UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

REGION III

STATEMENT OF BASIS

FORMER GENERAL MOTORS CORPORATION

BALTIMORE ASSEMBLY PLANT

AREAS A, B-2, B-4, C-1 AND D

2122 BROENING HIGHWAY

BALTIMORE, MARYLAND

EPA ID NO. MDD003091972

CONCURRENCES								
MBOL	3LC30	3RC43	3RC43	3RC40	3LC20	3LC00		
RNAME	J. Henry	S. Briggs-Steeeville	D. Ajl	C. Rodrigues	L. Pizarro	A. Ferdas		
TE	6/15/11	6/20/11	6/20/11	6/21/11	6/27/11	6/24/11		
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TABLE OF CONTENTS

I. Introduction

The United States Environmental Protection Agency, Region 3 ("EPA") has prepared this Statement of Basis ("SB") to solicit public comment on its proposed remedy for Areas A and D and Sub-parcels B-2, B-4 and C-1 at the Former General Motors Corporation ("GM") Baltimore Assembly Plant Facility (the "Facility" or "Site") located at 2122 Broening Highway in Baltimore, Maryland. At a later time, EPA will be soliciting comments on a proposed remedy for the remaining portions of the Facility in a separate SB which will also be subject to 30-day public comment period. Each Area and Sub-parcel addressed in this SB is described in Section II, below, and EPA's proposed remedy for each of these areas and sub-parcels is described in detail in Section V, below. This SB highlights key information relied upon by EPA in proposing each remedy.

The Facility is subject to EPA's Corrective Action Program under the Solid Waste Disposal Act, as amended, commonly referred to as the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. Sections 6901 et seq. The Corrective Action Program requires that facilities subject to certain provisions of RCRA investigate and address releases of hazardous waste and hazardous constituents, usually in the form of soil or groundwater contamination, that have occurred at or from their property.

EPA is providing a 30-day public comment period on this SB. EPA may modify its proposed remedy based on comments received during this period. After evaluating the public's comments, EPA will announce its selection of a final remedy for each Area and Sub-parcel addressed in this SB in a Final Decision and Response to Comments (Final Decision). The Final Decision will address all significant comments received. If, on the basis of such comments or

other relevant information, significant changes are proposed to be made to the corrective measures identified by EPA in this SB, EPA may seek additional public comments.

This SB summarizes information that can be found in greater detail in the Administrative Record ("AR") for the Facility. The AR is available for public review at the EPA Region III office, the address of which is provided in Section IX, below. In addition, information about the Corrective Action Program, as well as a fact sheet for the Facility can be found by navigating http://www.epa.gov/reg3wcmd/correctiveaction.htm.

II. Facility Background

The Facility is located at 2122 Broening Highway in Baltimore, Maryland. The approximate 182-acre Site is bordered by Holabird Avenue and residential land to the north; Broening Highway to the east; Keith Avenue and Norfolk Southern Railroad to the south; and, Norfolk Southern Railroad yard and other commercial properties to the west. The Facility is zoned for industrial use.

The Facility primarily housed GM automobile assembly operations from 1936 to 2005. GM's operations consisted of four major production departments: Body, Paint, Trim, and Chassis. Each department consisted of a main conveyor line supported by sub-assembly operations contributing to the assembly of a complete vehicle.

Duke Baltimore LLC ("Duke") purchased the Facility from GM in January 2006. Duke subsequently demolished all existing buildings and structures and is currently redeveloping the Site to include over 2,500,000 square feet of commercial and industrial buildings to be used for bulk distribution, light manufacturing, and research and development. To date, over 450,000 square feet of commercial and industrial buildings have been constructed.

On February 22, 2006, Duke entered into a Facility Lead Agreement ("FLA") with EPA to address RCRA corrective action at the entire Facility. Duke also assessed the Facility under the Maryland Department of the Environment's Voluntary Cleanup Program ("VCP") in order to obtain a Certificate of Completion ("COC") under the VCP. For purposes of redevelopment, the Facility has been divided into four areas designated as Area A, Area B, Area C, and Area D, respectively. With this SB, EPA is proposing remedies for Areas A and D; two parcels of Area B, designated as Sub-parcels B-2 and B-4; and, a parcel of Area C, designated as Sub-parcel C-1. A map identifying the location of the site, in addition to a site plan depicting the location of each Area and Sub-parcel is attached hereto as Figures 1 and 2, respectively.

Below is a description of the historical use and current condition of Areas A and D, and Sub-parcels B-2, B-4 and C-1.

Area A *– Former Anchor Motor Freight Facility – Ward 26, Section 1, Block 6871-C, Lot 1*

Area A covers approximately 35.35 acres in the northernmost portion of the Facility. Originally, Area A was part of Fort Holabird and was owned and operated by the Department of Defense to house military personnel. GM acquired Area A in 1972 and leased it to Anchor

Motor Freight ("AMF") which provided trucking services to GM for distribution of GM vehicles. The southern half of Area A was used for truck parking and the northern half was used for truck refueling, maintenance and repair. Two former underground storage tank ("UST") farms and a fueling area were located on the northern half of Area A, which were replaced by an aboveground storage tank ("AST") farm and a new fueling area. Structures present on the northern half of Area A included a truck maintenance/office building and a truck wash building. Since Duke purchased the Facility, both buildings have been demolished and all USTs and ASTs in Area A have been removed. Area A is currently vacant and undeveloped. The current address for Area A is 6000 Holabird Avenue, Baltimore, MD 21224.

Sub-parcels B-2 and B-4 – *Former American Standard Property – Ward 26, Section 1, Block 6874-A, Lots 2 & 3*

Sub-parcels B-2 and B-4 are located within Area B. Area B covers approximately 52.43 acres and is located to the north of GM's former Main Assembly Building (i.e., Area C). In 1971, GM acquired Area B from American Standard, formerly known as the American Radiator and Standard Sanitary Corporation. American Standard manufactured bathroom fixtures, such as sinks and bathtubs, and operated an iron sand-form foundry, enamel application shop, cleaning houses, machine shop, acetylene generation house, oil storage and distribution facilities, USTs, ASTs, warehouses, and office space at the Facility. All American Standard buildings were demolished in 1974, except for a warehouse which GM subsequently used for tire storage.

Sub-parcel B-2 encompasses approximately 8.02 acres in the southeast portion of Area B and was mainly used by GM as an access driveway into the former Main Assembly Building; a parking area (North Employee Parking Lot); temporary office/construction trailer storage, and a guard shack with an attached aerial walkway into the Main Assembly Building. Following closure of the Facility, these structures were demolished and/or removed. Duke redeveloped Sub-parcel B-2 which now includes the newly constructed Building 118A (also referred to as Building B-2). The address for Sub-parcel B-2 is 5901 Holabird Avenue, Baltimore, MD 21224.

Sub-parcel B-4 encompasses 18.03 acres in the western portion of Area B and was mainly used by GM as a parking area for new vehicles awaiting shipment/distribution. As part of its redevelopment activities, Duke constructed Building 342 (also referred to as Building B-4) on Sub-parcel B-4. The address for Sub-parcel B-4 is 5003 Holabird Avenue, Baltimore, MD 21224.

Sub-Parcel C-1 – *Former GM Main Assembly Plant – Ward 26, Section 1, Block 6874-A, Lot 4*

Sub-parcel C-1 is located within Area C. The Area C property covers approximately 81.33 acres. It consisted mainly of GM's Former Main Assembly Building. The oldest portions of the Main Assembly Plant building were constructed on vacant land in 1934. The building originally consisted of two plants, the Fisher Body Plant to the south and the Chevrolet Assembly Plant to the north. The two plants were consolidated into the Main Assembly Building and were gradually expanded north to the CSX railroad tracks and west to Quail Street between 1960 and 1982. Due to its size, Area C was divided into two investigative areas, Area C-1 and Area C-2, for the RCRA Facility Investigation ("RFI") conducted by Duke. Subsequent to the completion

of the RFI, Duke further subdivided Area C-1 and created Sub-parcel C-1 for purposes of redevelopment. EPA's proposed remedy is for Sub-parcel C-1. For clarity, a figure depicting Sub-parcel C-1 is attached to this document as Figure 3.

Sub-parcel C-1 covers approximately 13.41 acres and is located within the northwest portion of Area C-1. Area C-1 included the following structures that were peripheral to the former Main Assembly Building: Power House, Pump House, Driveaway Building, Storage Building (formerly called the Weld Destruct Building) for unspecified materials, Central Wastewater Treatment Plant (WWTP), UST and AST Tank Farms, Training Facility, and Sealer Building. These structures were all of slab-on-grade, brick and concrete block construction. Subsequent to Duke acquiring the Facility, all of the buildings in Area C-1 were demolished. Sub-parcel C-1 was purchased by Merchant Quail Properties, LLC from Duke in June 2008 and is currently operated as a refrigerated warehouse. The address for Sub-parcel C-1 is 4851 Holabird Avenue, Baltimore, MD 21224.

Area D *– Former Fort Holabird Property – Ward 26, Section 1, Block 6920, Lot 1*

Area D covers approximately 20 acres and is bounded to the north by CSX Railroad; to the south by Keith Avenue; to the east by Colgate Creek and FILA sportsware facility; and, to the west by Broening Highway. Fort Holabird occupied Area D until 1979 and on-site structures included the No. 2 Boiler Plant, Post Engineer Yard, offices, the Army Intelligence School, a small gymnasium, storage buildings, and barracks. All former Fort Holabird structures were demolished in 1971 by the Department of Defense. When GM acquired the land in 1979, the basements of these buildings had already been filled with building debris, and the area was subsequently paved and converted to GM's former East Employee Parking Lot. The Maryland Port Authority, an agency of the State of Maryland, purchased Area D from Duke in December 2008. The Maryland Port Authority is currently using Area D for port-related activities such as security checkpoint, trailer storage, and shipping container repair. The newly assigned address for Area D is 2001 Broening Highway, Baltimore, MD 21224.

III. Summary of Environmental History

In May 2006, Duke submitted to EPA and MDE a Phase I Environmental Site Assessment ("Phase I") which identified those areas at the Facility requiring further investigation under a RCRA Facility Investigation Work Plan ("RFI Work Plan"). Areas requiring additional investigation were designated as Recognized Environmental Conditions ("RECs") or Areas of Interest ("AOIs").

In August 2006, EPA and MDE approved Duke's RFI Work Plan which summarized historical data and proposed additional investigative activities for the RECs and AOIs located in Areas A, B, C, and D. Duke completed the investigative activities outlined in the RFI Work Plan between August and November 2006. The results of the investigations for Area A are summarized in an EPA and MDE-approved April 2007 RCRA Facility Investigation/Phase II Environmental Site Assessment and Focused Corrective Measures Study (Revision 1.0) Report ("RFI/Phase II Report"). The results of the investigations for Area B are summarized in an EPA and MDE-approved March 2007 RFI/Phase II Report. The results of the investigations for Area

C are summarized in an EPA and MDE-approved June 2007 RFI/Phase II Report. The results of the investigation for Area D are summarized in an EPA and MDE-approved July 2007 RFI/Phase II Report.

A. Summary of Environmental Investigations and RFI/Phase II Reports

1. Soil Investigation

Facility soils were analyzed for a total of 176 chemicals, including volatile organic compounds ("VOCs"), semi-volatile organic compounds ("SVOCs"), polycyclic aromatic hydrocarbons ("PAHs"), polychlorinated biphenyls ("PCBs"), and metals. The soil analytical results were screened by Duke for chemicals of potential concern ("COPCs") using the lower of U.S. EPA Region 3 Risk Based Concentrations ("RBCs") table (April 11, 2006) and MDE Non-Residential Cleanup Levels. The RBCs for industrial soil and the MDE Non-Residential Cleanup Levels were selected for screening purposes based on the existing and future land use of the Facility as industrial and/or commercial.

a. *Area A*

A total of sixty-nine (69) chemicals were detected in soils at Area A; however, only three (3) of those chemicals were detected at concentrations exceeding their respective RBCs and/or MDE Non-Residential Soil Cleanup values. Those three (3) chemicals were classified as COPCs and evaluated for a direct contact with soil exposure pathway. For a summary of chemicals, including COPCs, detected in soils at Area A, please refer to Table 2-2 (presented in the Human Health Risk Assessment ("HHRA") provided as Appendix A of the RFI/Phase II Report for Area A) included as Attachment 1 to this SB.

b. *Area B*

A total of sixty-nine (69) chemicals were detected in soils at Area B; however, only eleven (11) of those chemicals were detected at concentrations exceeding their respective RBCs and/or MDE Non-Residential Soil Cleanup values and, therefore, classified as COPCs. Each of the eleven (11) COPCs were evaluated for exposure based on a direct contact with soils pathway as discussed in Section III.A.3, below. For a summary of chemicals, including COPCs, detected in soil for Area B, please refer to Table 2-1 (presented in the HHRA provided as Appendix A of the RFI/Phase II Report for Area B) included as Attachment 2 to this SB.

c. *Area C, Sub-parcel C-1*

There were no COPCs identified in soils at Sub-parcel C-1.

d. *Area D*

A total of thirty-two (32) chemicals were detected in soils at Area D; however, only three (3) of those chemicals were detected at concentrations exceeding RBCs or MDE Non-Residential Soil Cleanup values and, therefore, classified as COPCs. Each COPC was evaluated for

exposure based on a direct contact with soils pathway as discussed in Section III.A.3, below. For a summary of chemicals, including COPCs, detected in soil for Area D, please refer to Table 2-2 (presented in Appendix A – Human Health Risk Assessment for Area D) included as Attachment 3 to this SB.

2. Groundwater Investigation

Duke has installed 36 groundwater monitoring wells across the Site and, for purposes of investigation, has divided the groundwater into three major zones – the shallow water-bearing zone, the deep water-bearing zone, and the bottom of the deep water-bearing zone.

Shallow groundwater under the Facility is contained in the Patapsco Aquifer. Across the Facility, shallow groundwater ranges from approximately 0.5 to 16 feet below ground surface and generally flows in an overall southeasterly direction toward Colgate Creek. Colgate Creek, a tidally-influenced tributary of the Patapsco River, is the closest body of water located approximately 200 feet southeast of Area D. The Patapsco Aquifer contains chloride contamination resulting from salt water intrusion, in addition to industrial contamination resulting from historic industrial operations in the region.

Groundwater in the deep water-bearing zone beneath the Facility is contained in the Patuxent Aquifer. Groundwater in this zone underlying the eastern portion of the Facility flows east, towards Colgate Creek with an average gradient of 0.0024 feet/foot, while groundwater in the deep water-bearing zone at the western portion of the Facility flows south, towards Keith Avenue with a hydraulic gradient of 0.005 feet/foot. Groundwater flow at the bottom of the deep zone is to the south-southwest, which is similar to the flow in the top of the deep zone for the same area of the Facility. As with the Patapsco Aquifer, the Patuxent aquifer is contaminated with chloride and industrial contaminants.

The Facility and surrounding area are serviced with potable water from the Baltimore City public water supply system. Baltimore City requires connection to the public water supply system where such a system is available. Baltimore City uses surface water from local rivers, and does not use groundwater, as its source of potable water. Furthermore, as part of the EPA and MDE-approved June 2007 RFI/Phase II Report, Duke identified no potable wells within one mile of the Facility.

Groundwater beneath the Facility was analyzed for a total of 176 chemicals including VOCs, SVOCs, PAHs, PCBs, and metals. Although the Facility is located within an area where groundwater is not used, and will not be used in the foreseeable future as a source for drinking water, concentrations of COPCs in groundwater were screened against drinking water criteria. For each COPC, the lower value between the U.S. EPA Region 3 Tap Water RBC (April 11, 2006) or the Maximum Contaminant Levels ("MCLs") promulgated at 40 C.F.R. Part 141 pursuant to Section 1412 of the Safe Drinking Water Act, 42 U.S.C. Section 300g-1, was selected as the screening criterion for groundwater. In some cases, neither an RBC nor a MCL was available for a detected chemical, and, as a result, detections of these chemicals were evaluated *via* the selection of a surrogate screening concentration. For example, the RBC for isopropylbenzene was used as a screening concentration for *n*-propylbenzene, *p*-isopropyltoluene

and *sec*-butylbenzene. In addition, the chemicals identified as COPCs were screened against their respective U.S. EPA groundwater-to-indoor air screening criterion to evaluate the potential for volatile emissions to migrate to indoor air (i.e., vapor intrusion).

a. *Area A*

A total of fifty-one (51) chemicals were detected in groundwater in Area A. Of the detected chemicals, fifteen (15) chemicals were identified as COPCs with respect to the screening criteria. One VOC was detected at a concentration exceeding both its potable use and U.S. EPA groundwater-to-indoor screening criteria, and six (6) VOCs were each detected at a maximum concentration above their respective drinking water screening level. Most of the VOCs were detected in water samples taken from perched water in the area of the former tank pits. For a summary of chemicals, including COPCs, detected in groundwater for Area A, please refer to Table 2-4 (presented in the HHRA provided as Appendix A of the RFI/Phase II Report for Area A) included as Attachment 4 to this SB.

b. *Area B*

A total of fifty-two (52) chemicals were detected in groundwater in Area B. Of the detected chemicals, twenty-one (21) chemicals were identified as COPCs with respect to the screening criteria. Seventeen (17) chemicals were detected at concentrations above their respective RBC and/or MCL. In addition, the maximum concentrations of 3 COPCs exceeded their respective RBC and/or MCL as well as their U.S. EPA groundwater-to-indoor air screening criterion. Lead was also detected at a concentration above its RBC and/or MCL. For a summary of chemicals, including COPCs, detected in groundwater for Area B, please refer to Table 2-2 (presented in the HHRA provided as Appendix A of the RFI/Phase II Report for Area B), included as Attachment 5 to this SB.

c. *Area C, Sub-parcel C-1*

There were no COPCs identified in the groundwater below Sub-parcel C-1.

d. *Area D*

A total of thirty-six (36) chemicals were detected in groundwater in Area D. Of the detected chemicals, nine (9) chemicals were identified as COPCs in groundwater in Area D. In addition to the chemicals identified as COPCs for the evaluation of direct contact exposures, all VOCs detected in groundwater at Area D were identified as COPCs for evaluation of the potential for volatile emissions to migrate to indoor air (i.e., vapor intrusion). For a summary of chemicals detected in groundwater for Area D, including COPCs, please refer to Table 2-4 (presented in the HHRA provided as Appendix A of the RFI/Phase II Report for Area D) included as Attachment 6 to this SB.

3. Human Health Risk Assessment and Evaluation of Exposure Pathways

A Human Health Risk Assessment ("HHRA") was completed for Areas A, B, C and D to determine whether site-related contaminants pose an unacceptable risk to human health assuming industrial and/or commercial use of the Facility. The HHRA did not include an evaluation for residential use because the reasonably anticipated land use for the entire Facility is industrial and/or commercial. The exposure pathways assessed include VOC emissions from soil to indoor air; VOC emissions from groundwater to indoor air; direct contact with soil; and, direct contact with groundwater (construction/excavation workers only). The reference location of the HHRA report for each redevelopment Area is as follows:

Area A – Appendix A of the April 2007 RFI/Phase II Report for Area A.
Area B – Appendix A of the March 2007 RFI/Phase II Report for Area B.
Area C – Appendix A of the June 2007 RFI/Phase II Report for Area C.
Area D – Appendix A of the July 2007 RFI/Phase II Report for Area D.

a. *Area A*

1) Soil to Indoor Air Pathway

Three (3) COPCs, methylcyclohexane, 1,2,4-trimethylbenzene and 1,3,5-trimethyllbenzene, were detected in soils at Area A at concentrations which posed a potential unacceptable human health risk based on the soil to indoor air pathway. Please refer to Section III.B.1., below, for a summary of remedial activities that were conducted in Area A to address those soils that posed a potential unacceptable human health risk.

2) Groundwater to Indoor Air Pathway

None of the seven (7) VOCs detected in groundwater samples collected from Area A were detected at a concentration that would pose a potential unacceptable human health risk based on the groundwater to indoor air pathway.

3) Direct Contact with Soils Pathway

The HHRA concluded that no potential unacceptable human health risks are posed by direct contact with soils in Area A by the three (3) potential receptor populations (i.e., on-site worker, child and youth visitor/trespasser, and construction/excavation worker).

4) Direct Contact with Groundwater Pathway

The quantitative evaluation for direct contact with groundwater in Area A by the construction/excavation worker receptor population did not indicate a potential unacceptable human health risk. No other potentially complete exposure pathways pertaining to Area A groundwater exist. Based upon these results, groundwater in Area A is not considered a medium of concern with respect to a direct contact pathway.

b. ***Area B, Sub-parcels B-2 and B-4***

1) Soil to Indoor Air Pathway

Two (2) VOCs, tetrachloroethene and trichloroethene, were detected at concentrations that exceeded their respective indoor air decision levels at soil sampling location HMW3. In addition, the soil sample collected from sampling location 7B6 (0 feet to 2 feet below ground surface) was determined to be a "hot spot" in accordance with MDE guidance in that it contained concentrations of the following Polycyclic Aromatic Hydrocarbons ("PAHs"): benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Please refer to Section III.B.2, below, for a summary of remedial activities that have been taken to address those soils in Area B that posed a potential unacceptable human health risk.

2) Groundwater to Indoor Air Pathway

None of the twelve (12) VOCs that were detected in groundwater samples collected from Area B were reported at a concentration which posed a potential unacceptable human health risk based on the groundwater to indoor air pathway.

3) Direct Contact with Soils Pathway

At several sampling locations, lead concentrations were detected above the U.S. EPA lead cleanup level of 1,000 mg/kg for industrial properties. In addition, soils at two areas also exhibited leachable concentrations of lead in excess of the Toxicity Characteristic Leaching Procedure1 ("TCLP") regulatory limit of 5 parts per million ("ppm"). Those two areas were centered around sampling locations HSB-8 (0 feet to 2 feet below ground surface) and HSBB-13 (0 feet to 2 feet below ground surface). Any soil removed from those areas during redevelopment activities must be managed as a hazardous waste under RCRA Subtitle C because it exhibits the toxicity characteristic for lead under TCLP.

The HHRA concluded that exposure to lead in soil may pose a potential unacceptable human health risk to the construction/excavation worker receptor population. Please refer to Section III.B.2, below, for a summary of remedial actions that have been conducted to eliminate potential exposure pathways to soils remaining in Area B by the on-site worker, child/youth visitor and/or trespasser populations.

4) Direct Contact with Groundwater Pathway

The HHRA concluded that exposure to multiple COPCs in groundwater may pose a potential unacceptable risk to the construction/excavation worker receptor population. As a result, in addition to required soil management activities described in Section III.B.2, below, an EPA- and MDE-approved Risk Management Plan ("RMP") was implemented to address

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1 EPA uses the Toxicity Characteristic Leaching Procedure (TCLP) to identify those wastes which might result in contamination of groundwater if improperly managed. TCLP is designed to determine the mobility of both organic and inorganic contaminants present in liquid, solid, and multiphasic wastes.

potential unacceptable hazards posed by direct contact exposures to groundwater by the construction/excavation worker receptor population.

c. *Area C, Sub-parcel C-1*

As previously noted, no COPCs were identified in soils or groundwater for Sub-parcel C-1. Therefore, it was concluded that the complete exposure pathways to soil and groundwater within Sub-parcel C-1 do not pose a potential unacceptable human health risk to the future receptor populations evaluated by the HHRA.

d. *Area D*

1) Soil to Indoor Air Pathway

No COPCs were detected in soils at concentrations that would pose a potential unacceptable human health risk based on the soil to indoor air pathway.

2) Groundwater to Indoor Air Pathway

No COPCs were detected in groundwater at concentrations that would pose a potential unacceptable human health risk based on the groundwater to indoor air pathway.

3) Direct Contact with Soils Pathway

No COPCs were detected in soils at concentrations that would pose a potential unacceptable human health risk based on direct contact with soils in Area D for any of the potential future receptor populations.

4) Direct Contact with Groundwater Pathway

No COPCs were detected in groundwater at concentrations that would pose a potential unacceptable human health risk to the construction/excavation worker receptor population from direct contact exposures to groundwater.

B. Summary of Remedial Activities Completed

The following summarizes the remedial activities conducted at Areas A and D and Sub-parcels B-2, B-4 and C-1 at the Facility:

1. *Area A*

In accordance with an EPA and MDE-approved Response Action Plan for Area A ("Area A RAP") dated July 26, 2007, Duke excavated soils in Area A that exceeded the soil to indoor air risk-based levels. On October 3, 2007, EPA and MDE acknowledged that the confirmation sampling results demonstrated that the excavation was complete and that contaminants in the remaining soils were below their respective soil to indoor air risk-based levels.

2. ***Sub-parcel B-2***

In accordance with a Response Action Plan for Area B ("Area B RAP"), approved by EPA and MDE on July 20, 2007, Duke conducted the following activities at Sub-Parcel B-2:

- Constructed a 118,000 square foot building (Building 118A) and associated paved parking areas and roadways, and covered green space areas with a minimum of two feet of clean soil placed over a geotextile marker fabric, thereby eliminating direct contact exposures to soil by the on-site worker, child and youth visitor.
- Implemented an EPA and MDE Risk Management Plan ("RMP") to manage potential direct contact exposures to future construction/excavation workers during activities conducted after the initial redevelopment. The RMP includes information about the Facility's environmental conditions, descriptions of potential risks/hazards associated with soils and groundwater at the site, documentation of areas with known impacted soil, and descriptions of procedures required for soil characterization and management. The RMP serves as a record-keeping device to document that future workers are notified of, and have acknowledged, the Facility conditions so that appropriate actions can be conducted. The RMP also provides information related to landscape maintenance and tree management and the potential risks/hazards associated with soils below the geotextile marker layer underlying green space areas.
- Recorded a VCP Certificate of Completion with the City of Baltimore City Land Records Office in the chain of title for the Facility property that notifies prospective purchasers that on-Site use of groundwater is prohibited and land use is restricted to commercial/industrial purposes throughout Area B.

3. ***Sub-parcel B-4***

In accordance with a Response Action Plan for Area B ("Area B RAP"), approved by EPA and MDE on July 20, 2007, Duke conducted the following activities at Sub-Parcel B-4:

- Excavated and disposed of soils exhibiting the characteristic of toxicity for lead. The excavation and disposal activities were completed in May 2007. The results of confirmatory sampling were submitted to and approved by MDE and EPA. Based on the confirmatory sampling results, the residual soils do not exhibit the characteristic of toxicity for lead.
- Constructed a 342,000 square foot building (Building 342) and associated paved parking areas and roadways, and covered green space areas with a minimum of two feet of clean soil placed over a geotextile marker fabric, thereby eliminating direct contact exposures to soil by the on-site worker, child and youth visitor.
- Implemented a RMP to manage potential direct contact exposures to future construction/excavation workers during activities conducted after the initial redevelopment. The RMP includes information about Facility's environmental conditions, descriptions of potential risks/hazards associated with soils and groundwater at the site, documentation of areas with known impacted soil, and descriptions of procedures required for soil characterization and management.

The RMP serves as a record-keeping device to document that future workers are notified of, and have acknowledged, the Facility conditions so that appropriate actions can be conducted. The RMP also provides information related to landscape maintenance and tree management and the potential risks/hazards associated with soils below the geotextile marker layer underlying green space areas.

- Recorded a VCP Certificate of Completion with the City of Baltimore City Land Records Office in the chain of title for the Facility property that notifies prospective purchasers that on-Site use of groundwater is prohibited and land use is restricted to commercial/industrial purposes throughout Area B.

4. *Sub-parcel C-1*

In March 2008, EPA and MDE approved a Response Action Plan for Area C ("Area C RAP"). Based on the findings presented in the Area C RAP, EPA and MDE determined that no active remedial activities are required for soil or groundwater within the Sub-parcel C-1.

5. *Area D*

Based on the findings of the EPA and MDE-approved July 2007 RFI/Phase II for Area D, no active remediation activities were required in Area D.

IV. Media Cleanup Objectives

EPA has identified the following Corrective Action Objectives for soils and groundwater at the Facility:

A. Soils

The Corrective Action Objective for soils is to contain the hazardous wastes and hazardous constituents that remain in place in Areas A and Sub-parcels B-2, B-4 and C-1 and control human and environmental exposure to those hazardous wastes and hazardous constituents.

B. Groundwater

EPA's Corrective Action Objectives are to prevent human exposure to contaminants in the groundwater and to demonstrate that any contaminant plume does not impact nearby surface water. EPA and MDE discussed groundwater cleanup objectives during the Facility-wide investigation, taking into consideration that the Patapsco and Patuxent Aquifers have background conditions that render them unsuitable as a potable source of water. Both the Patapsco Aquifer (shallow water-bearing zone) and Patuxent Aquifer (deep water-bearing zone) are contaminated with chloride as a result of salt water intrusion, in addition to industrial contamination from historical industrial operations in the region. Therefore, the Facility and surrounding area are serviced with potable water from the Baltimore City public water supply system. Thus, EPA and MDE concluded that the maximum beneficial use of groundwater at the Facility was as base flow recharge to Colgate Creek. This determination is supported by data gathered from the thirty-six

(36) monitoring wells at the Facility. Such data was used to model groundwater flow beneath the facility; to demonstrate that the groundwater plume ultimately discharges to Colgate Creek; and, that concentrations of contaminants are below levels of concern for surface water quality.

V. Summary of Proposed Remedy

A. Introduction

EPA's proposed remedy is comprised of components which address Areas A and D and Sub-parcels B-2, B-4 and C-1, and consists of a combination of engineering controls ("ECs") and institutional controls ("ICs"). ECs are engineered measures, such as caps, fences, treatment systems, etc., designed to minimize the potential for human exposure to contamination by either limiting contact with contaminated areas or controlling migration of contamination through environmental media. ICs are non-engineered instruments such as administrative and/or legal controls that minimize the potential for human exposure to contamination and/or protect the integrity of the remedy by limiting land or resource use.

B. Area A

EPA's proposed remedy for Area A consists of the compliance with and maintenance of land and resource restrictions. EPA is proposing that the ICs for Area A contain the following land and resource restrictions:

1) Area A shall be restricted to commercial and/or industrial purposes and shall not be used for residential purposes unless it is demonstrated to MDE, in consultation with EPA, that such use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy and MDE, in consultation with EPA, provides prior written approval for such use;

2) Groundwater from Area A shall not be used for any purpose other than to conduct the operation, maintenance, and monitoring activities required by MDE and/or EPA, unless it is demonstrated to MDE, in consultation with EPA, that such use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy and MDE, in consultation with EPA, provides prior written approval for such use; and,

3) The property owner shall evaluate compliance with the ICs implemented for Area A on a biennial basis and provide a report documenting the findings of the evaluation to EPA and MDE.

C. Sub-parcel B-2

EPA's proposed remedy for Sub-parcel B-2 consists of the inspection, operation and maintenance of the already constructed ECs, which include:

1) The concrete slab associated with Building 118A;

2) Paved parking areas and roadways associated with Building 118A; and,

3) The two feet of clean soil placed over a geotextile marker fabric in green space areas.

These ECs provide cover and eliminate direct contact with contaminated soils. The inspection, operation and maintenance of the already constructed ECs are already required by the EPA- and MDE-approved RMP. EPA's proposed remedy requires compliance with the RMP. In addition, EPA's proposed remedy for Sub-parcel B-2 also includes the compliance with and maintenance of land or resource restrictions.

EPA proposes that compliance with the RMP and compliance with and maintenance of land or resource restrictions at Sup-parcel B-2 be implemented through enforceable IC(s) to include the following elements:

1) Sub-parcel B-2 shall be restricted to commercial and/or industrial purposes and not be used for residential purposes unless it is demonstrated to MDE, in consultation with EPA, that such use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy and MDE, in consultation with EPA, provides prior written approval for such use;

2) Groundwater from Sub-parcel B-2 shall not be used for any purpose other than to conduct the operation, maintenance, and monitoring activities required by MDE and/or EPA, unless it is demonstrated to MDE, in consultation with EPA, that such use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy and MDE, in consultation with EPA, provides prior written approval for such use;

3) The property owner shall perform all activities at Sub-parcel B-2 in accordance with the RMP to maintain the integrity and protectiveness of the selected remedy unless it is demonstrated to MDE, in consultation with EPA, that such activity will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy and MDE, in consultation with EPA, provides prior written approval for such use. The RMP shall be deemed to be incorporated into the IC and be made an enforceable part thereof; and,

   The property owner shall evaluate compliance with ICs implemented for Sub-Parcel B-2 on a biennial basis and provide a report documenting the findings of the evaluation to EPA and MDE.

D. Sub-parcel B-4

EPA's proposed remedy for Sub-parcel B-4 consists of the inspection, operation and maintenance of the already constructed ECs, which include:

1) The concrete slab associated with Building 342;

2) Paved parking areas and roadways associated with Building 342; and,

3) The two feet of clean soil placed over a geotextile marker fabric in green space areas.

These ECs provide cover and eliminate direct contact with contaminated soils. The inspection, operation and maintenance of the already constructed ECs are already required by the EPA and MDE- approved RMP. EPA's proposed remedy requires compliance with the RMP. In addition, EPA's proposed remedy for Sub-parcel B-4 also includes the compliance with and maintenance of land or resource restrictions.

EPA proposes that compliance with the RMP and compliance with and maintenance of land or resource restrictions at Sup-parcel B-4 be implemented through enforceable ICs to include the following elements:

1) Sub-parcel B-4 shall be restricted to commercial and/or industrial purposes and not be used for residential purposes unless it is demonstrated to MDE, in consultation with EPA, that such use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy and MDE, in consultation with EPA, provides prior written approval for such use;

2) Groundwater from Sub-parcel B-4 shall not be used for any purpose other than to conduct the operation and maintenance and monitoring activities required by MDE and/or EPA, unless it is demonstrated to MDE, in consultation with EPA, that such use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy and MDE, in consultation with EPA, provides prior written approval for such use;

3) The property owner shall perform all activities at Sub-parcel B-4 in accordance with the RMP to maintain the integrity and protectiveness of the selected remedy unless it is demonstrated to MDE, in consultation with EPA, that such activity will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy and MDE, in consultation with EPA, provides prior written approval for such use. The RMP shall be deemed to be incorporated into the IC and be made an enforceable part thereof; and,

4) The property owner shall evaluate compliance with institutional controls implemented for Sub-Parcel B-4 on a biennial basis and provide a report documenting the findings of the evaluation to EPA and MDE.

E. Sub-parcel C-1

EPA's proposed remedy for Sub-parcel C-1 consists of the compliance with and maintenance of land and resource use restrictions to be implemented through enforceable ICs. The ICs for Sub-parcel C-1 will contain the following elements:

1) Sub-parcel C-1 shall be restricted to commercial and/or industrial purposes and shall not

be used for residential purposes unless it is demonstrated to MDE, in consultation with EPA, that such use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy and MDE, in consultation with EPA, provides prior written approval for such use;

2) Groundwater from Sub-parcel C-1 shall not be used for any purpose other than to conduct the operation and maintenance and monitoring activities required by MDE and/or EPA, unless it is demonstrated to MDE, in consultation with EPA, that such use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy and MDE, in consultation with EPA, provides prior written approval for such use; and,

3) The property owner shall evaluate compliance with ICs implemented for Sub-Parcel C-1 on a biennial basis and provide a report documenting the findings of the evaluation to EPA and MDE.

Sampling results from the Facility-wide investigation demonstrate that Sub-parcel C-1 has no COPCs above EPA Region 3 industrial standards. Therefore, ECs are not proposed for Sub-parcel C-1.

F. Area D

EPA's proposed remedy for Area D consists of the compliance with and maintenance of land and resource use restrictions to be implemented through enforceable IC(s). The IC(s) for Area D will contain the following elements:

1) Area D shall be restricted to commercial and/or industrial purposes and shall not be used for residential purposes unless it is demonstrated to MDE, in consultation with EPA, that such use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy and MDE, in consultation with EPA, provides prior written approval for such use;

2) Groundwater from Area D shall not be used for any purpose other than to conduct the operation and maintenance and monitoring activities required by MDE and/or EPA, unless it is demonstrated to MDE, in consultation with EPA, that such use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy and MDE, in consultation with EPA, provides prior written approval for such use; and,

3) The property owner shall evaluate compliance with institutional controls implemented for Area D on a biennial basis and provide a report documenting the findings of the evaluation to EPA and MDE.

Sampling results from the Facility-wide investigation demonstrate that Area D has no COPCs above EPA Region 3 industrial standards. Therefore, ECs are not proposed for Area D.

G. Implementation

EPA proposes to implement the final remedy for Areas A and D and Sub-parcels B-2, B-4 and C-1 through enforceable ICs such as a permit, order and/or an Environmental Covenant pursuant to the Maryland Uniform Environmental Covenants Act, Maryland Environment Code, Sections 1-801 to 1-815 ("UECA") to be recorded with the deed for the Facility property. Duke will be required to provide a coordinate survey as well as a metes and bounds survey of Areas A and D and Sub-parcels B-2, B-4 and C-1 and the Facility boundary. For properties located outside of the Facility boundary that are impacted by Facility-related contamination, EPA and/or MDE will require that Duke use its best efforts to obtain an Environmental Covenant from any such property owners.

If the Facility owner or subsequent owners fail to meet their obligations under the ICs or if EPA and/or MDE, in its sole discretion, deems that additional ECs or land and/or resource restrictions are necessary to protect human health or the environment, EPA and/or MDE has the authority to require and enforce such additional ECs or land and/or groundwater use restrictions.

VI. Evaluation of EPA's Proposed Decision

This section provides a description of the criteria EPA uses to evaluate proposed remedies under the Corrective Action Program. The criteria are applied in two phases. In the first phase, EPA evaluates three criteria, known as Threshold Criteria. In the second phase, EPA uses seven Balancing Criteria to select among alternative solutions, if more than one is proposed. The Facility has demonstrated that the current conditions meet the Threshold Criteria established by EPA. Because EPA is not selecting among alternatives, a complete evaluation of the Balancing Criteria is not necessary.

The following is a summary of EPA's evaluation of the Threshold Criteria:

A. Protect Human Health and the Environment

EPA's proposed remedies for Areas A and D and Sub-parcels B-2, B-4, and C-1 protect human health and the environment by eliminating, reducing, or controlling potential unacceptable risk through the implementation and maintenance of ECs and ICs.

ECs, including the building slab, paved parking areas, roadways, and clean cover, are already in place at Sub-parcels B-2 and B-4 and have eliminated potential human exposure to contaminated soils. Furthermore, to prevent any exposure to contaminated soil throughout Sub-parcels B-2 and B-4 in the future, the property owner will be required to maintain the integrity of the building slab and paved parking areas and roadways at all times.

EPA is also proposing ICs to prohibit the use of groundwater for potable purposes or any other use that could result in human exposure and restrict land use to commercial or industrial purposes throughout Areas A and D and Sub-parcels B-2, B-4 and C-1. Additional ICs proposed for Sub-parcels B-2 and B-4 also require the implementation of the EPA and MDE -approved RMP to prevent future exposures to contaminated soil and/or groundwater within these sub-

parcels.

B. Achieve Media Cleanup Objectives

EPA's proposed remedies meet the media cleanup objectives based on assumptions regarding current and reasonably anticipated land and water resource use(s). The remedy proposed in this SB is based on the current and future anticipated land use at Areas A and D and Sub-parcels B-2, B-4 and C-1 as commercial or industrial. As such, industrial media cleanup objectives were selected and the majority of Facility soils contain contaminant concentrations that are below EPA's industrial soil RBCs. For those areas where contaminants remain in place above EPA's industrial soil RBCs, ECs and ICs will be maintained and implemented to address potential direct contact risks.

Although contaminants were detected in groundwater beneath Areas A and D, and Sub-parcels B-2 and B-4 at concentrations above EPA Tap Water RBCs and/or MCLs, the entire Facility and surrounding areas are serviced by the City of Baltimore municipal water supply. Furthermore, MDE and City of Baltimore officials have indicated that the Bureau of Water and Wastewater supplies water to the Facility and surrounding area, and that no potable use of groundwater is occurring in the region. Even though the groundwater in the vicinity of the Facility is not used, and will not be used in the foreseeable future, as a drinking water source, EPA is proposing to require ICs, such as a permit, enforceable order and/or an environmental covenant, as necessary, that will prohibit consumptive use of the groundwater.

C. Remediating the Source of Releases

In all remedy decisions, EPA seeks to eliminate or reduce further releases of hazardous wastes or hazardous constituents that may pose a threat to human health and the environment. Duke removed the source of contaminants from the soil in Area A and Sub-parcel B-4, thereby, eliminating, to the extent practicable, further releases of hazardous constituents from on-site soils as well as the source of the groundwater contamination. In addition, the soil and groundwater management procedures will require the proper removal and off-site disposal of contaminated soils and/or groundwater that are disturbed during any construction/excavation activities conducted on-Site in accordance with applicable state and federal laws and regulations, thereby removing the source of contaminants from Facility soils as well as groundwater.

VII. Environmental Indicators

Under the Government Performance and Results Act ("GPRA"), EPA has set national goals to address RCRA corrective action facilities. Under GPRA, EPA evaluates two key environmental clean-up indicators for each facility: (1) Current Human Exposures Under Control, and (2) Migration of Contaminated Groundwater Under Control. The Facility met both of these indicators on January 14, 2010.

VIII. Financial Assurance

EPA has evaluated whether financial assurance for corrective action is necessary to

implement EPA's proposed remedy at the Facility. Given that EPA's proposed remedy does not require any further engineering actions to remediate soil, groundwater or indoor air contamination at this time and given that the costs of implementing institutional controls at the Facility will be de minimis, EPA is proposing that no financial assurance be required.

IX. Public Participation

Interested persons are invited to comment on EPA's proposed decision. The public comment period will last thirty (30) calendar days from the date that notice is published in a local newspaper. Comments may be submitted by mail, fax, e-mail, or phone to Ms. Jeanna R. Henry at the address listed below.

A public meeting will be held upon request. Requests for a public meeting should be made to Ms. Jeanna R. Henry at the address listed below. A meeting will not be scheduled unless one is requested.

The Administrative Record contains all the information considered by EPA for the proposed decision at this Facility. The Administrative Record is available at the following location[s]:

U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103
Contact: Ms. Jeanna R. Henry (3LC30)
Phone: (215) 814-2820
Fax: (215) 814-3113
Email: henry.jeannar@epa.gov

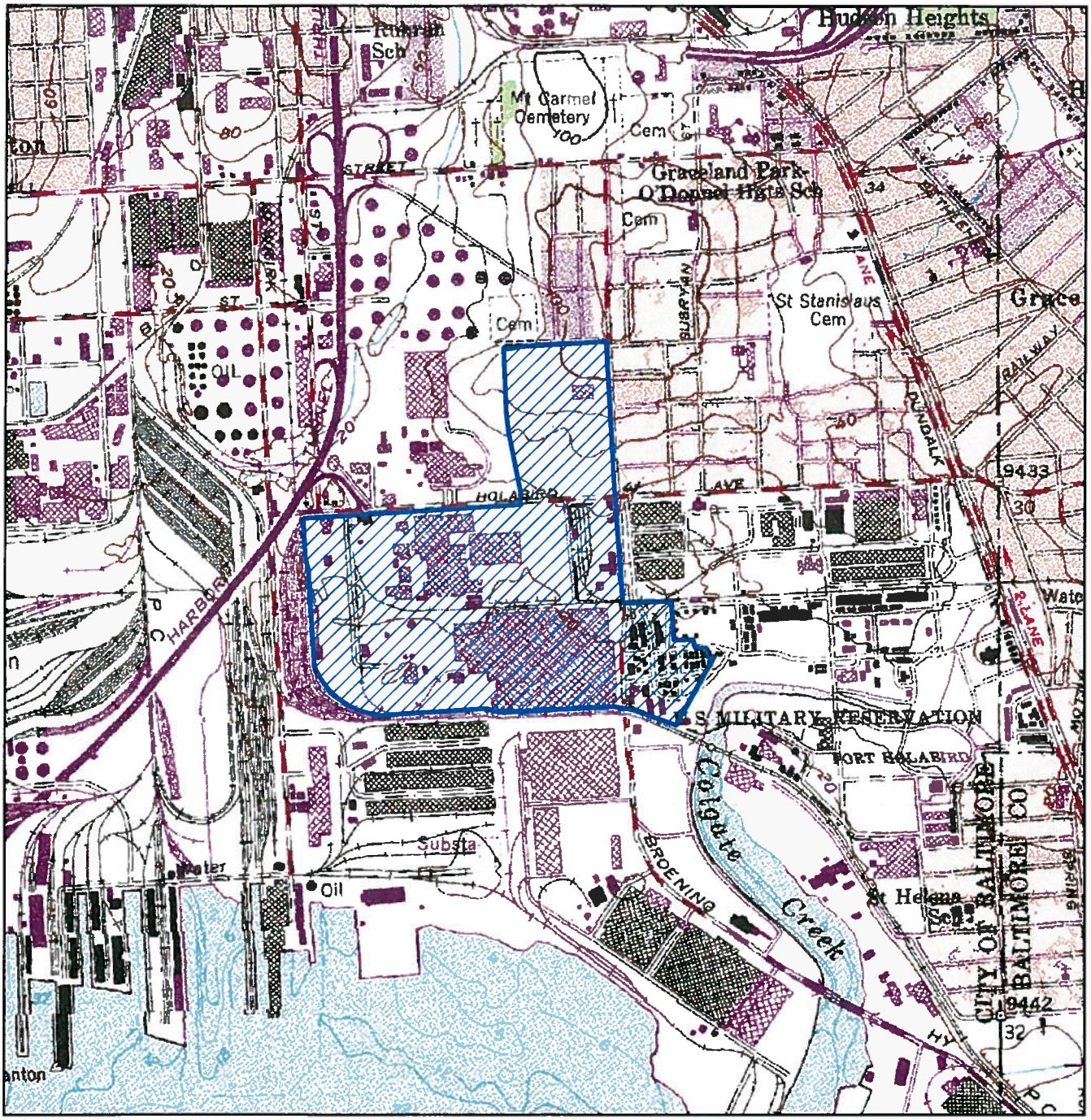
Date: 6/30/11

Abraham Ferdas, Director
Land and Chemicals Division
US EPA, Region III

Figure 1

Site Location Map

Former General Motors Corporation
Baltimore Assembly Plant



Hull & associates, inc.

4900 Parkway Drive
Suite #100
Mason, Ohio 45040
Phone: (513) 459-9677
Fax: (513) 459-9869
www.hullinc.com

Produced using ArcGIS 9.0

Phase I Environmental Site Assessment
Former General Motors Corporation
Baltimore Assembly Plant

Site Location Map

2122 Broening Highway
City of Baltimore, Maryland

Date: May 2006

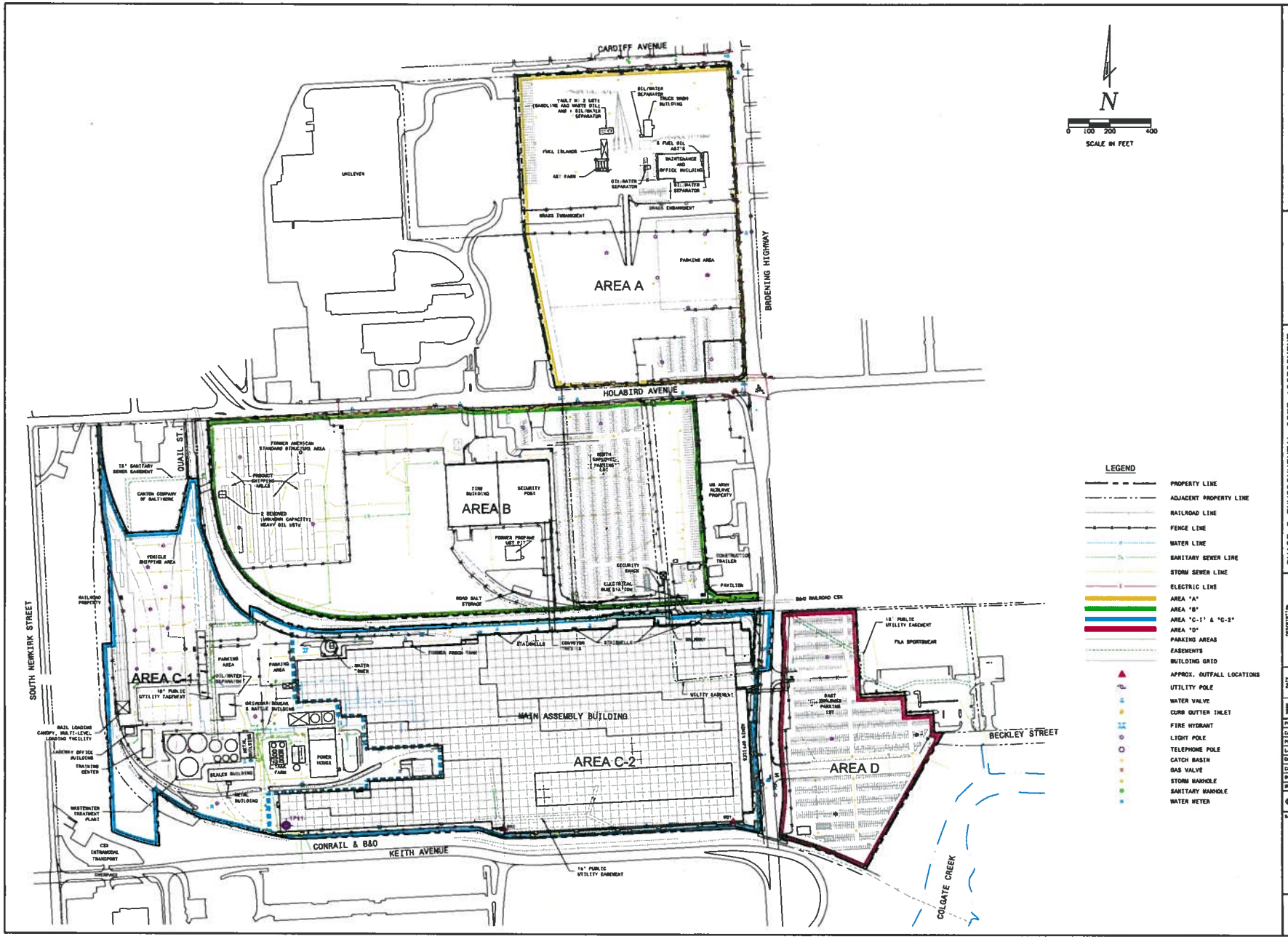
Project Number: DUK030
Geodatabase: DUK028.mdb
File Name: DUK033_02_Fig01_SiteLocMap.mxd

Figure 1

Figure 2

Site Plan

Former General Motors Corporation
Baltimore Assembly Plant



Hull & Associates, inc.
ENGINEERS | GEOLOGISTS | SCIENTISTS | PLANNERS
4900 PARKWAY
SUITE 100
MADISON, OHIO 44057
PHONE: (513) 459-9977
FAX: (513) 459-9989
www.hullinc.com

REGISTERED ENGINEER _____ DATE _____

PHASE I ENVIRONMENTAL SITE ASSESSMENT
FORMER GENERAL MOTORS CORPORATION
BALTIMORE ASSEMBLY PLANT
BALTIMORE, MARYLAND

MARK	DATE	DESCRIPTION

PROJECT NO.: DUR033
CAD DWG FILE: DUR033_200.0001
PLOT DATE: 5/8/06
LAYOUT BY: BN
DRAWN BY: JAP, DB
CHECKED BY:
SCALE: 1"=200'
SUBMITTAL DATE: MAY 2006

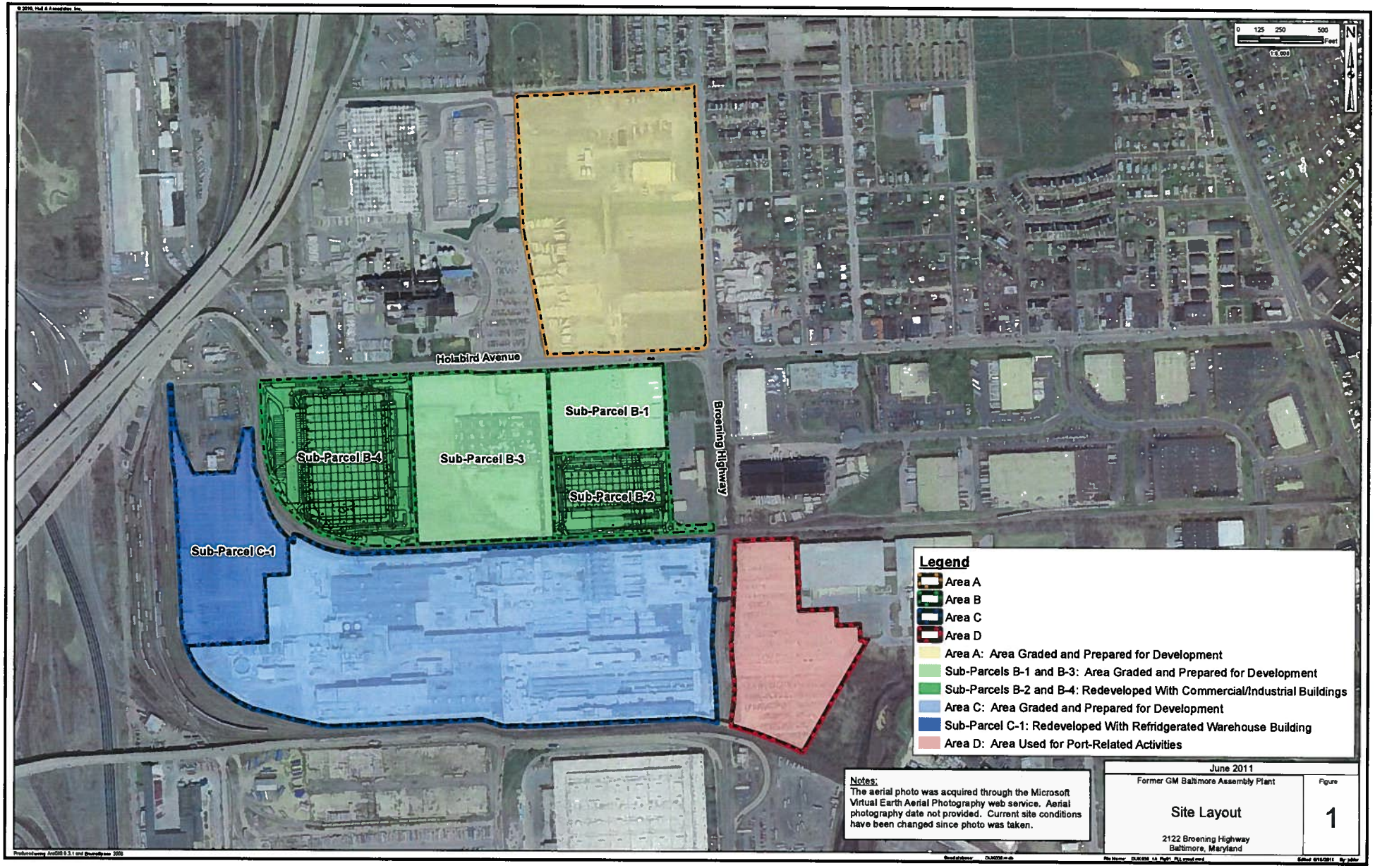
SHEET TITLE:
PLATE 1
SITE PLAN

SHEET ___ OF ___

Figure 3

Sub-parcel C-1

Former General Motors Corporation
Baltimore Assembly Plant


Holabird Avenue
Broening Highway
Sub-Parcel B-1
Sub-Parcel B-2
Sub-Parcel B-3
Sub-Parcel B-4
Sub-Parcel C-1
0 125 250 500 Feet
N
Legend
Area A
Area B
Area C
Area D
Area A: Area Graded and Prepared for Development
Sub-Parcels B-1 and B-3: Area Graded and Prepared for Development
Sub-Parcels B-2 and B-4: Redeveloped With Commercial/Industrial Buildings
Area C: Area Graded and Prepared for Development
Sub-Parcel C-1: Redeveloped With Refridgerated Warehouse Building
Area D: Area Used for Port-Related Activities
Notes:
The aerial photo was acquired through the Microsoft Virtual Earth Aerial Photography web service. Aerial photography date not provided. Current site conditions have been changed since photo was taken.
June 2011
Former GM Baltimore Assembly Plant
Site Layout
2122 Broening Highway
Baltimore, Maryland
Figure
1

Attachment 1

Table 2-2
Summary of Chemicals Detected in Total Soil in Area A

Site-Specific Human Health Risk Assessment for Area A
Former General Motors Corporation
Baltimore Assembly Plant

SITE-SPECIFIC HUMAN HEALTH RISK ASSESSMENT FOR AREA A (REVISION 1.0
FORMER GENERAL MOTORS CORPORATION
BALTIMORE ASSEMBLY PLANT
2122 BROENING HIGHWAY, BALTIMORE, MARYLAND 21224

TABLE 2-2

SUMMARY OF CHEMICALS DETECTED IN TOTAL SOIL

Chemical of Potential Concern		CAS Registry	Maximum Detected Concentration (mg/kg)	Minimum Detected Concentration (mg/kg)	Number of Reported Detects	Number of Samples	Frequency of Detection (%)	Location of Maximum Detection	Sampling Interval of Maximum Detection (ft bgs)	RBC - Industrial Soil* (mg/kg)	COPC?
VOCs											
Acetone		67641	19.2	0.003	35	124	28	HSBA9	0.6' - 2.0'	9.20E+04	N
Benzene		71432	2.6	0.001	27	124	22	9I3	10.0' - 12.0'	5.20E+01	N
2-Butanone (Methyl Ethyl Ketone)		78933	2.3	0.0009	31	124	25	HSB5	6.0' - 8.0'	6.13E+04	N
Carbon Disulfide		75150	0.035	0.001	25	124	20	HSB3	10.0' - 12.0'	1.02E+04	N
Chloroform		67663	0.004	0.004	1	124	1	HSB3	2.0' - 4.0'	1.02E+03	N
Cis-1,2-Dichloroethene	b	156592	0.002	0.002	1	124	1	9A2	0.0' - 2.0'	9.20E+02	N
Cyclohexane	c	110827	9.1	0.0048	11	66	17	9I1	7.5' - 9.5'	1.1E+06	N
1,2-Dibromoethane (Ethylene Dibromide)		106934	0.007	0.002	3	92	3	9I3	10.0' - 12.0'	1.43E+00	N
1,1-Dichloroethane		75343	0.001	0.001	2	124	2	9A2	0.0' - 2.0'	2.04E+04	N
1,2-Dichloroethane		107062	0.15	0.001	7	124	6	9I3	10.0' - 12.0'	3.14E+01	N
1,2-Dichloropropane		78875	0.004	0.001	3	124	2	9I3	10.0' - 12.0'	4.21E+01	N
Ethylbenzene		100414	24.4	0.002	22	124	18	HSBA9	0.6' - 2.0'	1.02E+04	N
N-Hexane	d	110543	0.333	0.0303	2	16	13	HSBA11	14.0' - 15.0'	1.1E+06	N
Isopropylbenzene		98828	3.39	0.0068	11	107	10	HSBA9	0.6' - 2.0'	1.0E+04	N
Methyl Cyclohexane	c	108872	26	0.004	14	65	22	9I1	7.5' - 9.5'	1.1E+06	N
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	e	108101	0.027	0.002	4	124	3	9H1	6.0' - 8.0'	6.13E+04	N
Methyl Tert Butyl Ether		1634044	0.018	0.018	1	107	1	9F2	14.0' - 16.0'	7.15E+02	N
Methylene Chloride		75092	0.02	0.003	13	124	10	HSB6	6.0' - 8.0'	3.82E+02	N
N-Propylbenzene	f	103651	9.87	0.0056	6	42	14	HSBA9	0.6' - 2.0'	1.02E+04	N
Naphthalene		91203	5	1.4	4	65	6	9F2	2.0' - 4.0'	2.04E+03	N
P-Isopropyltoluene	f	99876	5.41	0.00804	5	42	12	HSBA9	0.6' - 2.0'	1.02E+04	N
Sec-Butylbenzene	f	135988	2.86	0.00849	5	42	12	HSBA9	0.6' - 2.0'	1.02E+04	N
Tetrachloroethene		127184	0.009	0.007	2	124	2	9A2	0.0' - 2.0'	5.30E+00	N
Toluene		108883	17.8	0.0009	23	124	19	HSBA9	6.0' - 8.0'	8.18E+03	N
Trichloroethene		79016	0.003	0.001	2	124	2	9A2	0.0' - 2.0'	7.15E+00	N
Trichlorofluoromethane (cfc-11)		75694	0.001	0.001	1	107	1	9A4	8.0' - 10.0'	3.07E+04	N
1,2,4-Trimethylbenzene	d	95636	88.6	0.00725	9	42	21	HSBA9	0.6' - 2.0'	5.11E+03	N
1,3,5-Trimethylbenzene	d	108678	37.1	0.0047	6	42	14	HSBA9	0.6' - 2.0'	5.11E+03	N
Xylenes, Total		1330207	112	0.001	25	124	20	HSBA9	0.6' - 2.0'	2.04E+04	N
SVOCs											
Acenaphthene		83329	3.7	0.0638	10	126	8	9F2	2.0' - 4.0'	6.13E+03	N
Acenaphthylene	g	208968	0.179	0.179	1	126	0.8	HSBA18	0.0' - 0.2'	6.13E+03	N
Anthracene		120127	0.51	0.082	7	126	6	9F2	2.0' - 4.0'	3.07E+04	N
Benzo(A)Anthracene		56553	0.96	0.081	4	126	3	9F2	2.0' - 4.0'	3.92E+00	N
Benzo(A)Pyrene		50328	0.923	0.16	3	125	2	HSBA8	14.0' - 15.0'	3.92E-01	Y
Benzo(B)Fluoranthene		205992	1.13	0.13	4	125	3	HSBA8	14.0' - 15.0'	3.92E+00	N
Benzo(G,H,I)Perylene	h	191242	0.668	0.668	1	61	2	HSBA8	14.0' - 15.0'	3.07E+03	N
Benzo(K)Fluoranthene		207089	0.6	0.094	4	125	3	9F2	2.0' - 4.0'	3.92E+01	N
Biphenyl		92524	6.6	0.11	5	66	8	9F2	2.0' - 4.0'	5.11E+03	N
Bis(2-Ethylhexyl)Phthalate		117817	1.6	0.083	7	85	8	9F2	2.0' - 4.0'	2.04E+02	N
Chrysene		218019	1.1	0.073	6	126	5	9F2	2.0' - 4.0'	3.92E+02	N
Dibenz(A,H)Anthracene		53703	0.174	0.174	1	124	1	HSBA8	14.0' - 15.0'	3.92E-01	N
Dibenzofuran	d	132649	1.2	0.09	5	85	6	9F2	2.0' - 4.0'	2.04E+02	N
1,4-Dichlorobenzene		106467	0.2	0.2	1	85	1	HSB6	2.0' - 4.0'	1.19E+02	N
Diethyl Phthalate		84662	0.097	0.097	1	85	1	9A2	6.0' - 8.0'	8.18E+04	N
Fluoranthene		206440	2.4	0.089	10	126	8	9F2	2.0' - 4.0'	4.09E+03	N
Fluorene		86737	4.2	0.16	10	126	8	9F2	2.0' - 4.0'	4.09E+03	N
Indeno(1,2,3-Cd)Pyrene		193395	0.546	0.546	1	124	1	HSBA8	14.0' - 15.0'	3.92E+00	N
2-Methylnaphthalene		91576	17	0.13	7	85	8	9F2	2.0' - 4.0'	4.09E+02	N
Naphthalene		91203	5	1.09	6	126	5	9F2	2.0' - 4.0'	2.04E+03	N
Phenanthrene	i	85018	6.4	0.084	13	126	10	9F2	2.0' - 4.0'	3.07E+04	N

SITE-SPECIFIC HUMAN HEALTH RISK ASSESSMENT FOR AREA A (REVISION 1.0
FORMER GENERAL MOTORS CORPORATION
BALTIMORE ASSEMBLY PLANT
2122 BROENING HIGHWAY, BALTIMORE, MARYLAND 21224

TABLE 2-2

SUMMARY OF CHEMICALS DETECTED IN TOTAL SOIL

Chemical of Potential Concern		CAS Registry	Maximum Detected Concentration (mg/kg)	Minimum Detected Concentration (mg/kg)	Number of Reported Detects	Number of Samples	Frequency of Detection (%)	Location of Maximum Detection	Sampling Interval of Maximum Detection (ft bgs)	RBC - Industrial Soil* (mg/kg)	COPC?
Pyrene		129000	5.7	0.088	14	126	11	9P2	2.0' - 4.0'	3.07E+03	N
Metals											
Antimony		7440360	10	0.37	2	46	4	HSB1	10.0' - 12.0'	4.09E+01	N
Arsenic		7440382	25	0.74	48	88	55	HSB2	2.0' - 4.0'	1.91E+00	Y
Barium		7440393	207	2.8	70	71	99	9B1	6.0' - 8.0'	2.04E+04	N
Beryllium		7440417	2.3	2.3	1	44	2	9D1	8.0' - 10.0'	2.04E+02	N
Cadmium		7440439	0.9	0.6	2	88	2	9A2	0.0' - 2.0'	5.11E+01	N
Chromium Total		18540299	51.4	3.6	85	88	97	9A2	0.0' - 2.0'	3.07E+02	N
Cobalt	d	7440484	13.6	0.38	25	27	93	9A2	0.0' - 2.0'	2.04E+03	N
Copper		7440508	150	1.2	41	44	93	HSB7	2.0' - 4.0'	4.09E+03	N
Lead	j	7439921	90	0.27	75	126	60	9B1	6.0' - 8.0'	1.00E+03	N
Manganese		7439965	163	2.3	27	27	100	9C1	0.0' - 2.0'	2.04E+03	N
Mercury	k	7439976	0.111	0.00915	18	88	20	HSBA14	0.3' - 2.0'	3.07E+01 1.02E+01 1.00E-01	Y
Nickel		7440020	130	0.35	38	44	86	9A2	0.0' - 2.0'	2.04E+03	N
Selenium		7782492	0.74	0.74	1	88	1	9B1	6.0' - 8.0'	5.11E+02	N
Silver		7440224	0.43	0.43	1	88	1	9B1	6.0' - 8.0'	5.11E+02	N
Thallium		7440280	4.3	0.72	11	44	25	9D2	6.0' - 8.0'	7.15E+00	N
Vanadium		7440622	87.7	4.4	27	27	100	9D2	6.0' - 8.0'	1.02E+02	N
Zinc		7440666	111	2.9	36	44	86	9A2	0.0' - 2.0'	3.07E+04	N
TPH											
TPH - GRO (C6-C12)		NA	3,860	76.4	2	19	11	HSBA9	0.6' - 2.0'	NS	Y

NOTES:

a. In accordance with the Risk Evaluation Matrix (Hull document DUK033.300.0001), all Region III RBCs based on noncarcinogenic effects were reduced by a factor of 10 to account for possible cumulative effects.
b. The April 2006 Region III RBC for total 1,2-dichloroethene was used as a surrogate for cis-1,2-dichloroethene.
c. Hexane was selected as a surrogate for this compound, however, the RBC for hexane was withdrawn from the RBC Table in October, 2005. This value is the adjusted RBC for industrial soil from the April, 2005 RBC Table.
d. The RBC for this compound was withdrawn from the RBC Table in October, 2005. This value is the adjusted RBC for industrial soil from the April, 2005 RBC Table.
e. The April 2006 Region III RBC for 2-butanone was used as a surrogate for 4-methyl-2-pentanone.
f. The April 2006 Region III RBC for isopropylbenzene was used as a surrogate for n-propylbenzene, p-isopropyltoluene, and sec-butylbenzene.
g. The April 2006 Region III RBC for acenaphthene was used as a surrogate for acenaphthylene.
h. The April 2006 Region III RBC for pyrene was used as a surrogate for benzo(g,h,i)perylene.
i. The April 2006 Region III RBC for anthracene was used as a surrogate for phenanthrene.
j. Screening value is the MDE-recommended maximum average value for lead across the exposure unit.
k. Mercury was evaluated with respect to the RBC for mercuric chloride, the RBC for methylmercury and the MDE Non-Residential Soil Cleanup value for total mercury, respectively.
l. NS - No standard available.

Arsenic
25
1.91?

Attachment 2

Table 2-1
Summary of Chemicals Detected in Total Soil in Area B

Site-Specific Human Health Risk Assessment for Area B
Former General Motors Corporation
Baltimore Assembly Plant

SITE-SPECIFIC HUMAN HEALTH RISK ASSESSMENT FOR AREA B
FORMER GENERAL MOTORS CORPORATION
BALTIMORE ASSEMBLY PLANT
2122 BROENING HIGHWAY, BALTIMORE, MARYLAND 21224

TABLE 2-1

SUMMARY OF CHEMICALS DETECTED IN TOTAL SOIL

Chemical of Potential Concern		CAS Registry	Maximum Detected Concentration (mg/kg)	Minimum Detected Concentration (mg/kg)	Number of Reported Detects	Number of Samples	Frequency of Detection (%)	Location of Maximum Detection	Sampling Interval of Maximum Detection (ft bgs)	RBC - Industrial Soil[a] (mg/kg)	COPC?
VOCs											
Acetone		67641	0.11	0.001	35	104	34	7A1	0.0' - 2.0'	9.2E+04	N
Benzene		71432	0.008	0.0009	14	104	13	HMW1	13.0' - 15.0'	5.2E+01	N
Bromomethane		74839	0.001	0.001	1	104	1	7A5	0.0' - 2.0'	1.4E+02	N
2-Butanone (Methyl Ethyl Ketone)		78933	0.02	0.001	30	104	29	7F1	0.0' - 2.0'	6.1E+04	N
Carbon Disulfide		75150	0.0139	0.001	26	104	25	HSBB3	0.5' - 2.0'	1.0E+04	N
Chlorobenzene		108907	0.91	0.001	5	104	5	HMW1	13.0' - 15.0'	2.0E+03	N
Cyclohexane	b	110827	0.16	0.013	2	62	3	7F1	14.0' - 16.0'	1.1E+06	N
Cis-1,2-Dichloroethene	c	156592	0.01	0.01	1	104	1	7F7	8.0' - 10.0'	9.2E+02	N
Trans-1,2-Dichloroethene		156605	0.0082	0.005	2	104	2	HMW3	5.0' - 7.0'	2.0E+03	N
Ethylbenzene		100414	0.068	0.002	6	104	6	HMW1	13.0' - 15.0'	1.0E+04	N
2-Hexanone	d	591786	0.002	0.002	1	104	1	7I3	0.0' - 2.0'	6.1E+04	N
Iodomethane	e	74884	0.00442	0.00442	1	34	3	HSBB12	10.0' - 12.0'	1.4E+02	N
Isopropylbenzene (Cumene)		98828	14	0.07	2	96	2	7F1	14.0' - 16.0'	1.0E+04	N
Methyl Cyclohexane	b	108872	7.3	0.006	3	62	5	7F1	14.0' - 16.0'	1.1E+06	N
Methylene Chloride		75092	0.1	0.0034	5	104	5	7B4	0.0' - 2.0'	3.8E+02	N
Naphthalene		91203	4.5	0.08	12	79	15	7C3	8.0' - 10.0'	2.0E+03	N
Tetrachloroethene		127184	1.8	0.0034	8	104	8	HMW3	5.0' - 7.0'	5.3E+00	N
Toluene		108883	0.011	0.001	5	104	5	HMW1	13.0' - 15.0'	8.2E+03	N
1,1,1-Trichloroethane		71556	0.003	0.003	1	104	1	7F4	0.0' - 2.0'	2.9E+04	N
Trichloroethene		79016	0.14	0.14	1	104	1	HMW3	5.0' - 7.0'	7.2E+00	N
Xylenes, Total		1330207	0.027	0.019	2	104	2	HMW2	15.0' - 17.0'	2.0E+04	N
SVOCs											
Acenaphthene		83329	8	0.079	18	112	16	7B6	0.0' - 2.0'	6.1E+03	N
Acenaphthylene	f	208968	0.25	0.11	3	112	3	7B6, 7F1	0.0' - 2.0'	6.1E+03	N
Acetophenone		98862	0.16	0.16	1	62	2	7F12	0.0' - 2.0'	1.0E+04	N
Anthracene		120127	18	0.085	21	112	19	7B6	0.0' - 2.0'	3.1E+04	N
Aroclor-1016		12674112	0.073	0.073	1	18	6	7F2	0.0' - 2.0'	4.1E+01	N
Aroclor-1242		53469219	0.17	0.17	1	18	6	7F1	0.0' - 2.0'	1.4E+00	N
Aroclor-1254		11097691	0.31	0.029	4	18	22	7F2	0.0' - 2.0'	1.4E+00	N
Aroclor-1260		11096825	0.2	0.027	6	18	33	7D1	0.0' - 2.0'	1.4E+00	N
Benzo(A)Anthracene		56553	52	0.089	32	112	29	7B6	0.0' - 2.0'	3.9E+00	Y
Benzo(A)Pyrene		50328	48	0.089	34	112	30	7B6	0.0' - 2.0'	3.9E-01	Y
Benzo(B)Fluoranthene		205992	60	0.13	32	111	29	7B6	0.0' - 2.0'	3.9E+00	Y
Benzo(G,H,I)Perylene	g	191242	1.4	0.46	3	33	9	HMW2	11.0' - 13.0'	3.1E+03	N
Benzo(K)Fluoranthene		207089	32	0.11	28	111	25	7B6	0.0' - 2.0'	3.9E+01	N
Bis(2-Ethylhexyl)Phthalate		117817	3.5	0.083	12	94	13	7F1	0.0' - 2.0'	2.0E+02	N
Butyl benzyl phthalate		85687	4.8	0.089	12	94	13	7F1	0.0' - 2.0'	2.0E+04	N
Carbazole		86748	7	0.081	11	70	16	7C3	8.0' - 10.0'	1.4E+02	N
Chrysene		218019	46	0.11	34	112	30	7B6	0.0' - 2.0'	3.9E+02	N
di-n-Butyl phthalate		84742	0.8	0.088	7	95	7	7F12	0.0' - 2.0'	1.0E+04	N
Dibenz(A,H)Anthracene		53703	5.7	0.077	14	111	13	7B6	0.0' - 2.0'	3.9E-01	Y
Dibenzofuran	h	132649	3.7	0.14	9	95	9	7C3	8.0' - 10.0'	2.0E+02	N
Diethyl Phthalate		84662	0.23	0.099	6	95	6	7F11	4.0' - 5.0'	8.2E+04	N
2,4-Dimethylphenol		105679	5.8	5.8	1	95	1	7I4	0.0' - 2.0'	2.0E+03	N
Fluoranthene		206440	110	0.091	41	112	37	7B6	0.0' - 2.0'	4.1E+03	N
Fluorene		86737	8.4	0.076	17	112	15	7F1	0.0' - 2.0'	4.1E+03	N
Indeno(1,2,3-Cd)Pyrene		193395	15	0.078	26	111	23	7B6	0.0' - 2.0'	3.9E+00	Y
2-Methylnaphthalene		91576	45	0.086	14	112	13	7F1	14.0' - 16.0'	4.1E+02	N
4-Methylphenol		106445	0.26	0.095	2	62	3	7I4	0.0' - 2.0'	5.1E+02	N
Naphthalene		91203	4.5	0.08	12	112	11	7C3	8.0' - 10.0'	2.0E+03	N

SITE-SPECIFIC HUMAN HEALTH RISK ASSESSMENT FOR AREA B
FORMER GENERAL MOTORS CORPORATION
BALTIMORE ASSEMBLY PLANT
2122 BROENING HIGHWAY, BALTIMORE, MARYLAND 21224

TABLE 2-1

SUMMARY OF CHEMICALS DETECTED IN TOTAL SOIL

Chemical of Potential Concern		CAS Registry	Maximum Detected Concentration (mg/kg)	Minimum Detected Concentration (mg/kg)	Number of Reported Detects	Number of Samples	Frequency of Detection (%)	Location of Maximum Detection	Sampling Interval of Maximum Detection (ft bgs)	RBC - Industrial Soil[a] (mg/kg)	COPC?
Pentachlorophenol		87865	0.1	0.1	1	95	1	7F5	0.0' - 2.0'	2.4E+01	N
Phenanthrene	i	85018	75	0.087	42	112	38	7B6	0.0' - 2.0'	3.1E+04	N
Pyrene		129000	87	0.079	45	112	40	7B6	0.0' - 2.0'	3.1E+03	N
2,4,5-Trichlorophenol		95954	1.1	1.1	1	95	1	7A6	13.0' - 15.0'	1.0E+04	N
Metals											
Antimony		7440360	165	0.48	26	50	52	7A6	0.0' - 2.0'	4.1E+01	Y
Arsenic		7440382	19.2	0.93	51	73	70	7A6	0.0' - 2.0'	1.9E+00	Y
Barium		7440393	889	2.2	72	73	99	HSBB13	0.5' - 2.0'	2.0E+04	N
Beryllium		7440417	3.1	3.1	1	39	3	162	7.0' - 9.0'	2.0E+02	N
Cadmium		7440439	39.6	0.29	21	73	29	7A6	0.0' - 2.0'	5.1E+01	N
Chromium Total	j	18540299	116	2.1	69	73	95	7A6	0.0' - 2.0'	3.1E+02	N
Cobalt	h	7440484	14.2	0.2	39	39	100	7I4	0.0' - 2.0'	2.0E+03	N
Copper		7440508	453	0.71	39	39	100	7A6	0.0' - 2.0'	4.1E+03	N
Lead	k	7439921	11,800	1.6	70	85	82	7A6	0.0' - 2.0'	1.0E+03	Y
Manganese		7439965	2,670	2.4	39	39	100	7A6	0.0' - 2.0'	2.0E+03	Y
Mercury	l	7439976	0.81	0.0105	36	72	50	7A3	5.5' - 7.5'	3.1E+01	N
Nickel		7440020	98.8	0.32	39	39	100	7I4	0.0' - 2.0'	2.0E+03	N
Selenium		7782492	18.2	0.62	9	73	12	HSBB12	0.3' - 2.0'	5.1E+02	N
Silver		7440224	10.2	0.43	24	73	33	7A6	0.0' - 2.0'	5.1E+02	N
Thallium		7440280	11	0.67	5	39	13	7I4	2.5' - 4.5'	7.2E+00	Y
Vanadium		7440622	43.6	1.5	39	39	100	7I3	0.0' - 2.0'	1.0E+02	N
Zinc		7440666	3,330	3.9	39	39	100	7A6	0.0' - 2.0'	3.1E+04	N

NOTES:

a. In accordance with the Risk Evaluation Matrix (Hull document DUK033.200.0034.xls), all noncarcinogenic Region III RBCs were reduced by a factor of 10 to account for possible cumulative effects.
b. Hexane was selected as a surrogate for this compound, however, the RBC for hexane was withdrawn from the RBC Table in October, 2005. This value is the adjusted RBC for industrial soil from the April, 2005 RBC Table.
c. The April 2006 Region III RBC for total 1,2-dichloroethene was used as a surrogate for cis-1,2-dichloroethene.
d. The April 2006 Region III RBC for 2-butanone was used as a surrogate for 2-hexanone.
e. The April 2006 Region III RBC for bromomethane was used as a surrogate for iodomethane.
f. The April 2006 Region III RBC for acenaphthene was used as a surrogate for acenaphthylene.
g. The April 2006 Region III RBC for pyrene was used as a surrogate for benzo(g,h,i)perylene.
h. The RBC for this compound was withdrawn from the RBC Table in October, 2005. This value is the adjusted RBC for industrial soil from the April, 2005 RBC Table.
i. The April 2006 Region III RBC for anthracene was used as a surrogate for phenanthrene.
j. The April 2006 Region III RBC for chromium VI was used as a surrogate for chromium total.
k. Screening value is the MDE-recommended maximum average value for lead across the exposure unit.
l. The April 2006 Region III RBC for mercuric chloride was used as a surrogate for mercury.

Attachment 3

Table 2-2
Summary of Chemicals Detected in Total Soil in Area D

Site-Specific Human Health Risk Assessment for Area D
Former General Motors Corporation
Baltimore Assembly Plant

SITE-SPECIFIC HUMAN HEALTH RISK ASSESSMENT FOR AREA D
FORMER GENERAL MOTORS CORPORATION
BALTIMORE ASSEMBLY PLANT
2122 BROENING HIGHWAY, BALTIMORE, MARYLAND 21224

TABLE 2-2

SUMMARY OF CHEMICALS DETECTED IN TOTAL SOIL

Chemical		CAS Registry	Maximum Detected Concentration (mg/kg)	Minimum Detected Concentration (mg/kg)	Number of Reported Detects	Number of Samples	Frequency of Detection (%)	Location of Maximum Detection	Sampling Interval of Maximum Detection (ft bgs)	RBC - Industrial Soil[a] (mg/kg)	COPC
VOCs											
Acetone		67641	0.021	0.021	1	29	3	8B2	1.0' - 2.5'	9.2E+04	N
2-Butanone		78933	0.02	0.001	7	29	24	8A1	5.0' - 7.0'	6.1E+04	N
Carbon Disulfide		75150	0.002	0.002	1	29	3	8B1	2.5' - 4.5'	1.0E+04	N
Trichlorofluoromethane		75694	0.001	0.001	1	29	3	8A1	5.0' - 7.0'	3.1E+04	N
SVOCs											
Anthracene		120127	0.376	0.376	1	29	3	HSBD2	0.0' - 2.0'	3.1E+04	N
Benzo(A)Anthracene		56553	1.71	0.486	2	29	7	HSBD2	0.0' - 2.0'	3.9E+00	N
Benzo(A)Pyrene		50328	1.38	0.502	2	29	7	HSBD2	0.0' - 2.0'	3.9E-01	Y
Benzo(B)Fluoranthene		205992	1.82	0.693	3	29	10	HSBD2	0.0' - 2.0'	3.9E+00	N
Benzo(G,H,I)Perylene	b	191242	0.815	0.815	1	21	5	HSBD2	0.0' - 2.0'	3.1E+03	N
Benzo(K)Fluoranthene		207089	0.599	0.599	1	29	3	HSBD2	0.0' - 2.0'	3.9E+01	N
Bis(2-Ethylhexyl)Phthalate		117817	0.15	0.15	1	29	3	8A1	1.0' - 2.2'	2.0E+02	N
Butyl Benzyl Phthalate		85687	1.21	0.554	2	29	7	HMW9A	0.5' - 2.0'	2.0E+04	N
Chrysene		218019	1.61	0.167	3	29	10	HSBD2	0.0' - 2.0'	3.9E+02	N
Di-N-Butyl Phthalate		84742	0.394	0.083	6	29	21	HMW9A	0.5' - 2.0'	1.0E+04	N
Fluoranthene		206440	3.39	0.199	6	29	21	HSBD2	0.0' - 2.0'	4.1E+03	N
Indeno(1,2,3-cd)pyrene		193395	0.618	0.618	1	29	3	HSBD2	0.0' - 2.0'	3.9E+00	N
2-Methylnaphthalene		91576	0.1	0.1	1	29	3	8A1	5.0' - 7.0'	4.1E+02	N
Phenanthrene	c	85018	1.98	0.145	6	29	21	HSBD2	0.0' - 2.0'	3.1E+04	N
Pyrene		129000	3.27	0.216	5	29	17	HSBD2	0.0' - 2.0'	3.1E+03	N
Metals											
Arsenic		7440382	14.8	1.1	16	29	55	HMW9A	0.5' - 2.0'	1.9E+00	Y
Barium		7440393	121	1.4	28	29	97	HMW11	6.0' - 8.0'	2.0E+04	N
Chromium	d	7440473	29.6	1	22	29	76	HMW11	6.0' - 8.0'	3.1E+02	N
Cobalt	e	7440484	5.8	0.75	8	8	100	8B3	1.0' - 2.5'	2.0E+03	N
Copper		7440508	55.6	4.2	8	8	100	8A1	5.0' - 7.0'	4.1E+03	N
Lead	f	7439921	113	2.6	14	29	48	HMW9A	0.5' - 2.0'	1.0E+03	N
Manganese		7439965	156	6.9	8	8	100	8B3	1.0' - 2.5'	2.0E+03	N
Mercury	g	7439976	0.435	0.00966	14	29	48	HSBD1	0.0' - 2.0'	31 / 10 / 0.12	Y
Nickel		7440020	13.2	0.38	8	8	100	8B3	7.0' - 9.0'	2.0E+03	N
Silver		7440224	0.65	0.65	1	29	3	HMW11A	0.5' - 2.0'	5.1E+02	N
Thallium		7440280	0.72	0.72	1	8	13	8B3	7.0' - 9.0'	7.2E+00	N
Vanadium		7440622	27.5	1.3	8	8	100	8A1	1.0' - 2.2'	1.0E+02	N
Zinc		7440666	42.3	10.1	7	8	88	8B3	7.0' - 9.0'	3.1E+04	N

NOTES:

a. In accordance with the Risk Evaluation Matrix (Hull document DUK033.200.0034.xls) , all noncarcinogenic Region III RBCs were reduced by a factor of 10 to account for possible cumulative effects.
b. The April 2006 Region III RBC for pyrene was used as a surrogate for benzo(g,h,i)perylene.
c. The April 2006 Region III RBC for anthracene was used as a surrogate for phenanthrene.
d. The April 2006 Region III RBC for chromium VI was used as a surrogate for chromium total.
e. The RBC for cobalt was withdrawn from the RBC Table in October, 2005. This value is the adjusted RBC for industrial soil from the April, 2005 RBC Table.
f. Screening value is the MDE-recommended maximum average value for lead across the exposure unit.
g. Mercury was evaluated with respect to the RBC for mercuric chloride, the RBC for methylmercury and the MDE Non-Residential Soil Cleanup value for total mercury, respectively.

Attachment 4

Table 2-4
Summary of Chemicals Detected in Groundwater in Area A

Site-Specific Human Health Risk Assessment for Area A
Former General Motors Corporation
Baltimore Assembly Plant

SITE-SPECIFIC HUMAN HEALTH RISK ASSESSMENT FOR AREA A (REVISION 1.0)
FORMER GENERAL MOTORS CORPORATION BALTIMORE ASSEMBLY PLANT
2122 BROENING HIGHWAY, BALTIMORE, MARYLAND 21224

TABLE 2-4

SUMMARY OF CHEMICALS DETECTED IN GROUNDWATER

Chemical of Potential Concern		CAS Registry	Maximum Concentration (ug/L)	Location of Maximum Concentration	Potable Use Screening Level[a] (ug/L)	Indoor Air Screening Level[a] (ug/L)	Most Conservative Screening Level	Exceed Most Conservative Screening Level?
Acetone		67641	320	9H1	5.5E+02	2.2E+05	5.5E+02	N
Benzene		71432	440	9I1	3.4E-01	1.4E+01	3.4E-01	Y
2-Butanone		78933	98	9H1	7.0E+02	4.4E+05	7.0E+02	N
N-Butylbenzene	c	104518	8.27	HSBA15	6.6E+01	2.6E+02	6.6E+01	N
Sec-Butylbenzene	c	135988	6.34	HSBA15	6.6E+01	2.5E+02	6.6E+01	N
Tert-Butylbenzene	c	98066	0.72	HMW4	6.6E+01	2.9E+02	6.6E+01	N
Carbon Disulfide		75150	17	9H1	1.0E+02	5.6E+02	1.0E+02	N
Chloroform		67663	1	9F6	1.5E-01	8.0E+01	1.5E-01	Y
Cyclohexane	d	110827	85	9I1	1.2E+03	2.9E+00	2.9E+00	Y
1,2-Dichloroethane		107062	6	9F3	1.2E-01	2.3E+01	1.2E-01	Y
Cis-1,2-Dichloroethene		156592	0.48	HMW4	7.0E+01	2.1E+02	7.0E+01	N
Ethyl Methacrylate	e	97632	1.14	HSBA15	1.4E+02	9.1E+03	1.4E+02	N
Ethylbenzene		100414	100	9H1 / 9I1	1.3E+02	7.0E+02	1.3E+02	N
Isopropylbenzene (Cumene)		98828	18	9I1	6.6E+01	8.4E+00	8.4E+00	Y
P-Isopropyltoluene	c	99876	6.7	HSBA15	6.6E+01	8.4E+00	8.4E+00	N
Methyl Cyclohexane		108872	89	9I1	6.3E+02	7.1E+02	6.3E+02	N
Methyl Tert-Butyl Ether		1634044	7	9I1	2.6E+00	1.2E+05	2.6E+00	Y
4-Methyl-2-Pentanone		108101	230	9H1	6.3E+02	1.4E+04	6.3E+02	N
N-Propylbenzene	c	103651	1.21	HSBA15	6.6E+01	3.2E+02	6.6E+01	N
Toluene		108883	590	9H1	2.3E+02	1.5E+03	2.3E+02	Y
Xylenes, Total	f	1330207	760	9H1	2.1E+01	2.3E+04	2.1E+01	Y
VOCs								
SVOCs								
Acetophenone		98862	4	9H1	6.1E+01	8.0E+05	6.1E+01	N
Acenaphthene		83329	2	9I1	3.7E+01	NA	3.7E+01	N
Acenaphthylene	g	208968	0.02	HMW5	3.7E+01	NA	3.7E+01	N
Anthracene		120127	0.03	HMW5 / HMW6	1.8E+02	NA	1.8E+02	N
Benzo(A)Anthracene		56553	0.02	HMW5	9.2E-02	NA	9.2E-02	N
Benzo(B)Fluoranthene		205992	0.07	HMW5	9.2E-02	NA	9.2E-02	N
Benzo(G,H,I)Perylene	h	191242	0.03	HMW5	1.8E+01	NA	1.8E+01	N
Caprolactam		105602	48	9A3	1.8E+03	NA	1.8E+03	N
Chrysene		218019	0.05	HMW5	9.2E+00	NA	9.2E+00	N
Di-N-Butyl Phthalate		84742	1	9F6	3.7E+02	NA	3.7E+02	N
Dibenzofuran	i	132649	2	9I1	1.2E+00	NA	1.2E+00	Y
2,4-Dimethylphenol		105679	7	9H1	7.3E+01	NA	7.3E+01	N
Fluoranthene		206440	0.19	HMW5	1.5E+02	NA	1.5E+02	N
Fluorene		86737	4	9I1	2.4E+01	NA	2.4E+01	N
2-Methylphenol (o-Cresol)		95487	2	9I1	1.8E+02	NA	1.8E+02	N
4-Methylphenol		106445	7	9I1	1.8E+01	NA	1.8E+01	N
Naphthalene		91203	34	9I1	6.5E-01	1.5E+02	6.5E-01	Y
Phenanthrene	j	85018	5	9I1	1.8E+02	NA	1.8E+02	N
Pyrene		129000	0.14	HMW5	1.8E+01	NA	1.8E+01	N

SITE-SPECIFIC HUMAN HEALTH RISK ASSESSMENT FOR AREA A (REVISION 1.0)
FORMER GENERAL MOTORS CORPORATION BALTIMORE ASSEMBLY PLANT
2122 BROENING HIGHWAY, BALTIMORE, MARYLAND 21224

TABLE 2-4

SUMMARY OF CHEMICALS DETECTED IN GROUNDWATER

Chemical of Potential Concern		CAS Registry	Maximum Concentration (ug/L)	Location of Maximum Concentration	Potable Use Screening Level[a] (ug/L)	Indoor Air Screening Level[b] (ug/L)	Most Conservative Screening Level	Exceed Most Conservative Screening Level?
Metals								
Arsenic		7440382	14.8	9B2	4.5E-02	NA	4.5E-02	Y
Barium		7440393	334	9A3	7.3E+02	NA	7.3E+02	N
Cadmium		7440439	1.98	HMW6	1.8E+00	NA	1.8E+00	Y
Chromium	k	7440473	2.4	9A3	1.1E+01	NA	1.1E+01	N
Cobalt	i	7440484	54.8	9A3	7.3E+01	NA	7.3E+01	N
Copper		7440508	3.4	9A3	1.5E+02	NA	1.5E+02	N
Manganese		7439965	1,180	9A3	7.3E+01	NA	7.3E+01	Y
Mercury	l	7439976	0.712	HMW4	1.1 / 0.37 / 2.0	6.8E-01	6.8E-01	Y
Nickel		7440020	68.5	9A3	7.3E+01	NA	7.3E+01	N
Thallium		7440280	5.3	9B2	2.6E-01	NA	2.6E-01	Y
Zinc		7440666	72.1	9A3	1.1E+03	NA	1.1E+03	N

NOTES:

a. U.S. EPA Region III single chemical Tap Water RBC (April 2006) or MCL, based on lowest of the two values. RBCs based on a non-cancer endpoint have been divided by 10 to achieve target HQ of 0.1
b. U.S. EPA target groundwater concentration based on migration of volatile emissions from groundwater to indoor air (U.S. EPA, 2002).
c. The screening levels for isopropylbenzene were used as surrogate for n-butylbenzene, sec-butylbenzene, tert-butylbenzene, p-isopropyltoluene, and n-propylbenzene.
d. The U.S. EPA target groundwater concentration based on migration of volatile emissions from groundwater to indoor air for hexane was used as a surrogate for cyclohexane.
e. The April 2006 Region III RBC for methyl methacrylate was used as a surrogate for ethyl methacrylate.
f. The U.S. EPA target groundwater concentration based on migration of volatile emissions from groundwater to indoor air for m-xylene was used as a surrogate for total xylenes.
g. The April 2006 Region III RBC for acenaphthene was used as a surrogate for acenaphthylene.
h. The April 2006 Region III RBC for pyrene was used as a surrogate for benzo(g,h,i)perylene.
i. The RBCs for dibenzofuran and cobalt were withdrawn from the RBC Table in October, 2005. The potable use screening level for each is the adjusted RBC for tap water from the April, 2005 RBC Table.
j. The April 2006 Region III RBC for anthracene was used as a surrogate for phenanthrene.
k. The April 2006 Region III RBC for chromium VI was used as a surrogate for chromium total.
l. Mercury was evaluated with respect to the RBC for mercuric chloride, the RBC for methylmercury and the MDE Groundwater Standards for total mercury, respectively.

Attachment 5

Table 2-2
Summary of Chemicals Detected in Groundwater in Area B

Site-Specific Human Health Risk Assessment for Area B
Former General Motors Corporation
Baltimore Assembly Plant

SITE-SPECIFIC HUMAN HEALTH RISK ASSESSMENT FOR AREA B
FORMER GENERAL MOTORS CORPORATION
BALTIMORE ASSEMBLY PLANT
2122 BROENING HIGHWAY, BALTIMORE, MARYLAND 21224

TABLE 2-2

SUMMARY OF CHEMICALS DETECTED IN GROUNDWATER

Chemical of Potential Concern		CAS Registry	Maximum Concentration (ug/L)	Location of Maximum Concentration	Potable Use Screening Level[a]	Indoor Air Screening Level[b]	Most Conservative Screening Level	Exceed Most Conservative Screening Level?
VOCs								
n-Butylbenzene	c	104518	15.3	HMW1	6.6E+01	2.6E+02	6.6E+01	N
sec-Butylbenzene	c	135988	6.99	HMW1	6.6E+01	2.5E+02	6.6E+01	N
tert-Butylbenzene	c	98066	188	HMW1	6.6E+01	2.9E+02	6.6E+01	Y
Chlorobenzene		108907	9.08	HMW1	9.0E+00	3.9E+02	9.0E+00	Y
cis-1,2-Dichloroethene		156592	16.2	HMW3	7.0E+01	2.1E+02	7.0E+01	N
trans-1,2-Dichloroethene		156605	8.6	HMW3	1.2E+01	1.8E+02	1.2E+01	N
Isopropylbenzene (Cumene)		98828	18.8	HMW1	6.6E+01	8.4E+00	8.4E+00	Y
p-Isopropyltoluene	c	99876	1.06	HMW1	6.6E+01	8.4E+00	8.4E+00	N
n-Propylbenzene	c	103651	48.3	HMW1	6.6E+01	3.2E+02	6.6E+01	N
Tetrachloroethene		127184	114	HMW3	1.0E-01	1.1E+01	1.0E-01	Y
1,1,2-Trichloroethane		79005	0.85	HMW3	1.9E-01	4.1E+01	1.9E-01	Y
Trichloroethene		79016	18.4	HMW3	2.6E-02	5.0E+00	2.6E-02	Y
SVOCs								
Acenaphthene		83329	3.25	HMW2	3.7E+01	NA	3.7E+01	N
Acenaphthylene	d	208968	0.02	HMW3	3.7E+01	NA	3.7E+01	N
Anthracene		120127	0.73	HMW1	1.8E+02	NA	1.8E+02	N
Benzo(A)Anthracene		56553	0.14	HMW1	9.2E-02	NA	9.2E-02	Y
Benzo(B)Fluoranthene		205992	0.08	HMW2	9.2E-02	NA	9.2E-02	N
Benzo(G,H,I)Perylene	e	191242	0.06	HMW1	1.8E+01	NA	1.8E+01	N
Benzo(K)Fluoranthene		207089	0.04	HMW2	9.2E-01	NA	9.2E-01	N
Bis(2-Ethylhexyl)Phthalate		117817	11.6	HMW2	4.8E+00	NA	4.8E+00	Y
Chrysene		218019	0.11	HMW1	9.2E+00	NA	9.2E+00	N
Dibenzofuran	f	132649	2.51	HMW2	1.2E+00	NA	1.2E+00	Y
Fluoranthene		206440	0.17	HMW1	1.5E+02	NA	1.5E+02	N
Fluorene		86737	4.38	HMW1	2.4E+01	NA	2.4E+01	N
Naphthalene		91203	2.56	HMW2	6.5E-01	1.5E+02	6.5E-01	Y
Phenanthrene	g	85018	5.27	HMW1	1.8E+01	NA	1.8E+01	N
Pyrene		129000	0.56	HMW1	1.8E+01	NA	1.8E+01	N
Metals								
Arsenic		7440382	12.7	HMW1	4.5E-02	NA	4.5E-02	Y
Barium		7440393	69.8	HMW1	7.3E+02	NA	7.3E+02	N
Selenium		7782492	8.98	HMW3	1.8E+01	NA	1.8E+01	N

NOTES:

a. U.S. EPA Region III single chemical Tap Water RBC (April 2006) or MCL, based on lowest of the two values. RBCs based on a non-cancer endpoint have been divided by 10 to achieve target HQ of 0.1

b. U.S. EPA target groundwater concentration based on migration of volatile emissions from groundwater to indoor air (U.S. EPA, 2002).

c. The screening levels for isopropylbenzene were used as a surrogate for n-butylbenzene, n-propylbenzene, p-isopropyltoluene, sec-butylbenzene and tert-butylbenzene.

d. The April 2006 Region III RBC for acenaphthene was used as a surrogate for acenaphthylene.

e. The April 2006 Region III RBC for pyrene was used as a surrogate for benzo(g,h,i)perylene.

f. The RBC for dibenzofuran was withdrawn from the RBC Table in October, 2005. This value is the adjusted RBC for tap water from the April, 2005 RBC Table.

g. The April 2006 Region III RBC for anthracene was used as a surrogate for phenanthrene.

Attachment 6

Table 2-4
Summary of Chemicals Detected in Groundwater in Area D

Site-Specific Human Health Risk Assessment for Area D
Former General Motors Corporation
Baltimore Assembly Plant

SITE-SPECIFIC HUMAN HEALTH RISK ASSESSMENT FOR AREA D
FORMER GENERAL MOTORS CORPORATION
BALTIMORE ASSEMBLY PLANT
2122 BROENING HIGHWAY, BALTIMORE, MARYLAND 21224

TABLE 2-4

SUMMARY OF CHEMICALS DETECTED IN GROUNDWATER

Chemical of Potential Concern		CAS Registry	Maximum Concentration (ug/L)	Location of Maximum Concentration	Potable Use Screening Level[a] (ug/L)	Indoor Air Screening Level[b] (ug/L)	Most Conservative Screening Level (ug/L)	Exceed Most Conservative Screening Level?
VOCs								
Acetone		67641	9	8B1	5.5E+02	2.2E+05	5.5E+02	N
Benzene		71432	18.1	MW27D	3.4E-01	1.4E+01	3.4E-01	Y
Carbon Disulfide		75150	1.75	HMW10	1.0E+02	5.6E+02	1.0E+02	N
Chlorobenzene		108907	0.79	MW27D	9.0E+00	3.9E+02	9.0E+00	N
1,2-Dichloroethane		107062	1.67	MW27D	1.2E-01	2.3E+01	1.2E-01	Y
1,1-Dichloroethene		75354	2.24	MW27D	7.0E+00	1.9E+02	7.0E+00	N
Isopropylbenzene (Cumene)		98828	0.55	MW27D	6.6E+01	8.4E+00	8.4E+00	N
Methyl Tert-Butyl Ether		1634044	0.53	HMW11	2.6E+00	1.2E+05	2.6E+00	N
Xylenes, Total	d	1330207	3	8B3	2.1E+01	2.3E+04	2.1E+01	N
SVOCs								
Acenaphthene		83329	0.03	HMW10	3.7E+01	NA	3.7E+01	N
Acenaphthylene	e	208968	3	8B3	3.7E+01	NA	3.7E+01	N
Anthracene		120127	0.1	HMW11	1.8E+02	NA	1.8E+02	N
Benzo(A)Anthracene		56553	0.07	MW27D	9.2E-02	NA	9.2E-02	N
Benzo(A)Pyrene		50328	0.1	MW27D	9.2E-03	NA	9.2E-03	Y
Benzo(B)Fluoranthene		205992	0.17	MW27D	9.2E-02	NA	9.2E-02	Y
Benzo(G,H,I)Perylene	f	191242	0.09	MW27D	1.8E+01	NA	1.8E+01	N
Benzo(K)Fluoranthene		207089	0.06	MW27D	9.2E-01	NA	9.2E-01	N
Di-n-Butylphthalate		84742	2	8A1, 8B2	3.7E+02	NA	3.7E+02	N
Caprolactam		105602	77	8B1	1.8E+03	NA	1.8E+03	N
Chrysene		218019	0.13	MW27D	9.2E+00	NA	9.2E+00	N
Fluoranthene		206440	0.34	MW27D	1.5E+02	NA	1.5E+02	N
Fluorene		86737	1	8B3	2.4E+01	NA	2.4E+01	N
Indeno(1,2,3-cd)pyrene		193395	0.07	MW27D	9.2E-02	NA	9.2E-02	N
2-Methylnaphthalene		91576	9	8B3	2.4E+00	3.3E+03	2.4E+00	Y
Naphthalene		91203	47	8B3	6.5E-01	1.5E+02	6.5E-01	Y
Phenanthrene	g	85018	1	8B3	1.8E+02	NA	1.8E+02	N
Pyrene		129000	0.26	MW27D	1.8E+01	NA	1.8E+01	N
Metals								
Arsenic		7440382	1.03	HSBD4	4.5E-02	NA	4.5E-02	Y
Barium		7440393	1,490	8B3	7.3E+02	NA	7.3E+02	Y
Cobalt		7440484	12.1	8B1	7.3E+01	NA	7.3E+01	N
Copper		7440508	5.4	8B1	1.5E+02	NA	1.5E+02	N
Lead		7439921	2.7	8B2	1.5E+01	NA	1.5E+01	N
Manganese		7439965	2,770	8A1	7.3E+01	NA	7.3E+01	Y
Nickel		7440020	12.5	8B1	7.3E+01	NA	7.3E+01	N
Selenium		7782492	5.2	8B1	1.8E+01	NA	1.8E+01	N
Zinc		7440666	15	8B1	1.1E+03	NA	1.1E+03	N

NOTES:

a. Region III single chemical Tap Water RBC (April 2006) or MCL, based on lowest of the two values. In accordance with the Risk Evaluation Matrix (Hull document DUK033.200.0034), all noncarcinogenic Region III RBCs were reduced by a factor of 10 to account for possible cumulative effects.
b. U.S. EPA target groundwater concentration based on migration of volatile emissions from groundwater to indoor air (U.S. EPA, 2002).
c. NA - Not Applicable
d. U.S. EPA target groundwater concentration (U.S. EPA, 2002) for m-xylene used as surrogate for total xylenes.
e. The April 2006 Region III RBC for acenaphthene was used as a surrogate for acenaphthylene.
f. The April 2006 Region III RBC for pyrene was used as a surrogate for benzo(g,h,i)perylene.
g. The April 2006 Region III RBC for anthracene was used as a surrogate for phenanthrene.