 0.5 mg/m3:
(APF = 10) Any air-purifying respirator with an N100, R100, or P100 filter (including N100, R100, and P100 filtering facepieces) except quarter-mask respirators.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.*
(APF = 10) Any supplied-air respirator*

Up to 1.25 mg/m3:
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode*
(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate filter.*

Up to 2.5 mg/m3:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter*
(APF = 50) Any self-contained breathing apparatus with a full facepiece
(APF = 50) Any supplied-air respirator with a full facepiece

Up to 35 mg/m3:
(APF = 2000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html) See MEDICAL TESTS: 0240 (/niosh/docs/2005-110/nmed0240.html)

Page last reviewed: April 4, 2011
Page last updated: November 18, 2010
Content source: National Institute for Occupational Safety and Health (NIOSH) Education and Information Division

Centers for Disease Control and Prevention 1600 Clifton Rd. Atlanta, GA 30333, USA
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348 - Contact CDC–INFO

APPENDIX C

Inspection Documentation

AREA B - SUB-PARCEL B-1 FACILITY INSPECTION DOCUMENTATION FORM

Required element for inspection:	Action required?	
	Yes	No
Integrity of hardscape areas (parking areas, concrete floors, etc.)?		
Exposed geotextile fabric in greenspace areas?		
Dead or dying trees in greenspace areas?		
Unauthorized modifications to hardscape areas (parking areas building slabs, etc.)?		

Type and location of needed action(s):

Supporting Materials - list and attach supporting materials

Note: At a minimum, a written summary of the annual inspection is to be submitted along with this form to MDE within ten business days of conducting the visual inspections.

The Owner will notify MDE of any necessary repairs within ten business days of discovering the condition requiring repair via this form. The Owner will submit written findings from the annual fall inspections (attached to a copy of this form) to MDE within ten business days of conducting the visual inspections. The Owner will submit the Notification of Repair or Modification of Engineering Control Form to MDE within ten business days of conducting any repair or modification.

APPENDIX D

Notification of Modification or Repair of Engineering Control

AREA B - SUB-PARCEL B-1 FACILITY NOTIFICATION OF REPAIR OR MODIFICATION OF ENGINEERING CONTROL FORM
Date:
Location of Repair or Modification:
Detailed Description of Repair or Modification:
Personnel involved in modification or repair:
Supporting Materials - list and attach any necessary supporting materials (amended site plans, etc.)
The Owner will notify MDE of any necessary repairs within ten business days of discovering the condition requiring repair. The Owner will submit this form to MDE within ten business days of conducting the modification or repair.

3030

6874

LR -
Declaration/Covenant
Recording Fee 75.00
Declarant Name: DUKE
BALTIMORE, LLC.
Ref: 5975 NOLAGIRD
LR - Surcharge 40.00

SubTotal: 115.00

Total: 575.00

03/15/2017 04:13
CC24-ES
#7974262 CC0801 -
Baltimore City
Mitchell/CC08.01.03 -
Register 03

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MAR 15 2017

CIRCUIT COURT
FOR BALTIMORE CITY

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